UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

THE ROLE OF SOCIAL MEDIA MOTIVATION IN COLLEGE STUDENTS' SOCIAL MEDIA BEHAVIORS AND ADJUSTMENT

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

In partial fulfillment of the requirements for the

Degree of

DOCTOR OF PHILOSOPHY

By

MARGARET KLEISER
Norman, Oklahoma
2022

Downloaded from SHAREOK. Persistent Handle URL: https://hdl.handle.net/11244/335394

THE ROLE OF SOCIAL MEDIA MOTIVATION IN COLLEGE STUDENTS' SOCIAL MEDIA BEHAVIORS AND ADJUSTMENT

A DISSERTATION APPROVED FOR THE

DEPARTMENT OF PSYCHOLOGY

BY THE COMMITTEE CONSISTING OF

Dr. Lara Mayeux, Chair

Dr. Erin Freeman

Dr. Glenn Leshner

Dr. Hairong Song

© Copyright by MARGARET KLEISER 2022
All Rights Reserved.

Acknowledgments

First, I would like to thank my committee, Dr. Erin Freeman, Dr. Hairong Song, and Dr. Glenn Leshner, as well as Dr. Jennifer Barnes for their support and guidance throughout my time at OU. In particular, I would like to thank my advisor, Dr. Lara Mayeux. Thank you for mentorship, patience, humor, encouragement, and most importantly, baked goods, over the past five years. I would not be where I am today without you as my advisor!

Thank you to my friends and peers who supported me along this journey. Thank you for sharing laughs (and many baked goods) with me, answering my (many) questions, and keeping me sane through this journey. Specifically, thank you to Keegan McMillian who answered all of my stats questions (even when he wasn't in school anymore), to my roommate Madison Johnston for guiding me through classes and supporting my sweet tooth, and to Divya Patel who made working long hours on projects a lot less lonely and way more fun. Thank you to Molly O'Mealey and Stephanie Stern, who graciously took a confused and lost first year under their wing and helped me navigate all the challenges of graduate school. Most importantly, thank you for making your duo a trio and being some of my best friends.

To my family – this journey and process would have not been possible without all of you. Gracie – thank you for always being the calm part of our family and keeping me up to date with the "new trends" of high schoolers to inspire my research. Kate – thank you for always being a phone call away, encouraging me to keep working, and reminding me to have a fun during this process. To my parents – I would not be where I am today if it weren't for you two. Thank you for the gift of education, the support and love you showed me constantly, and just being the best examples of hard work. Dad – thank you for always being the positive light in my life and most up-beat person I know. Mom – thank you for being my role model and the woman I aspire to be. Your hard work as a professor instilled in me the drive and desire to want to follow in your footsteps.

Finally, to my soon-to-be husband, Kirkland Polk, thank you for everything over the past five years. Thank you for sacrificing weekends to visit me on weekends while I worked on papers, for proofreading many papers, and for encouraging me every day with your positivity, humor, and endless love. You have made these past five years more joyful and better than I could have imagined – thank you for everything.

I would not be where I am today without all of you – thank you for the constant support and encouragement over the past five years!

Table of Contents

List of Tables…….……..…….. vi
List of Figures……..……....vii
Abstract……...viii
Introduction……....1
Developmental Tasks of Emerging Adulthood……2
Social Media……4
Theories and Research on Social Media Use……...5
Like Seeking Behaviors……..……..……..13
Social Media Motivations …….....15
Popularity…….……..…16
New Directions: Social Media and Emerging Adult Popularity ……...18
Current Studies…….…..22
Study 1……...……23
Method…..……..25
Results……27
Discussion……..……29
Study 2……...……31
Method…..……..33
Results……34
Discussion……..……35
Study 3……...……36
Hypotheses…..……..…..43
Method…..……..49
Results……51
Discussion……..……55
General Discussion……...61
Limitations……64
Future Directions ……...65
Conclusion…….…… 67
References……..…68

