

FEAR OF MISSING OUT AND SOCIAL COMPARISON ON INSTAGRAM, ITS EFFECTS  
ON PEOPLE'S PSYCHOLOGICAL WELL-BEING

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## **ABSTRACT**

Fear of missing out is a recurring issue amongst the younger generation because of our quick and easy access to social media. With access to social media platforms being accessible right at your fingertips, the fear of missing out, and the desire to stay continually connected to others puts college students at risk for social comparison to their peers, which may have effects on one's self esteem, as well as the potential to develop depressive symptoms when they compare themselves to others on the Instagram platform.

FOMO could have an effect on college student Instagram users to their psychological well-being when comparing themselves to others. If people turn to Instagram to obtain reassurance, approval, self-gratification, or any other reason when comparing their social media to their peer's social media and they do not receive it, what effect will that have to their psychological well-being or specifically to their self-esteem, could it cause the individual to develop depressive symptoms, or could it have no effect at all? The current study will provide insight on how Instagram, the fear of missing out and peer social comparison has affected individual's psychological well-being.

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## CHAPTER ONE: INTRODUCTION

Instagram, a social networking application developed by Kevin Systrom and Mike Krieger launched October 2010. Since then, this photo sharing application has morphed into an application that allows users to be in constant contact with others, being able to give live updates with users, and being able to post not only pictures, but videos as well. The convenience of this application has made staying in contact with others much easier than ever before.

Past studies conducted on virtual communities, also referred to as social media, have praised the convenience of being able to stay in touch with their friends and family so easily. A study in 2013 called the Roles of Bridging and Bonding in Social Media Communities by Cao, Lu, Dong, Tang, and Li stated that “social capital refers to the social relationships between people that enable productive outcomes”. In other words, the easier people are able to stay connected to others, the more opportunity for social capital. Their study also stated in virtual communities’ individuals were able to engage in knowledge sharing, information inquiry, and learning through posting and responding to messages. The overall message of the study concluded that social media convenience was a wonderful opportunity for people to stay connected with others, and that social media was a positive outlet for people to connect to others.

Fast forwarding to the year of 2019, the luxury of having social media right at your fingertips has raised a lot of concern about a topic known as fear of missing out, also known as “FOMO”. Social media and FOMO seem to go hand and hand in the present time.

### *Fear of Missing Out (FOMO)*

Defined as a pervasive apprehension that others might be having rewarding experiences from which one is absent (Przybylski, 2013).

Consequently, social media use when associated with FOMO appears to have some negative psychological effect on people. With a constant need to stay connected with others, the pressure to share the best aspects of your life with others, the need to impress others, the craving of approval of others, and socially comparing yourself to friends and peers is at an all-time high. Human beings are naturally social creatures; now more than ever people are worried about missing out, and applications such as Instagram act as enablers for people to be constantly comparing their lives with other people's lives; it raises questions such as, how do I measure up to others?

What happens when the fear of missing out drives people to use social media to compare their lives to others and they don't receive the feedback or reassurance they're looking for? Does this affect one's psychological state? Is the convenience of staying connected in fact doing more harm than good to individuals?

Most of the prior research done on this topic has been conducted with Facebook being the primary social media platform used. There have been several theories used to try and explain this phenomenon of social media use and the psychological effects it has on individuals; most of which have researched how people with depressive symptoms leads them to higher social media engagement. The present study filled the information gap of how individuals who have the fear of missing out, use social media platforms, Instagram specifically, to socially engage and compare with others on the site. My study brought a different aspect to prior research, prior research like I stated above, had primarily been done on Facebook, and even a few studies have

been done on Twitter as well. Little to no research has been conducted on this topic for the Instagram application, and that is where the present study contributes new information.

Why is Instagram so important and relevant? Instagram has grown substantially since it was first initially launched in 2010. It has one billion active users, and that number continues to grow daily (<https://www.omnicoreagency.com/instagram-statistics/>). That is one billion people that can be affected by the application, and one billion people at risk for negative psychological consequences if the application is used in a harmful or unhealthy manner. Instagram is a primarily visual application that you can post pictures and videos too. It appears to be just a simple interface and design, unlike Facebook, where there is more content and affordances than Instagram (Golbeck, 2015). With visual applications there seems to be a high risk of comparison to others, which could be detrimental to one's self esteem and could spark depressive symptoms. A key contribution that my study investigated was to test if one's social position has any influence on how people socially compare themselves to others on Instagram? Does socioeconomic status contribute to an individual's self-esteem or depression symptoms? Are there certain demographics that are more at risk than others? For example, is one gender at more risk than the other for FOMO and social comparison with Instagram than the other sex?

FOMO is a key aspect in this study, it's a new explanation explaining why people are turning to social media more than ever. People who have FOMO could be turning to social media for reassurance that their life is better than a friend or peers by comparing their media to others, and not because they are depressed. The need to belong and desire for individuals to stay continually connected to others could be the reason why individuals are posting on Instagram.

With the increase in social media use over the last decade, and with the increase of Instagram users over the past decade, this phenomenon is very much relevant to people. People

who are using this application weekly, daily, or hourly, should know how it is affecting their psychological state. Getting likes can temporarily fuel the soul, but at the end of the day, what is it really doing to one's psychological state?

This information is important to know not only for the Instagram users but potentially for the individuals who are responsible for the design of the application. In addition, past studies have focused on influencers and how they make other Instagram users feel when they are measured up to them. The current study focuses on everyday users on Instagram, people who aren't necessarily recognized as being a micro-celebrity or a social media influencer, but fall into the category of more "average" Instagram users. In the current study, participants were asked about their feelings when comparing themselves to their peers and not comparing themselves to people who are not the normal everyday Instagram users; or as people like to refer to as micro celebrities or social media influencers. Examples of a micro celebrity or social media influencer are individuals with a large following and having influence over their users. The official definition of a social media influencer is "a new type of independent third-party endorser who shape audience attitudes through blogs, tweets, and the use of other social media" (Freberg, 2011). An example of a popular and well-known social media influencer in current time is Kylie Jenner. In the current study, Instagram was put in the category of "other social media".

The results of this study could spark ideas and solutions that could be applied to the application to improve user's well-being and to reduce user's FOMO. This application should be used for fun during one's leisure time. Users shouldn't spend their time on Instagram seeking validation from anyone, the application needs to be used how it was intended to be used for, as a fun, mindless way to pass the time; sharing experiences and thoughts to a social circle.

## **THESIS STATEMENT**

The fear of missing out is a very relevant topic in today's age, and knowing how it affects an individual's psychological well-being if and when an individual engages in social comparison is very important to understand for those who are constantly reaching out to their peers for reassurance and approval via the Instagram application. Ultimately, the research completed on Instagram has not caught up with the social media platform's rapid growth. Studies also haven't looked into the possibility of demographics and user motivations being part of the correlation of fear of missing out and social comparison on Instagram, this present study investigated this idea.

## CHAPTER TWO: LITERATURE REVIEW

The following section highlights past literature that helped developed the hypothesis in the current study. The hypotheses in the current study will give Instagram users a better understanding of how exactly the Instagram application is affecting their day to day lives.

### **Instagram**

At its core, Instagram is a photo and video sharing application. Users take photos with their mobile devices, possibly apply some artistic filters to the photos, and then upload them (Golbeck, 2015). Like other platforms, Instagram has its own set of affordances for users to use. The concept of affordance originally came from ecological psychology by James Gibson in 1979, to designate different action possibilities latent in the physical environment. According to Gibson, the perception of the environment inevitably leads to some course of action. For example, fire affords warmth, illumination, and cooking, but at the same time it may also afford injury to the skin (Bucher, Helmond, 2018). In 1990, Donald Norman, a cognitive scientist, published “The Design of Everyday Things” where he defined affordances as “the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used. In the specific context of cognitive science and design, Norman’s aim was to explore the relationship between human cognition and the design of devices and everyday things (Bucher & Helmond, 2018). Another way Norman described an affordance was it being properties of things, therefore, power is placed in the hands of designers who have the power to enable and constrain action possibilities through their design choices. In terms of social media, each platform has different types of affordances.

“Likes” on Instagram can be compared to as a form of currency, and the ability to like a picture is a way to express to that individual directly that you like their post. Instagram has made

a slight change in parts of the world to remove the ability for users to see the amount of likes a user received on their posts. This change hasn't fully come into effect to all users, but it's an idea that has been discussed to try and eliminate the chances of negative psychological effects such as negative thoughts about body image, especially among young women (CNN, 2017). If the like feature was to be removed, this could potentially change the entire application and how users engage with the application.

As of this moment in time, the Instagram application has affordances that allow the user to interact with the application, affordances such as it being mobile accessible, the ability to like a photo, the ability to hashtag, the ability to share your geo location, and many more. In this particular study, one of the main focuses that was investigated was how it affects users when another user "likes" a photo or video that was posted. How did a like make a person feel about themselves, or how did it make a person feel if they didn't receive likes on their Instagram posts? Did it alter their psychological state, or did it have no effect at all? Also, how did it make an individual feel if they saw their friends receiving more likes than them; how did social comparison affect the individuals that engage in it?

Changing affordances can be detrimental to applications and can totally change the dynamic of an application. For example, Twitter changed their "star" affordance of favoriting a tweet, to a "heart" affordance. This changed the dynamic of the application because it left users confused with what the heart really meant. It left too much opportunity for a user to misinterpret the meaning of the affordance, which left Twitter users quite angry.

Creating new content requires posting a photo or video. Users can choose from various filters to enrich or beautify photos before posting them, and users then have the option to comment upon and like others photos by double tapping the photo or tapping a heart icon (Lup,

Trub, & Rosenthal, 2015). The double tap and heart icon feature influence an individual to make a conscious decision to like another user's photo. Liking a photo directly gives a user feedback on their photo, a like means exactly what it meant to do, it means the user who double tapped your photo that he or she likes your post. Journalists have argued that this image driven nature of Instagram encourages presentation of only the most positive and polished characterizations of one's life (Lup, Trub, & Rosenthal, 2015). For that reason, the current study investigated how people who use Instagram as a form of self-expression and how those Instagram users are psychologically affected when they're putting up their best content and they receive less feedback, or in these terms, receiving less likes than their friends or peers that they are comparing their content too? If receiving a like can directly affect an individual in both a positive or negative manner, if one receives a low amount of positive feedback (likes) could that possibly lead an individual to have low self-esteem, or to cause depression, are these consequences influenced by fear of missing out and social comparison? I state this idea because it was later stated in the Lup and colleagues' study that the quality of feedback plays a role on Facebook, with positive feedback enhancing self-esteem and well-being and negative feedback producing the opposite result in adults. In the case of the current study, "quality" could be looked at in terms of little to no likes means the user received not good quality feedback, or not measuring up to their peers and friends' content when comparing their content to others. With that said, instead of looking at the Facebook platform like they did in their study, the current study investigated through the lens of an average everyday Instagram user.

Lup and colleagues (2015) also considered the difference between public and private users. Their findings were interesting, higher levels of strangers followed on Instagram led to more depressive symptoms through social comparison as a mediator, whereas at lower levels of

strangers followed, it was associated with lower depressive symptoms through social comparison as a mediator. The study aimed to examine the association between frequency of Instagram use and depressive symptoms, and overall, this study came to a conclusion that there was a trend that Instagram use was correlated with depressive symptoms. The current study investigated this claim as well, but it is important to consider the reasons why Instagram causes self-esteem and depression could be different than what they proposed. For example, looking at the number of likes per post a person receives, and when compared to peers, can potentially cause depression and self-esteem issues. As a result, the current study may challenge their findings. In addition, the current study investigated social comparison and FOMO as contributing factors to feeling psychological consequences when using the Instagram application.

Instagram is a purely visual application that can set individuals up for both positive and negative consequences from using the application. Having an initial feeling about how many likes you do or don't get on a photo and comparing it to your peer's photos can have psychological rewards or consequences depending on the individual using the application. With that said, the current study investigated how certain users are more at risk for psychological issues when using the application. What was discovered was as time has passed, users seem to have gotten better with psychological effects, and they now suffer more so with the term FOMO when comparing themselves to others on Instagram. This ran parallel with a more recent study conducted by Mackson, Brochu and Schneider in 2019. Their study investigated the associations between the social media application Instagram and its user's psychological well-being. The participants in this study were both Instagram users, and non-Instagram users, different from the current study. Their study had similarities, they also investigated the depression, self-esteem, and social comparison variables, as well as anxiety, loneliness, and participants' body image. Their

results similar to the current study, that participants with Instagram accounts reported lower levels of depression. Overall, the study found that Instagram was associated with psychological well-being. However, when Instagram users experience Instagram anxiety or engage in social comparison, it is associated with poorer psychological outcomes. Instagram anxiety was defined as an Instagram user's anxiety when using the Instagram application, such as feelings of worry when posting pictures and/or receiving feedback. The Instagram Anxiety scale was developed based on the Facebook-Social Interaction Scale (McCord, 2014). Although the Mackson, Brochu and Schneider study had similarities with the current study, it didn't investigate associations with the dependent variable investigated in the current study, which is FOMO.

### **Fear of Missing Out (FOMO)**

Life is not only about what we are doing but also about what others are doing (Dogan, 2019). With the advent of social media, it is getting easier to be informed about different aspects of an individual's lives, therefore, experiencing fear of missing out. For the current study, the definition of FOMO came from Przybylski et al. (2013) and is defined as a pervasive apprehension that others might be having more rewarding experiences from which one is absent.

### **Studies on FOMO and Social Media**

Continuing with Dogan (2019), social networking sites (SNNs) are compelling platforms in which people can build their own virtual reality. Dogan's study looked at FOMO and perceived stress, slightly different from what was investigated in this study, but there were definitely blurred lines between the two studies. FOMO has been discussed in terms of the Need to Belong theory (NTB). The Need to Belong Theory proposes that the fear of missing out is driven by uncertainty regarding social belonging. The motivation to form and sustain at least a minimum amount of social connections is one of the most powerful, universal, and influential

human drives. It shapes emotions, cognition, and behavior. It explains self-esteem as an internal measure of one's chances of having good relationships (Baumeister, 2012). The higher the degree of the need to belong, the higher the probability for experiencing fear of missing out (Dogan, 2019).

Past studies on FOMO have done little to no research in terms of the Instagram platform. Most of the current research considers other platforms, the most popular being the Facebook platform. Before Instagram became a popular platform used by people, Facebook was the most popular photo sharing platform.

FOMO seems to occur mostly in situations involving friends, so social media sites seem to be at high risk for FOMO. For example, Lai (2016) revealed a link between FOMO, the need to belong, and brain activity. Participants in the study that had an exclusion condition showed greater activation of the left temporal-parietal junction, which was evaluated as an indicator of the need to belong, thus it was concluded that FOMO is related to people's need to belong because people need to stay connected with others and the lack of this connection leads to FOMO.

A study that was conducted by Aalbers, Heeren, McNally, Wit, & Fried (2018) was about social media and depression symptoms. The researchers described social media use in terms of "passive social media use" (PSMU). They described passive social media use as simply just scrolling through social media news feeds. This action alone has been associated with depression symptoms. They stated, it is unclear however, if PSMU causes depression symptoms or vice versa (Aalbers, Heeren, McNally, Wit, & Fried, 2018). Thus far, the studies that have been conducted have been finding that depression or self-esteem issues have been the reason for social media engagement, but the current study investigated if an individual having FOMO uses social

media for reassurance or approval from their friends and peers when posting their content. In other words, when Instagram users want to belong, and if they don't receive that positive feedback they're looking for, did that cause depression or low self-esteem issues with individuals engaging in social comparison? Furthermore, did social comparison between Instagram users enable feelings such as low self-esteem and depressive symptoms? The study stated above looked at the platforms Twitter and Facebook, because checking those platforms seemed to have become part of people's everyday routine. The authors stated that some studies have demonstrated that social media use can be associated with beneficial effects, beneficial effects being higher self-esteem (Gonzales & Hancock, 2011), and others have identified potential negative effects on the well-being via the promotion of stress (Aalbers, Heeren, McNally, Wit, Fried, 2018). This study demonstrated that there could be positive outcomes with social media use and psychological well-being, but the study that's briefly mentioned below says that the simple act of scrolling through social media feeds can put an individual at risk for feelings of depression.

Social media's adverse effects may come from passive social media use, such as scrolling through news feeds or browsing photographs of friends (Aalbers, Heeren, McNally, Wit, & Fried, 2018). Experimental research has shown that PSMU decreases affective well-being (Verduyn, 2015), sense of belonging (Tobin, Vanman, Verreynne, & Saeri, 2015), and life satisfaction (Wenninger, Krasnova, & Buxmann, 2014). This observation suggests that PSMU may constitute risk factors for depression (Aalbers, Heeren, McNally, Wit, & Fried, 2018).

If an act as simple as scrolling through a social media feed can cause feelings of depression, then I think it's a safe assumption to say that if a participant that is on Instagram and has FOMO could be at risk to suffer from feelings of depression. Especially if the platform has

been recognized as a platform that encourages users to put their best self forward. With that said, the stated literature is what helped develop hypothesis number one.