List of Tables

Table 1……82
Table 2……83
Table 3……84
Table 4……85
Table 5……86
Table 6……87
Table 7……88
Table 8……89
Table 9……90

List of Figures

Figure 1 ……91
Figure 2 ……92

Abstract

As young adults continue to be the largest reported age group on social media (Auxier & Anderson, 2021), the need to understand *why* they go online and *what* they do online increases to better explain the associated ramifications found with social media use. No longer does general social media time lead to negative outcomes; rather, these outcomes have links to the types of behaviors online and the reasons for going online (Dumas et al., 2020; Nesi et al., 2021). This dissertation explores how college students' social media behaviors, specifically like-seeking behaviors (Dumas et al., 2017), have changed, their possible motivations for going online, and if their motivations moderate the relationship between like-seeking behaviors and resulting behaviors (i.e., depressive symptoms, risky behaviors, etc.). All three studies utilize a college sample and self-report measures. Study 1 explores and confirms how new behaviors added to the original like-seeking scale fit by running exploratory and confirmatory factor analyses. Study 2 examines if popularity serves as a possible motivation for engagement in like-seeking behaviors by using an experimental manipulation. Study 3 explores how motivations (*popularity, social comparison,* and *feedback-seeking*), behaviors, and emotional and behavioral adjustment (*depression, body image satisfaction,* and *risky behaviors)* are related. Results suggest that the original like-seeking scale needs to be updated, popularity is a motivation for like-seeking behaviors even in young adults, and motivations for being online are more strongly related to emotional adjustment than the actual behaviors themselves.

Key words: like-seeking behaviors, social media motivations, popularity, adjustment

THE ROLE OF SOCIAL MEDIA MOTIVATION IN COLLEGE STUDENTS' SOCIAL MEDIA BEHAVIORS AND ADJUSTMENT

In any stage of life, having positive relationships is critical, especially at a transitional time like emerging adulthood (Lambert et al., 2013). At a time when young adults claim more independence (Arnett, 2006) and figure out their own identity (Erikson, 1950), young adults still rely heavily on their peers' approval (Lansu et al., 2022). Young adults may try to attain this approval through popularity-related goals. While previously thought to only exist in adolescence, researchers have found that popularity goals and the desire to be popular continue into young adulthood for some individuals (LaFontana & Cillessen, 2010; Lansu et al., 2022). Self-determination theory argues that young adults will prioritize and value extrinsic goals, which include having social prestige and admiration (Deci & Ryan, 2000), similar to the goals of those who try to become popular. While research on peer status in young adulthood is limited, one possible mechanism that could showcase this continued desire for peer status and social recognition are social media.

As more young adults create and use social media accounts, social media use continues to be an important research topic in the field of developmental and social psychology. 18–29-year-olds continue to be the leading age group in US social media use, with 84% reporting having at least one social media account (Auxier & Anderson, 2021). Social media include anything from social networking sites (i.e., TikTok, Facebook, Instagram) to interactive social applications and websites (i.e., texting, Snapchat, chat rooms). At a developmental stage when young adults look to connect to both old friends and new friends, social media create a new, online world for social interaction, which opens the door to new waves of research exploring the online world of young adults.

Social media allow for a number of practices that can be used to enhance or amplify a user's online presence. These behaviors can serve the function of eliciting more positive engagement with the user's profile (i.e., increase the number of comments, shares, and "likes") and are referred to by researchers as *like-seeking social media behaviors* (Dumas et al., 2017). Some of these behaviors are just typical behaviors when participating online, such as uploading a photo or using a hashtag. However, there is another subset of behaviors that are termed *deceptive.* These online deceptive behaviors include actions such as buying likes and followers, deleting and then reposting a picture, and using picture-editing apps before posting, and are unique to the online social world because they cannot be replicated in an in-person setting (Dumas et al., 2017). This increased time spent curating social media profiles to elicit positive responses from followers comes at a risk of increased depressive symptoms (Dumas et al., 2020; Nesi & Prinstein, 2015). Previous research has demonstrated the relationship between the use of these deceptive behaviors and negative consequences (i.e., emotional outcomes) in high school students (Nesi & Prinstein, 2018) and college students (Dumas et al., 2017). However, what remains unknown are what other factors, such as other emotional adjustment variables (i.e., body image and risky behaviors), peer status, and motivations for using social media, are associated with engagement in these deceptive behaviors in emerging adulthood. The following studies address these unknowns.