*H1: Depression has a positive correlation with FOMO.*

A study on Instagram, conducted by Jackson and Luchner (2017), investigated how individuals emotionally respond to imagined positive and negative Instagram feedback depending on personality and self-presentation on Instagram. They discussed that social networking sites present certain barriers to psychological well-being. Also, that past research indicates an association between Facebook usage and low self-esteem (Vogel, Rose, Roberts, & Eckles, 2014). Their study didn't directly investigate FOMO as a contributing factor of why people are posting on their Instagram, but they examined how people connect with others on Instagram. This idea was applied with the current study and how people reacted when they don't connect with others, in terms such as, not receiving many likes on an Instagram post or comparing feedback received on a photo with photos posted by peers or by friends. It was discovered that interpersonal feedback on Instagram may be perceived as more rewarding or threatening when individuals are preoccupied with connecting with others and focused on maintaining satisfying interpersonal relationships (Jackson & Luchner, 2017). Another conclusion that was drawn was individuals may interpret fewer "likes" on a post or "following" someone and not being "followed" back as a threat to their self-worth due to implied failure or criticism (Jackson & Luchner, 2017).

The literature stated above is what helped develop hypothesis number two. The past research indicated an association between Facebook usage and low self-esteem (Vogel, Rose, Roberts, & Eckles, 2014). That alone was enough to draw the same conclusion with the Instagram platform. Then when studies looked at how individuals may interpret fewer likes on a

post, or following someone and not being followed back, as a threat to their self-worth, that is when hypothesis number two was developed.

*H2: Self Esteem has a positive correlation with FOMO.*

Since the scale for self-esteem in the current study was a “negative” scale, this hypothesis’s meaning changes a bit. It reads, as self-esteem scores go up, so does the FOMO score, which to some readers may be interpreted as the following; if a participant has high self-esteem (healthy self-esteem) their FOMO score goes up. Since there was a use of a negative scale the hypothesis really reads like this, if a participant scores high on the self-esteem scale (indicating negative self-esteem), their FOMO score goes up.

### **Self-Esteem and Depression**

All of the studies mentioned above investigated Facebook which is a photo sharing application as well as content sharing, or Twitter which for the most part is a content sharing application. How did one's self esteem and depression symptoms become affected when using a platform that is strictly a photo and video sharing application such as Instagram?

#### ***Self-Esteem***

Two different types of self-esteem, low self-esteem and a healthy self-esteem. Having a low self-esteem can be defined as “when you have low or negative self-esteem, you put little value on your opinions and ideas. You focus on your perceived weaknesses and faults and give scant credit to your skills and assets. You believe others are more capable or successful. On the flip side, having a healthy self-esteem is when you have a balanced, accurate view of yourself”. (Mayo Clinic, 2017)

According to Mayo Clinic (2018), self-esteem are factors that can influence an

individual, factors such as the thoughts and perceptions you have about yourself, how others react to you, experiences at home, school, and work, also, age, your status in society, and media messages. When an individual uses a social media platform, they are more often than not putting their best perception of themselves and their life to the public. People who post on Instagram are usually seeking some sort of attention from their friends and peers, and affordances on Instagram such as being able to “like” a photo is a direct measurement to see if it received positive or negative feedback from their peers (Orth, Trzesniewski, & Robins, 2017). If an Instagram user receives many likes on a post, did that increase an individual's self-esteem and vice versa, if they received negative or little feedback, did that decrease self-esteem? Did the outcome change or alter if an individual using Instagram received more likes than someone, they're comparing their content too, and did it alter even more if they received less likes than the person, they compared themselves too?

Mayo Clinic (2017) discussed two different types of self-esteem, low self-esteem and a healthy self-esteem. Having a low self-esteem can be defined as “when you have low or negative self-esteem, you put little value on your opinions and ideas. You focus on your perceived weaknesses and faults and give scant credit to your skills and assets. You believe others are more capable or successful” (pp. 1). On the flip side, having a healthy self-esteem is when “you have a balanced, accurate view of yourself, for instance, you have a good opinion of your abilities but you also recognize your flaws” (pp. 1). An interesting point was made from Mayo Clinic (2017) that is often not considered is when self-esteem is healthy and grounded in reality, it's hard to have too much of it, boasting and feeling superior to others around you isn't a sign of too much self-esteem, it's more likely evidence of insecurity and low self-esteem. This point of view wasn't discussed in any of the studies that have been conducted on this topic. Prior research

strongly suggested that positive social media use (positive feedback from peers) made individuals feel good, and that they have good self-esteem. Accordingly, from this point of view, it suggests that the individual who suffers from the fear of missing out may be seeking out for reassurance from their friends and peers, and if they receive positive affirmation that makes them happy or feel good about themselves, maybe that individual really suffers from low self-esteem. There are limited studies done with self-esteem and social media use, thus another gap in research that the current study addresses.

### ***Depression***

Depression is a mood disorder that causes a persistent feeling of sadness and loss of interest. It involves how you feel, think, and behave. The following were listed as symptoms of depression; feelings of sadness, emptiness, hopelessness, frustration, irritability, loss of interests or pleasure in activities you once enjoyed, sleep disturbances, anxiety, feelings of worthlessness, guilt, and frequent or reoccurring thoughts of death or suicide. Some of the presented symptoms are more severe than others, but my goal is to see if any of these symptoms occur when someone participates in social comparison on Instagram. (Mayo Clinic, 2018)

Mayo Clinic (2018) also had a definition for depression, as well as a list of symptoms that came directly from the DSM-5. They stated that depression is a mood disorder that causes a persistent feeling of sadness and loss of interest. It involves how you feel, think, and behave. The following were listed as symptoms of depression by Mayo Clinic from the DSM-5; feelings of sadness, emptiness, hopelessness, frustration, irritability, loss of interests or pleasure in activities you once enjoyed, sleep disturbances, anxiety, feelings of worthlessness, guilt, and frequent or reoccurring thoughts of death or suicide.

The few studies that did discuss depressive symptoms seemed to have a common theme of it having some sort of negative effect, more so than positive effects. For example, Baker (2016) and Elhai (2016), found that the fear of missing out to be related to greater depression, anxiety, and physical symptoms; this was a conclusion drawn from FOMO alone, but it was stated that these symptoms worsen and became more problematic when you had social media and mobile phone use to the situation (Beyens et al., 2016) and (Oberst et al., 2017). Other conclusions with FOMO and social media were stated by Baker, Krieger, & LeRoy (2016); it is important that we understand the relationship between FOMO and depressive symptoms, but previous research has investigated only overall mood and affect, not specified depressive symptomatology. Thus, another gap in the research, there has been work done with a broader scale with FOMO and mood, but not enough evidence to support that it causes specific depressive symptoms.

There are many symptoms that have the potential of arising when dealing with the fear of missing out, frequent social media use, and social comparison; the better we understand how FOMO and social comparison on social media affects college students, the better we will be able to prevent it from becoming detrimental to college students who are Instagram users. With that said, the following hypotheses were investigated in the current study.

### **Instagram and Psychological Well-Being**

A study conducted by Mackson, Brochu, and Schneider in 2019 investigated associations between Instagram and psychological well-being and it was found that the Instagram platform is associated with psychological well-being, however, when Instagram users engage in social comparison, it is associated with poorer psychological outcomes. They didn't investigate FOMO like the current study, but they did investigate users' loneliness.

Another study that ran parallel with the current study was a study conducted by Yang in 2016. Yang's study argues that browsing and interacting on Instagram lowers a user's loneliness, but if you do a lot of social comparison on Instagram the positive effects of Instagram users cancels out. In this study, loneliness was talked about in terms of mental health, this could hold similar meaning as the depression variable in the current study, that would mean that similar findings were discovered, which are that being on Instagram doesn't increase depression or in the Yang study, "loneliness", but once you start comparing yourself to others there are negative effects. In the current study there was a negative correlation between FOMO and social comparison. If participants compared themselves to others and got positive feedback from their peers, their FOMO score went down and vice versa, if participants compared themselves to others and got negative feedback their FOMO scores went up. The FOMO variable was not discussed in the Yang study, but overall there were similar associations made.

Another study that investigated loneliness was a study conducted by Pittman and Reich, 2016. Their study investigated image based social media platforms, including Instagram. There was an association found between visual social media sites and a decrease in loneliness. Again, it didn't specifically talk about depression, but an argument could be made that loneliness and depression are similar. Therefore, findings in this study are similar to findings in the current study. Like the Pittman and Reich study, the current study didn't find any association with increased depression.

### **Need to Belong Theory**

The Need to Belong Theory is a social psychology theory developed by Roy Baumeister and Mark Leary (1995). They stated that people need to have positive and pleasant, not negative, interactions with others. The Need to Belong Theory refers to the idea that humans have a

fundamental motivation to be accepted into relationships with others and to be part of social groups.

A study done in 2017 by James, Lowry, Wallace, and Warkentin discussed how Online Social Networks (OSNs) continue to have a transformative influence on how people socialize, partially because they help facilitate crucial social contact fulfilling an innate need to belong. Online Social Networks or Social Networking Sites enable individuals to maintain social connections, make new connections, and interact with others who have similar interests. In their study it stated that, as of 2016 Facebook reported 1.23 billion users, so it is not surprising that researchers have found Facebook has the potential to influence the socialization processes of its users (James, Lowry, Wallace, Warkentin, 2017). In the year 2019, a simple Google search will tell you that there are one billion active Instagram users, with 71% of them being under the age of 35, which happens to be my study's target age of participants, college students ages 18-32. James and colleagues' study could easily be applied to the Need to Belong Theory, and how positive or negative feedback could affect an individual when they participate in social comparison to their friend's media, as well as posting an image to seek out reassurance from their friends or peers. Another important point covered in their study shows that people have a strong desire for social contact reflective of the need to belong, and studies also indicate that the "need to interact with others" is a primary reason for people's social media use. The Need to Belong Theory arose from the idea that "fear of being rejected and abandoned by others"(James, Lowry, Wallace, Warkentin, 2017), which goes hand in hand with the current study of seeing how individuals having fear of missing out handle receiving little to no likes on their posts and how they apply those feelings if and when they engage in social comparison. Findings from that question are critical because not fulfilling the need to belong could have many negative physical

and psychological consequences to an individual. This was a consequence that was drawn when looking at the Facebook platform, and now, the current study looked into the consequences of the Instagram platform.

## **Social Comparison Theory**

### *Social Comparison*

Social Comparison is a theory that was developed by Psychologist Leon Festinger in 1954. The theory states that individuals determine their own social and personal worth based on how they stack up against others. Also, people sometimes compare themselves to others as a way of fostering self-improvement, self-motivation, and positive self-image (Festinger, 1954).

This theory weighs in heavily on the current study because social media encourages Instagram users to put their very best self forward for everyone to see, especially on a photo sharing application such as Instagram. For example, participants were directly asked how they feel when they post the same picture as one of their friends and their friends receive more positive feedback than them, positive feedback being the number of likes they receive. How did this affect an individual's psychological state? An example of Social Comparison Theory being applied to social media was done in a study by Putten and colleagues (2018), they looked at likes received on Facebook and how it affected its users. The authors assumed that being “liked” on Facebook is experienced as socially rewarding by recipients and that the likes also worked as secondary reinforcers, thereby triggering social comparison processes and their effective outcomes when evaluating one's own relative standing to other Facebook users. With that said, the Social Comparison Theory can be applied to a situation once the user receives or doesn't receive positive feedback from other users (likes).

Unfortunately, social networking sites encourage users to present the most positive aspects of one's life (Rosenberg & Egbert, 2011) with the motivation of gaining virtual approval from friends via likes and comments. Meaning, when individuals are posting on Instagram, they're posting their very best content, and subjecting themselves to potential disapproval from their peers, and potential disappointment when they don't measure up to their peer's social media when comparing their media content to others.

The current study directly investigated the concern of psychological well-being when Instagram users have FOMO and engage in social comparison. In addition, the Instagram platform has not been thoroughly investigated, but it's been proven on other occasions involving the Facebook platform that FOMO alone is detrimental to one's psychological state. Therefore, we must ask, how did one's psyche become affected when individuals with FOMO also engaged in social comparison while on Instagram?

With that said, the third and final hypothesis was generated from past literature with the idea that participants put their best content on their Instagram pages. In other words, if participants then compare themselves to their peers and feel good about themselves, then the initial thought that they are missing out on something (FOMO), that thought should disappear. If participants compare themselves to their peers and feel negatively about it, then their feeling of FOMO will increase.

*H3: Social Comparison on Instagram has a negative correlation with FOMO.*

The literature that was discussed in this chapter helped guide the researcher when compiling the hypotheses that were tested for the current study. The literature provided a baseline for the researcher to build from, and compare and contrast the findings from the current study to past studies.

## CHAPTER THREE: METHODOLOGY

The following section will explain the design of the current study. How participants were recruited, how the data was measured, the different variable in the study, how data was collected, and how the data was analyzed by the researcher.

### Participants

The participants came from a convenience sample. Participants were recruited through email as well as the social media platform, Facebook. Recruitment took place from January 10th, 2020 through February 5th, 2020. The recruitment on social media occurred via the author’s personal Facebook account on January 10th, 2020. From then on, the survey was shared via social media status updates from the author, friends and acquaintances of the author, and through social media status updates of those people who took the survey. The email recruitment took place sporadically through the period of January 10th, and February 5th; emails were sent to colleagues of professors who were part of the author's thesis committee.

**Table 1**  
*Descriptive Statistics for Instagram Users (N=81)*

Variable	Frequency	Percent
<b>Demographics</b>		
<i>Gender</i>		
Female	65	80.2
Male	16	19.8
<i>Father's education</i>		
High school graduate or less	23	28.4
Some college	23	28.4
College graduate	26	32.1
Post graduate education	9	11.1
<i>Mother's Education</i>		
High school graduate or less	16	19.8
Some college	20	24.7
College graduate	36	44.4
Post graduate education	9	11.1
<b>Frequency of Instagram Use</b>		
About once a day	10	12.3
Sporadically throughout the day, but more than once a day	31	38.3
Several times a day (1-3x every hour)	18	22.2
Multiple times a day (4x every hour)	22	27.2
<b>Use of Instagram for Connection</b>		
I use Instagram to connect with people		
Strongly disagree	2	2.5
Disagree	3	3.7
Neutral	15	18.5
Agree	40	49.4
Strongly agree	21	25.9

People who were currently enrolled as a student and who were also Instagram users were invited to take the survey. A total of 115 participants took the survey, all of which consented to the survey. Out of the 115 total people who took the survey, 81 total surveys were usable. Surveys that were not entirely completed and surveys taken by non-students were discarded from the data set. As shown in Table 1, the 81 participants were made up of 65 females, and 16 males, or in other words, 80.2% of the participants were female, and 19.8% of the participants were male. The participants were aged between 18 and 32 years. The education level for the father and mothers of the participants were high. Of the participants' fathers, 43.2% of them had a college degree, such as a four-year degree and/or postgraduate education. Of the participants' mothers, 55.5% of them had a college degree, such as a four-year degree and/or postgraduate education.

**Table 2**  
*Summary Statistics for Important Indexes (N=81)*

Variables	Mean	SD
<b>Instagram for Self Expression (Cronbach's alpha = 0.88)</b>	<b>3.79</b>	<b>0.88</b>
I use Instagram to show my personality	3.78	0.96
I use Instagram to tell others about myself	3.80	0.90
<b>Self Esteem (Cronbach's alpha = 0.89)</b>	<b>2.00</b>	<b>0.53</b>
I feel satisfied with myself <sup>1</sup>	2.11	0.58
I feel like I don't have much to be proud of	2.10	0.65
I have a positive attitude towards myself <sup>1</sup>	2.10	0.68
I feel like I'm a failure	1.88	0.70
I feel like I'm no good at all	1.81	0.60
<b>FOMO (Cronbach's alpha = 0.85)</b>	<b>2.55</b>	<b>0.98</b>
When I'm on Instagram I wonder if I spend too much time keeping up with what is going on with my friends	2.57	1.13
When I see my friends post on Instagram I fear my friends have more rewarding experiences	2.54	1.23
When I'm on Instagram and I see my friends posts or stories I'm worried my friends are having fun without me	2.57	1.31
When I'm on Instagram and I see I missed a get together with friends it bothers me	2.84	1.33
When I have a good time it is important for me to share the details on Instagram	2.23	1.22
<b>Depression (Cronbach's alpha = 0.81)</b>	<b>1.86</b>	<b>0.67</b>
I am bothered by things that usually don't bother me	1.77	0.75
I feel I am just as good as other people	2.19	0.97
I feel depressed	1.83	0.97
I feel lonely	1.93	0.93
This week I feel that people dislike me	1.62	0.83
<b>Social Comparison (Cronbach's alpha = 0.76)</b>	<b>2.89</b>	<b>0.67</b>
When I compare myself to my peers on Instagram I feel confident	2.79	0.93
When I compare myself to my peers on Instagram I feel attractive	2.74	0.82
When I compare myself to my peers on Instagram I feel desirable	2.78	0.81
When I compare myself to my peers on Instagram I feel inferior <sup>1</sup>	3.25	0.94

Note: Except for Self Esteem and Depression, scale ranges from 1 = Strongly Disagree to 5 = Strongly Agree. Self Esteem and Depression ranged from 1 to 4.

<sup>1</sup>Indicates item is reverse-coded

Table 2 gives a summary of statistics for the indexes that were used during the data analysis process. The variables that were analyzed were Instagram for Self-Expression, Self Esteem, FOMO, Depression, and Social Comparison. The Instagram for self-expression index was a series of questions that originated from the Instagram Motivations series of questions. Participants used Instagram to show their personality ( $M=3.78$ ,  $SD=0.96$ ) and participants used Instagram to tell others about themselves ( $M=3.80$ ,  $SD=0.90$ ). Participants reported on the lower spectrum for self-esteem ( $M=2.00$ ,  $SD=0.53$ ) and for depression ( $M=1.86$ ). Participants scored higher in FOMO when using the Instagram platform ( $M=2.55$ ,  $SD=0.98$ ), and even higher when they engaged in social comparison on the Instagram application ( $M=2.89$ ,  $SD=0.67$ ).