The Developmental Tasks of Emerging Adulthood

The developmental period known as *emerging adulthood* describes the phase of life between the ages of 18 and 25. Emerging adulthood is characterized by five key features: *identity exploration, instability, self-focused, feeling-in-between,* and *age of possibilities* (Arnett, 2006). Emerging adulthood is a time when key shifts happen in one's identity, which also leads to many

changes in areas such as romance, jobs, geographic locations, and education. Emerging adulthood is also characterized by independence and autonomy because individuals are self-focused on only their obligations during this stage of life. Finally, emerging adulthood is a chance to reinvent oneself and is a time of optimism for the future (Arnett, 2006). However, as a result of all this independence, freedom, and new social networks, emerging adults are also at a higher risk for mental health problems (Hill, 2019).

For many emerging adults, this time is also marked by the transition into college. Approximately 67% of US high school graduates enroll and register for postsecondary education (NCES, 2017). College life can emphasize many of the changes mentioned previously, such as entering a new living environment. College life also means new social and relational opportunities, which is marked by the novel peer group in this new environment and changing priorities to be more self-focused (Arnett, 2006). An important aspect of this transition is the shift in social structures and social norms, specifically in terms of less defined social hierarchies. While young adult social hierarchies may not be as clearly defined as they are in adolescence, there is still a common goal of social acceptance and desire for social success (Scott & Judge, 2009).

Previous research has found that for first-year students, developing new friendships and creating positive peer relationships is an important part of college success (Friedlander et al., 2007). As emerging adults explore their identities and experience an influx of new relationships and friendships, the pressure to be accepted by one's peers becomes a great motivator. These developmental changes of early adulthood provide a provide a background for understanding emerging adults' changing social world, especially in relation to their ever-changing online, social media world.

Social Media

It is undeniable that social media are a growing force in everyday life. Each year, more and more people are connected online through some type of social media app, and young adults are no exception to this. Previous research has found that 80% of US young adults (ages 18-29) belong to at least one social networking site (Auxier & Anderson, 2021), and report going online multiple times a day, which allows for them to remain constantly connected to media and to their peers. At present, the preferred social media sites for emerging adults are YouTube (95%), Snapchat (65%), and Instagram (70%; Auxier & Anderson, 2021). Social media are now a primary platform for social interaction and social connection among peers (Nesi et al., 2018a). This increase in social media in the day-to-day life of individuals has prompted a change in how researchers study peer relations, and it has called researchers to take into account both the offline and online worlds of emerging adults.

Social media serve as customized and personalized highlight reels of users' everyday lives. Prior research has shown that users will engage in behaviors to maintain a positive profile online (Yau & Reich, 2019). Social media users aim to make their content engaging not only to their close friends but to any of their "followers" in order to receive positive feedback and approval in the form of likes, comments, and shares (Yau & Reich, 2019). Individuals can showcase their best selves to their fellow peers and to any of their followers, and they are able to curate their profiles to best fit what they think is deemed acceptable by peers. Particularly given that emerging adulthood is a time of identity exploration (Arnett, 2006), emerging adults can use these online platforms as inspiration to ascertain their own identity by engaging in social comparisons of others' profiles (Feinstein et al., 2013). They can also use their own social media profiles to "try on" different identities in order to gauge the feedback they receive from others.