## **MEASURES**

### **Dependent Variable**

#### ***FOMO (Fear of Missing Out)***

The Fear of Missing out Scale was developed in 2013 by Przybylski, Murayama, DeHann, & Gladwell. Although their scale was tailored for Facebook users, I altered their scale to be applied to the Instagram platform. Five questions out of the 10 item Przybylski scale were used and modified to fit my study.

FOMO represented a five-point scale with a series of questions related to fear and social anxiety on their Instagram posts. Respondents were asked questions such as “When I’m on Instagram I wonder if I spend too much time keeping up with what’s going on with my friends” and “When I’m on Instagram and I see my friends Instagram posts or stories I’m worried my friends are having fun without me” Participants responded to each item on a 5-point scale ranging from 1 (*Not at all true of me*) to 5 (*Extremely true of me*). The scale had good internal validity. The following are examples of the type of questions that were asked of the participant.

“When I’m on Instagram I wonder if I spend too much time keeping up with what’s going on with my friends, and “When I see my friends posts on Instagram, I fear my friends will have more rewarding experiences than me”.

## **Independent Variables**

### ***Instagram Use and Motivation***

Participants were asked about their Instagram usage; questions covered the following topics: frequency of use and motivations for use. The next section will describe these measures.

#### ***Frequency of Instagram Use***

The question that was used for frequency of use on Instagram was as follows: How often do you use Instagram? Answers ranged from 1 (*Less than the answers stated above*) to 7 (*Multiple times a day*). As shown in Table 1, approximately half of the respondents (49.4%) used Instagram at least several times a day.

#### ***Instagram Motivations***

Instagram Motivations scales and questions were obtained from a study by Alhabash and Ma (2017). Motivation questions consisted of Social Interaction and Self Expression. Two questions for Social Interaction (e.g. “Connect with people who are similar to me” and “Meet new people”) and two questions for Self-Expression (e.g. “Show my personality” and “Tell others about myself”) were used as Instagram motivation questions. For this study, only “Connect with people who are similar to me” was utilized to measure Social Interaction because the two-item measure showed poor reliability. As indicated in Table 1, over 75% of respondents used Instagram to connect with similar others.

### ***Instagram for Self-Expression***

Two self-expression questions were used as a separate measure to determine participants' reasons for using Instagram for self-expression. Respondents were asked the following: "I use Instagram to show my personality" and "Tell others about myself." The scale had good internal reliability for this sample (Cronbach's  $\alpha=0.88$ ,  $M=3.79$ ,  $SD=0.88$ ).

### ***Self Esteem***

The Self Esteem Scale was developed by Rosenberg in 1965. It's a 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self (e.g. "I feel satisfied with myself" and "I have a positive attitude towards myself"). Out of the 10-item scale I will be using 5 questions, and the questions will be measured with a 4-point scale, 1 (*strongly disagree*) to 4 (*strongly agree*). Higher scores indicate lower self-esteem. The scale was internally reliable for this sample (Cronbach's  $\alpha=0.89$ ,  $M=2.00$ ,  $SD=0.98$ ).

### ***Depression***

Measures of depression were assessed with the Epidemiologic Studies Depression Scale (CES-D). This is a 20-item scale and I chose five questions for my questionnaire. Self-reported measures included items such as "I feel depressed" and "This week I feel people don't like me." The questions were measured with a 4-point scale ranging from 1 (*Rarely or none of the time*) to 4 (*Most of all of the time*). The scale had good internal validity for this sample (Cronbach's  $\alpha=0.89$ ,  $M=1.86$ ,  $SD=0.67$ ).

### ***Social Comparison***

Social Comparison Questions were modified for the study to be able to be used with the Instagram platform and the response scale was adopted by Gibbons & Buunk (1999). Participants were measured with a 5-point scale 1(*strongly disagree*) to 5 (*strongly agree*).

Questions ranged from “When I compare myself to my peers on Instagram, I feel confident” to “When I compare myself to my peers on Instagram, I feel desirable.” Higher scores indicate greater positive feelings from engaging in social comparison on Instagram. The scale had adequate internal validity for this sample (Cronbach’s  $\alpha=0.89$ ,  $M=2.89$ ,  $SD=0.67$ ).

In addition, two survey questions explored how participants feel about their peers' number of followers and how they feel when their peers don't receive a lot of likes on their posts. These questions were not included in any specific indexes, they were asked out of curiosity of how many participants truly cared about the amount of likes they do or don't receive. The questions are as followed:

- 1.) I judge my peers based on their number of followers
- 2.) I judge my peers when they don't receive a lot of likes on their posts

### **Demographics**

Participants were asked demographic questions to determine an individual's characteristics played any role in one's FOMO and social comparison when using the Instagram platform. The following demographic measures were controlled in the study: age, gender, current class standing, race and highest level of education by the father and mother.

### **Data Analysis**

All of the data analysis, correlations that were run, and tables that were used in the present study were completed and developed via the statistical program, Jamovi.

## CHAPTER FOUR: RESULTS

### FOMO and Depression

Hypothesis one postulated that higher levels of depression would correlate with higher levels of FOMO among survey respondents. As shown in Table 3, FOMO had a positive correlation with depression.

### FOMO and Self-Esteem

Hypothesis two stated that there was a positive correlation between self-esteem and FOMO. Following the hypothesis, FOMO had a positive correlation with self-esteem.

**Table 3**  
*Correlations between Social Comparison, Self-Esteem, Depression and FOMO (N=81)*

Variables	Social comparison	Self-esteem	Depression	FOMO
Social comparison	--	--	--	--
Self-esteem	-0.473***	--	--	--
Depression	-0.389***	0.687***	--	--
FOMO	-0.213 <sup>1</sup>	0.235*	0.309**	--

Note: Correlation values represent Pearson correlations.

\*p<.05, \*\* p<.01, \*\*\* p< .001, two-tailed test

<sup>1</sup>Indicates item approaches significance p<.10

### FOMO and Social Comparison

Comparing oneself to others on Instagram can be associated with lowering FOMO feelings as noted in Hypothesis three. As shown in Table 3, FOMO had a negative correlation with social comparison on Instagram ( $r(81)=-0.213$ ). However, the p value was .002 from being significant ( $p=-0.213$ ) for the correlation. In the correlations table, social comparison approached significance (See table 3).

### Modeling FOMO

To better understand the proposed relationships between Instagram, psychological measures and FOMO, a linear regression model predicting FOMO analysis was conducted to observe how demographics, Instagram use, social comparison, depression, and self-esteem

affected FOMO as an outcome variable. Various models were examined with only significant variables applied in the final model. Table four displays the final significant regression model  $F(8,72)=7.81, p<0.001$ ). Overall, the model explained 40% of the variance in FOMO experienced by the respondents (Adjusted R-square=0.405). When a participant reported their mothers' education to be low, the participant reported higher levels of FOMO ( $\beta=-0.27, p=0.004$ ) controlling for other model variables. The more time an Instagram user was on the application resulted in higher rates of FOMO ( $\beta=0.25, p=0.013$ ) even when factoring in multiple FOMO antecedents. Respondents who used Instagram for self-expression also predicted higher levels of FOMO ( $\beta=0.33, p=0.004$ ). Respondents that were on the Instagram application and didn't participate in social comparison had experienced higher FOMO ( $\beta=-0.22, p=0.041$ ). After reviewing this table, the participant that would experience the highest level of FOMO is a participant that has a mother with a low level of education, frequent use of Instagram, when they use Instagram for self-expression, and lower levels of social comparison. Lower levels of social comparison meaning a participant didn't feel confident, attractive, desirable, and they tend to feel inferior to their peers.

Applying the results of the regression model, only the third hypothesis can be confidently stated to demonstrate a significant negative correlation between social comparison and FOMO. Though hypothesis one and two moved in the expected direction with significant correlation to FOMO, both factors were insignificant in the full regression model. Implications for these findings will be discussed later.

Unfortunately, social networking sites encourage users to present the most positive aspects of one's life (Rosenberg & Egbert, 2011) with the motivation of gaining virtual approval from friends via likes and comments. That statement was true for 48.1% of the present studies

participants. Participants were asked “have you ever posted a picture and shortly after deleted the picture because you didn’t receive a lot of likes”, 48.1% of participants answered yes. There was a follow up question that asked participants “if you answered yes to that question, did you repost that photo at a later time in hopes of getting more likes than the first time you posted the photo”? Of those 48.1% of the participants, 23.5% of those participants reported deleting a picture then reposting it for more likes. This was a prime example of how users have a form of addiction when using Instagram, to those users, likes on Instagram are a form of currency, the more likes, the better, for those users.