Theories and Research on Social Media Use

A dominant perspective in understanding social media use is the *transformation framework* (Nesi et. al, 2018a). This framework argues that social media are not simply a mirror of individuals' offline world, meaning the interactions that take place in-person or offline are not exact replications of what happens online. There are some instances where direct comparisons can be made; for instance, individuals who tend to be victimized offline are also likely to be victimized online (Olweus, 2012). However, the transformation framework argues that the behaviors that happen online are an extension of what happens in the offline world and provides a theoretical foundation for understanding how social media can transform peer group dynamics (Nesi et al., 2018a). While originally suggested for adolescents, this same theory can be applied to emerging adults who see their social world expand to online settings.

The transformation framework presents seven factors that describe why social media transform peer experiences. The seven features are: *asynchronicity, permanence, publicness, availability, cue absence, quantifiability* and *visualness.* First, *asynchronicity* is defined as the time lapse between offline experiences and when someone views it online. This factor transforms peers' interactions because users can carefully spend time choosing what they want to say or post online, and delay posting in "real time." Something that happened hours or days before can be posted at any time (Nesi et al., 2018a).

Second, *permanence* describes how posts can remain accessible for long periods of time after initial posting. Building off the *asynchronicity* concept where posts are viewed and shared not in "real time," *permanence* transforms peer interactions through constantly having content available for others to view, which is unique to the online world (Nesi et al, 2018a; Peter &

Valkenburg, 2013). Posts can remain up for as long as the user chooses, which allows their followers to view their posts at any time.

Third, *publicness* is described as having communication with large groups simultaneously. These large groups can be other peers or even strangers and is unique to the online world because these posts or conversations with such large groups could not be done offline. This allows for users to reach a greater audience than when they were only communicating offline (Nesi et al., 2018a).

Fourth, *availability* is defined as the ease of accessing and sharing content regardless of physical location. This factor allows users constant connection to one another and provides them the chance to constantly access one another's profiles and content regardless of location, which is not possible in an offline world (Nesi et al., 2018a).

Fifth, *cue absence* is known as the range of anonymity users can experience online. This means that social media provide a range for how interpersonal one's communication is online. For example, some photo- and video-based platforms allow for more interpersonal cues (i.e., Snapchat, Instagram) because users can visually see user's reactions or emotions to know how the user feels. Commenting on a post or direct messaging another person provides fewer interpersonal cues, which transforms the way individuals learn to communicate with one another (Nesi et al., 2018a).

Sixth, *quantifiability* is known as the numerical social metrics of the online world, through variables such as followers, likes, comments, or time of posting (Nesi et al., 2018a). This factor transforms peer interactions by giving quantitative measures to things such as best friends (i.e., Snapchat has an algorithm based on messages sent and received between users that ranks best friends), or visibility (i.e., who gets the most likes and comments on their posts). Users can

use these numbers as direct comparisons to see where they rank amongst those in their social groups (Nesi et al., 2018a).

Finally, *visualness* is defined as the degree to which photographs or videos are enhanced before posting. For applications such as Instagram or Snapchat, there are filter suggestions given before posting, and users can even use separate apps to alter their photographs so there is a greater emphasis on a visually pleasing photo (Nesi et al., 2018a; Perloff, 2014). This transforms social interactions because users can spend an endless amount of time perfecting a photo before sending out to the public (Nesi et al., 2018a), thus emphasizing users' appearance or image as a key feature of their online profile.

Another aspect of social media that is unique to the online world is that it allows for constant connection to one another (Underwood et al., 2018). While offline peer interactions happen during school hours or during structured or unstructured activities outside of the classroom, social media allow for the constant connection between members of the peer group. Through the availability, permanence, and visibility of social media, users can be continuously aware of what happens not only with their friends, but anyone connected to members of their social circle (Nesi et al., 2018a; Underwood et al., 2018).