**Table 4**  
*Ordinary Least Squares Regression Predicting FOMO (N=81)*

<b>Variables</b>	<b>Standardized Beta</b>	<b>P</b>
Female	0.157	0.132
Mother’s level of education	-0.270	0.004
Frequency of Instagram use	0.247	0.013
Using Instagram for Self Expression	0.329	0.004
Using Instagram for Connection	0.112	0.072
Depression	0.083	0.500
Self esteem	0.059	0.649
Social Comparison	-0.217	0.041
F	7.81	0.001
R <sup>2</sup>		0.485
Adjusted R <sup>2</sup>		0.405

## CHAPTER FIVE: DISCUSSION

The present study examined the associations between FOMO, social comparison, and Instagram user's psychological well-being. Past research has suggested that social media platforms such as Facebook can have negative consequences when users interact with the application, as well in some cases, it can be healthy for users who use social media to maintain relationships, and connectivity. With that said, Instagram users who suffer from FOMO and use the application for self-expression, may have a negative experience with the application itself.

### Overview

The present study found that Instagram wasn't associated with increased depression or self-esteem issues, but the platform itself caused users to have FOMO. The platform showed that some users engaged in social comparison when using the application more frequently, and that increased the more the Instagram user checked their Instagram. About half (49.4%) of the participants in the present study reported checking their Instagram 3 times or more in an hour.

Putten and colleagues (2018), looked at likes received on Facebook and how it affected its users. Those participants ran parallel with the following idea stated by Putten and colleagues (2018), the authors assumed that being "liked" on Facebook is experienced as socially rewarding by recipients and that the likes also worked as secondary reinforcers, thereby triggering social comparison processes and their effective outcomes when evaluating one's own relative standing to other Facebook users. In this case, the social comparison was done on a different platform, Instagram.

Hypothesis 1 in the present study was found to be insignificant in the regression model. Although, in the correlation, as participants experienced FOMO, their depression score went up. Meaning, participants felt more depressed the higher their FOMO score was.

Hypothesis 2 in the present study was found to be insignificant in the regression model. Although, in the correlations, as participants experienced more FOMO their self-esteem score went up. One may think that means the participants had “good self-esteem”, but in fact it means the participants had bad self-esteem because the scale that was used in the study was a negative scale. For example, questions used in the self-esteem scale were “I feel like I don’t have much to be proud of”, “I feel like I’m a failure”, “I feel like I’m failure”, and “I feel like I’m no good at all”. There were two additional questions that were asked were positive questions, but when the self-esteem index was created, the scores were reversed coded, those questions were “I feel satisfied with myself” and “I have a positive attitude towards myself”.

Hypothesis 3 in the present study, FOMO has a negative correlation with social comparison on Instagram approached significance. In other words, if a participant scores high on the social comparison scale, they were lower in FOMO, and vice versa. This was the case when participants used Instagram as a way of self-expression. If participants compared themselves to others and got positive feedback from their peers, their FOMO went down and vice versa. Although in table 3 it shows that the relationship with FOMO and social comparison approached significance ( $p=-0.213$ ), in the regression model (See table 4) there is a change with the two variables and the relationship between FOMO and comparison, it becomes significant ( $-0.217$ ). Since significance was being approached in table 3 and was .002 away from being significant, and then when it was put into a regression model with different variables and demographic questions, it became significant ( $p=0.041$ ), therefore, the decision was made to say that hypothesis 3 was significant. Therefore, there is clearly a relationship between social comparison and FOMO on Instagram.

Why was FOMO with depression and FOMO with self-esteem significant in table 3 as separate correlations, but in the regression model, they became insignificant when considered with all the following variables: being female, mother's level of education, frequency of Instagram for self-expression, using of Instagram for connection, depression, self-esteem, and social comparison? The initial scales that were used for depression and self-esteem were more so on the broad spectrum in comparison to the social comparison questions (See table 2). For example, the questions that were used for the social comparison scale were specific to the Instagram platform, they specifically referenced the application. For the depression and self-esteem scales there was no reference to the Instagram platform. There could be an assumption that there could be other contributing factors that played into the participants' reason for answering the way that they did. If the Instagram platform wasn't mentioned in the question, then it is possible that the participants weren't thinking about the application in terms of whether or not they feel poorly about themselves or that they feel sad while using the application, they could have been thinking about their overall psychological well-being without Instagram on their mind.

Interestingly, contrary to the hypotheses, depression and self-esteem were not significant predictors for FOMO in the regression model. This should be interpreted in light of our analysis approach which involved testing all three psychological variables simultaneously as mediators, allowing to covary, so as to tease out their relative, unique effects. Because depression and self-esteem were positively and significantly correlated with FOMO, their construct validity is not in question. What the current findings may suggest is that after accounting for the effects of Instagram use and social comparison, one's overall depression and self-esteem play little role in affecting their FOMO. Perhaps this is due to the fact that Instagram has been shown to improve

loneliness and increase social connectedness and this may offset an individual's depression and self-esteem as it relates to FOMO.

Other correlations that were shown in the model were with depression and self-esteem, as participants felt depressed their self-esteem score went up, meaning the more a participant felt depressed, the higher their self-esteem score was, and in the present study, the self-esteem scale was negative, therefore, the participants had bad self-esteem when their depression score was higher. This finding was similar to Mackson et al. (2019) who also found a significant negative correlation between depression and self-esteem among Instagram users.

### **Instagram and Psychological Well Being**

How does this study tie relate to the Need to Belong Theory and Social Comparison Theory? First, the Need to Belong Theory, which is when people need to have positive and pleasant, not negative, interactions with others refers to the idea that humans have a fundamental motivation to be accepted into relationships with others and to be part of social groups. The Need to Belong Theory arose from the idea that “fear of being rejected and abandoned by others” (James, Lowry, Wallace, Warkentin, 2017) encourage a sense of belonging. With that said, participants could be looking to the Instagram platform as a way of interacting with their peers. They want to feel like they belong, and they want to feel like they're perceived as being happy. This idea was shown with the correlations that were run in the present study. Participants would compare themselves to their peers, and if they received positive feedback or had positive feelings when they compared themselves to their peers, their initial fear of missing out decreased. Previous research has determined that Instagram can encourage a sense of belonging among its users (Keep & Anon, 2017; Pittman & Reich, 2016; Yang, 2016). The visual nature of

Instagram and the affordances of likes, comments and photo-tagging can make users feel social connectedness to one another. The current study findings appear to suggest the same.

Social Comparison theory, when individuals determine their own self-worth based on how they stack up against others they perceive as somehow faring better or worse. In some cases, people tend to compare themselves to others as a way of fostering self-improvement, self-motivation, and a positive self-image (Baumeister & Leary, 1995). This theory puts into perspective why participants felt the need to compare themselves to peers. I cannot make an official claim that social comparison causes depression or it causes self-esteem issues, but as shown in the present study, they correlate (See table 3). Social comparison and self-esteem had a negative correlation, meaning as the social comparison in participants went down, their self-esteem score went down, and since the self-esteem score is a negative scale, that means as social comparison went down, the participants self-esteem improved. Social comparison and depression were also a negative correlation, meaning as participants engaged in social comparison their depression score also went down.

Scholars have shown that social comparison on Instagram leads to higher levels of loneliness (Yang, 2016) or depression (Mackson, Brochu, and Schneider, 2019). However, the effect of Instagram social comparison on anxiety is more complicated. Though one may expect that social comparison on Instagram would lead to greater feelings of anxiety, Mackson and colleagues (2019) determined that social comparison on Instagram did not predict anxiety. If FOMO represents a form of psychological anxiety, the present study determined that social comparison on Instagram decreased FOMO rather than having no effect. It is plausible that what is important is who one is socially comparing on Instagram. Depending on how and with whom you compare yourself to can have positive or negative psychological effects on individuals. As

noted above, engaging in social comparison with one's peers can lead to positive psychological feelings especially if one's Instagram actual self is close to their ideal self. Peers on Instagram would be more likely to determine the authenticity of the actual self-portrayed on Instagram compared to strangers (Lup et al., 2015). Therefore, the positive (or negative) impact of social comparison on Instagram may have much to do with one's imagined audience on the platform. According to previous literature it was a safe bet to infer that Instagram would cause individuals to have negative psychological effects such as depression and bad self-esteem because in past studies people using Facebook and getting little feedback from their peers or negative feedback from their peers led to increased depression and anxiety amongst users. In the present study the anxiety variable was exchanged for the self-esteem variable, so that was exploring a new idea. But as far as the depression variable, past literature made a strong argument that social media was not healthy for psychological well-being. In the present study, there were correlations when people compared themselves, but once the variables were all put together in a regression model, the psychological effects of depression and self-esteem became insignificant.

### **FOMO and Instagram**

This study investigated the relationship between psychological variables, such as depression and self-esteem, and social comparison on Instagram with FOMO. Based on the three supported hypotheses, there are significant associations between one's level of depression, self-esteem and Instagram social comparison to FOMO. All associations moved in the expected direction. Few studies conducted on the Instagram application considered all the variables investigated in the current study: FOMO, social comparison, depression, and self-esteem. Previous work that investigated FOMO was conducted mostly with the Facebook platform. Thus, this information can't be directly compared and contrasted to past studies, but there can be

assumptions made, assumptions such as Instagram in itself seems to be a FOMO-driven platform.

One surprising finding was the frequency of Instagram use and how one uses Instagram played a significant role in greater feelings of FOMO. As an individual uses Instagram more frequently, they will develop greater FOMO anxiety even when controlling for a number of known predictors. This was not expected but shows how heavy Instagram users may develop considerable FOMO effects the longer they spend on the platform. Not as surprising was that using Instagram for self-expression also led to higher FOMO among survey respondents. In addition to the frequent use of Instagram, users who see Instagram as a form of self-expression also develop FOMO.

When looking at gender differences, females were more at risk for FOMO than the male participants. Furthermore, college women, who had mothers with lower education, experienced higher levels of FOMO. Mothers are more likely to have closer relationships with their daughters over their sons. Therefore, it is plausible that mothers, who possess lower education levels, are less likely to provide effective psychological foundations for their college-age daughters. For an aspirational social media platform such as Instagram (Hurley, 2019), lacking a good psychological foundation can make women more likely to feel the effects of FOMO.

## CHAPTER SIX: CONCLUSION

As a visual social media platform, scholars have demonstrated that Instagram has both positive and negative effects on the psychological well-being of its users. The fear of missing out is a very relevant topic, and we're continuing to learn about it every day. Knowing how it affects individual's psychological well-being is important when engaging with the application.

Instagram and psychological well-being have been investigated in the past, but few studies investigate how FOMO correlates with the application. Because people are so involved with the application, it's important to know that in the current study Instagram was found to be a FOMO-driven application, and that psychological well-being such as self-esteem and depression didn't suffer when using the application, thus, supporting studies that talked about social capital. For example, Lu, Dong, Tang and Li's study on social capital concluded that social media convenience was a wonderful opportunity for people to stay connected with others, and that social media was a positive outlet for people to connect to others. Therefore, if you're using the application to stay connected to others, you probably won't pose too much risk to poor psychological issues. Although the current study confirmed past results about Instagram not always being harmful to users, it also has brought to light different concerns that past studies haven't addressed, concerns such as FOMO. What was found in the current study was if you compared yourself to peers on Instagram and had negative feelings about the comparison, your FOMO scores went up. Social comparison in the current study was the one psychological variable that worsened when using the Instagram application.

### **Research Aims**

The hypotheses that were tested, only one was supported. Hypothesis 1 in the present study, FOMO has a positive correlation with depression was found to be not supported.

Hypothesis 2 in the present study, FOMO has a positive correlation with self-esteem was found to be not supported. Hypothesis 3 in the present study, FOMO has a negative correlation with social comparison on Instagram, approached significance in the correlation test, and became significant with multiple variables in the regression model predicting FOMO.

The regression model was run to see if there were any additional findings that could come to light. What was established from the regression model was the most “at risk” Instagram user for FOMO. I determined that females are more at risk, females that have mother’s with low education levels, females that are frequently going on Instagram, females using their Instagram for self-expression, and lastly, females that score low on the social comparison scale.

Interesting findings that were discovered was that Instagram alone as a platform seems to have some preexisting FOMO within the platform. The more participants were on the platform, the more FOMO they experienced. Another point that should be addressed in regards to FOMO would be users that used Instagram as a form of self-expression also scored high on the FOMO scale. Out of the 81 participants, 57 of those participants (70.4%) reported the reason they use Instagram is to show people their personality and out of the 81 participants, 56 of those participants (69.2%) reported they use Instagram to tell others about themselves. This was an interesting point that was addressed because when participants were asked about if they use Instagram to meet new people, only 21 participants agreed with that statement. This was an application that was used to maintain relationships, more so than to meet new people.

### **Limitations**

An important limitation that needs to be addressed in the present study is its correlational nature. While correlations provide useful information regarding associations between Instagram use and FOMO, FOMO and social comparison, FOMO and depression, and FOMO and self-

esteem, they cannot provide information regarding causal relationships between all the variables. There was a regression model that was run, but because the sample size was smaller in size, and the survey was open for such a brief amount of time, it's difficult to make causal statements.

Another limitation in the study were the psychological scales that were used. Unlike the social comparison scale, the depression and self-esteem scale were not Instagram focused. They were broader in a sense participant weren't specifically asked about Instagram and depression, or Instagram and self-esteem. I believe participants would have answered some of their survey questions differently if the scales were more Instagram specific. For example, the depression scale would change dramatically, the questions would be "I am bothered by things on Instagram that usually don't bother me", "I feel I am just as good as other people on Instagram", "I feel depressed when I'm on Instagram", "I feel lonely when I'm on Instagram", and "this week I feel that people dislike me on Instagram". This would be applied to the self-esteem scale as well, making the questions be, "I feel satisfied with myself when I'm on Instagram", "I feel like I don't have much to be proud when I'm on Instagram", "I have a positive attitude towards myself when I'm on Instagram", "I feel like I'm a failure when I'm on Instagram", and "I feel like I'm no good at all when I'm on Instagram". If the scales were all Instagram specific and the results remained the same or similar as the present study, then the results could be strengthened by saying that Instagram isn't the cause of one's depression or low self-esteem. This would be an idea that would be presented if further research was conducted.

### **Future Research**

If further research is conducted there should be a larger sample size, that way when future regression models are run, there can be a more solidified result or statement that can be made from the data. Having a small sample size in this present study makes it difficult to say this

group of people can speak for the “majority” of college students. Not only should the sample size be larger, there should also be a more diverse sample size, the majority of the participants in this study were university students in Hawaii, and the West Coast of the United States. There were some participants spread out in the Midwest of the United States, some from Guam, and two sole participants in other parts of the world. If university students from all over the world were able to take part in future research, there would be the possibility of even further discoveries to be made, as well as possible confirmation of results from the present study.

In addition to a larger and more diverse sample size, I believe that the next sample size of participants should be made up of both Instagram and non-Instagram users. This way comparisons between the two sets of participants can be made. This can further determine if the application is causing FOMO in general, or if FOMO is a sort of human nature that everyone feels in some way.

I would like to reiterate the point of adjusting the psychological scales in a future study, to have scales that gear towards the Instagram platform. The present study used scales that were broader in a sense that it could have led participants to think about their overall happiness, rather than how they feel when they are directly using the Instagram application.

Another possible way to better understand the current findings would be to conduct individual interviews in a future study. Conducting individual interviews could allow for more explanation of why participants answered the survey questions the way they did. More specifically, because of the complex idea of social comparison, I believe that it would be absolutely necessary to conduct the interviews to see how the individual interpreted the concept of social comparison. For example, did participants perceive social comparison to be a positive action on Instagram, or a negative concept. Did participants see no problem in comparing

themselves to others, while other people saw it as psychologically damaging? Conducting interviews in the future could clarify the social comparison concept, and could help better understand the role it plays when users are using Instagram.

In conclusion the findings of the present study can contribute to the existing literature as well as adding new aspects to literature, such as information regarding the Instagram platform. With this information I can say that the data points to the idea that the Instagram platform causes FOMO to arise, and that social comparison does take place, in a similar way that other social media platforms such as Facebook have caused negative effects to its users.

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## Appendix A Survey Recruitment

### **Social Media Survey Recruitment (Facebook, UH Facebook, etc.)**

Aloha!

My name is Katelyn, and I'm a Graduate Student at the University of Hawai'i at Mānoa. I'm conducting a research project about Instagram use and people's psychological well-being. If you're currently in college and an Instagram user, please click the link below to take my survey! I would greatly appreciate your participation in my survey. Completing this survey will help me in my process of completing the requirements required to graduate with my Master's Degree in Communications.

If you choose to participate in the survey you will first be asked to sign a consent form before starting the survey. The consent form informs you that there is little risk to you for participating in this research project. You may become stressed or uncomfortable answering any of the survey questions. If you do become stressed or uncomfortable, you can skip the question or take a break. You can also stop taking the survey or you can withdraw from the project altogether.

Mahalo,  
Katelyn

### **Email Survey Recruitment**

Aloha!

My name is Katelyn, and I'm a second year Graduate Student here at the University of Hawai'i at Mānoa. I'm conducting a research project about Instagram use and people's psychological well-being. If you're an Instagram user I would greatly appreciate your participation in my survey. Completing this survey will help me in my process of completing the requirements required to graduate with my Master's Degree in Communications in May 2020!

If you choose to participate in the survey you will first be asked to sign a consent form before starting the survey. The consent form informs you that there is little risk to you for participating in this research project. You may become stressed or uncomfortable answering any of the survey questions. If you do become stressed or uncomfortable, you can skip the question or take a break. You can also stop taking the survey or you can withdraw from the project altogether.

Mahalo,  
Katelyn

Appendix B  
Survey Questions

**Qualtrics Questions for FOMO and Social Comparison on Instagram**

This survey was 38 multiple choice questions and 2 open ended questions, making a total of 40 questions total.

Q1: Do you have a cell phone

- Yes
- No

Q2: If you have a cell phone, is your cell phone a smartphone, or not?

- Yes
- No
- N/A

Q3: Are you an Instagram user?

- Yes
- No

Q4: If you answered yes to the question above, about how often do you use Instagram?

- Multiple time a day (4x or more every hour)
- Several times a day (1-3x every hour)
- Sporadically throughout the day, but more than once a day
- Every other day
- Once a week
- Less than the answers stated above

Q5: I use Instagram to connect with people

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q6: I use Instagram to meet new people

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q7: I use Instagram to record what I have done in life

- Strongly Disagree
- Disagree
- Neutral

- Agree
- Strongly Agree

Q8: I use Instagram to show my personality

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q9: I use Instagram to tell others about myself

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q10: When I compare myself to my peers on Instagram, I feel confident

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q11: When I compare myself to my peers on Instagram, I feel attractive

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q12: When I compare myself to my peers on Instagram, I feel desirable

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q13: When I compare myself on Instagram, I feel inferior

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q14: I judge my peers based on their number of followers

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q15: I judge my peers when they don't receive a lot of likes on their posts

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

Q16: Have you ever posted a photo on Instagram then shortly after delete it because you didn't receive many likes on it?

- Yes
- No

Q17: If you answered yes to the question above, did you repost that photo at a later time in hopes of getting more likes than the first time you posted the photo?

- Yes
- No
- N/A

Q18: On average, how many likes do your Instagram posts receive?  
(Participant then filled in the blank)

Q19: I feel satisfied with myself

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

Q20: I feel like I don't have much to be proud of

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

Q21: I have a positive attitude towards myself

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

Q22: I feel like I'm a failure

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

Q23: I feel like I'm no good at all

- Strongly Disagree
- Disagree
- Agree
- Strongly Agree

Q24: When I'm on Instagram I wonder if I spend too much time keeping up with what's going on with my friends

- Not at all true of me
- Slightly true of me
- Moderately true of me
- Very true of me
- Extremely true of me

Q25: When I see my friends posts on Instagram, I fear my friends have more rewarding experiences than me

- Not at all true of me
- Slightly true of me
- Moderately true of me
- Very true of me
- Extremely true of me

Q26: When I'm on Instagram and I see I missed a get together with my friends it bothers me

- Not at all true of me
- Slightly true of me
- Moderately true of me
- Very true of me
- Extremely true of me

Q27: When I have a good time, it is important for me to share the details on Instagram

- Not at all true of me
- Slightly true of me
- Moderately true of me
- Very true of me
- Extremely true of me

Q28: I feel depressed

- Rarely or none of the time (less than 1 day out of the week)
- Some or a little of the time (1-2 days out of the week)
- Occasionally or a moderate amount of the time (3 or 4 days out of the week)
- Most or all of the time (5-7 days out of the week)

Q29: I am bothered by things that usually don't bother me

- Rarely or none of the time (less than 1 day out of the week)
- Some or a little of the time (1-2 days out of the week)
- Occasionally or a moderate amount of the time (3 or 4 days out of the week)
- Most or all of the time (5-7 days out of the week)

Q30: I feel I am just as good as other people

- Rarely or none of the time (less than 1 day out of the week)
- Some or a little of the time (1-2 days out of the week)
- Occasionally or a moderate amount of the time (3 or 4 days out of the week)
- Most or all of the time (5-7 days out of the week)

Q31: I feel depressed

- Rarely or none of the time (less than 1 day out of the week)
- Some or a little of the time (1-2 days out of the week)
- Occasionally or a moderate amount of the time (3 or 4 days out of the week)
- Most or all of the time (5-7 days out of the week)

Q32: I feel lonely

- Rarely or none of the time (less than 1 day out of the week)
- Some or a little of the time (1-2 days out of the week)
- Occasionally or a moderate amount of the time (3 or 4 days out of the week)
- Most or all of the time (5-7 days out of the week)

Q33: This week I feel that people dislike me

- Rarely or none of the time (less than 1 day out of the week)
- Some or a little of the time (1-2 days out of the week)
- Occasionally or a moderate amount of the time (3 or 4 days out of the week)
- Most or all of the time (5-7 days out of the week)

Q34: What year were you born?

(Participant then filled in the blank)

Q35: How old are you?

- 18-22
- 23-27
- 28-32
- 33+

Q36: What is your gender?

- Male
- Female
- Other
- I prefer not to answer

Q37: What is your current class standing?

- Community college student
- Undergraduate student
- Graduate student
- Doctoral student
- I'm not a student

Q38: Which of the following describes your race? You can select as many as apply

- White (Caucasian, European, Irish)
- Black or African American
- Asian or Asian American (Chinese, Filipino, Vietnamese, and other Asian origin groups)
- Native American
- Native Hawaiian or Part Native Hawaiian
- Pacific Islander, Hispanic/Latino (Mexican, Puerto, Cuban)
- Other

Q39: What is the highest level of school completed or the highest degree received by your father?

- Less than high school
- High school graduate (Diploma or GED)
- Some college, no degree
- Four-year college or university degree (B.A, B.S)
- Postgraduate or professional degree (MA, MS, PhD, JD)

Q40: What is the highest level of school completed or the highest degree received by your mother?

- Less than high school
- High school graduate (Diploma or GED)
- Some college, no degree
- Four-year college or university degree (B.A, B.S)
- Postgraduate or professional degree (MA, MS, PhD, JD)

Appendix C  
Consent Form



**University of Hawai'i**  
**Consent to Participate in a Research Project**  
Katelyn Reed, Principal Investigator  
*Project title: FOMO AND SOCIAL COMPARISON ON INSTAGRAM*

Aloha! My name is Katelyn Reed and you are invited to take part in a research study. I'm a graduate student at the University of Hawai'i at Mānoa in the Department of Communications.

***What am I being asked to do?***

If you participate in this project, you will be asked to fill out a survey.

***Taking part in this study is your choice.***

Your participation in this project is completely voluntary. You may stop participating at any time. If you stop being in the study, there will be no penalty or loss to you.

***Why is this study being done?***

The purpose of my project is to evaluate what psychological effects Instagram has on individuals who use the platform who have Fear or Missing out (FOMO), and when they compare themselves to other people's Instagram accounts.

***What will happen if I decide to take part in this study?***

The survey will consist of 37 multiple choice questions and 1 open ended question. It will take about 20 minutes to finish. This survey will be asking questions about Instagram use, fear of missing out, and the participant's overall happiness and wellbeing. The survey is accessed on a website to which I will provide you a link.

***What are the risks and benefits of taking part in this study?***

I believe there is little risk to you for participating in this research project. You may become stressed or uncomfortable answering any of the survey questions. If you do become stressed or uncomfortable, you can skip the question or take a break. You can also stop taking the survey or you can withdraw from the project altogether.

There will be no direct benefit to you for participating in this survey. The results of this project will help me fulfill the requirements for my MA Degree in Communications.

***Confidentiality and Privacy:***

I will not ask you for any personal information, such as your name or address. Please do not include any personal information in your survey responses. I will keep all study data secure in a locked filing cabinet in a locked office/encrypted on a password protected computer. Only my University of Hawai'i advisor, my thesis committee, and I will have access to the information. Other agencies that have legal permission have the right to review research records. The University of Hawai'i Human Studies Program has the right to review research records for this study.

***Compensation:***

You will not be compensated for participating in this survey.

***Future Research Studies:***

Participants will not be asked any identifiable information, but if they put information that makes someone identifiable then the identifiers will be removed/destroyed. Even after



**University of Hawai'i  
Consent to Participate in a Research Project**

Katelyn Reed, Principal Investigator

*Project title: FOMO AND SOCIAL COMPARISON ON INSTAGRAM*

removing identifiers, the data from this study will not be used or distributed for future research studies.

**Questions:** If you have any questions about this study, please call or email me at [503-382-7782 & reedkr@hawaii.edu. You may also contact my faculty advisor, Professor Wayne Buente, at [808-956-3360 & wbuente@hawaii.edu]. You may contact the UH Human Studies Program at 808.956.5007 or [uhirb@hawaii.edu](mailto:uhirb@hawaii.edu) to discuss problems, concerns and questions, obtain information, or offer input with an informed individual who is unaffiliated with the specific research protocol. Please visit <http://go.hawaii.edu/jRd> for more information on your rights as a research participant.

**To Access the Survey:** Going to the first page of the survey implies your consent to participate in this study.

Please print or save a copy of this page for your reference.

Mahalo!