Using the transformation framework as the foundation to understand emerging adults' online world, other theories can assist in understanding the underlying processes associated with social media users' behaviors and outcomes. Prior theoretical work has considered how users of social networking sites will facilitate impression management with their profiles. The hyperpersonal model of computer-mediated communication argues that social media users will carefully perfect their images and profiles in a manner that seems appealing to their "followers" (Walter, 2007). Social media allow individuals the *asynchronicity* of sharing a post at a time

later than it actually happened (Nesi et al., 2018a), and this provides users the time to meticulously select and present certain aspects of the post before making it live to the world. This cannot be replicated in an offline setting.

One theoretical explanation for *why* online self-presentation carries so much significance to emerging adults is that social media posts present opportunities to gain more social capital. Users can achieve social capital online through having more followers, receiving higher numbers of likes and comments, and creating new friendships (Shapiro & Margolin, 2014). Social capital theory broadly discusses how one can accumulate resources through relationships with other people (Coleman, 1988). In an online setting, the resources acquired would be the likes and comments received on posts. Social capital theory could help to explain why users go online – to strengthen their social ties or to feel close to others who can provide emotional support (Shapiro & Margolin, 2014). Individuals can increase their social connections by participating in more social networking sites (Kim & Shen, 2020), and they can garner more positive feedback from those relationships by perfectly customizing and constructing their profiles in a way that promotes online acceptance from their peers (Schwartz et al., 2019). There are other ways users can receive feedback (not necessarily positive) on their post, such as posting about controversial topics or by having a large following (i.e., being a celebrity). However, if users want more positive than negative feedback, and have limited followers (i.e., they are new to their university and still making friends), creating a "picture-perfect" profile may seem like the best way to achieve that positive feedback. The social relationships they form online can be with close friends they already have, or new connections with peers with whom they do not share a close relationship (i.e., just another peer offline, but online they are a follower; Pang, 2018).

Particularly for individuals who have a goal of increasing their peer popularity, social media can act as another platform for young adults to increase their visibility and ultimately their peer status, through behaviors such as carefully editing and perfectly timing their posts before making them "live," so as to receive high amounts of positive feedback (Yau & Reich, 2019). If these behaviors are done well, such that the post times up when most people are online and the edits of the post are deemed "cool" by the peers, the positive response in the form of likes and comments will showcase the influence these users have over their peers. Also, the high amount of feedback will further highlight the level of visibility they have within the social group (Nesi et al., 2018b).

However, in order to successfully gain social capital online, users have to be attuned to what the current trends are within their age group because that will help garner more visibility and attention from their peers. For example, users who are aware of the current "TikTok" dance or video trends and post a video within that trend are more likely to receive positive feedback than users who follow a trend from a two months ago (Hutchinson, 2021). To be aware of these trends, individuals may need to spend copious amounts of time online to make sure they are up to date. This in turn can lead to social comparison, because as emerging adults try to remain up to date of the current trends and what posts receive the highest amount of feedback, they have direct, *quantifiable* comparisons of how they compare to other users (Nesi et al., 2018a). When individuals engage in social comparison, it can have serious negative impacts on their well-being (Shapiro & Margolin, 2014), especially when they see that they do not receive as many likes or views as their peers (Nesi et al., 2018a). When users spend significant time creating their post in the hopes of receiving positive remarks and upward social comparison (i.e., are they doing better compared to their followers on a post), it can warrant some harsher comparisons when the results

are not what was originally desired (Boyd & Ellison, 2008). Thus, in studying social media, it is necessary to also analyze the potential ramifications associated with these social media behaviors.

Outcomes Associated with Social Media Use

These theoretical and empirical perspectives provide a strong foundation for understanding the social processes behind emerging adults' social media behaviors, but it is imperative to also understand the outcomes commonly associated with social media use as well.

Positive Outcomes. The constant connections and awareness of the peer group that social media can provide are linked with positive outcomes, such as social support. Previous research has shown that when social media facilitate direct, healthy social interactions between friends, there are positive effects on their mental health (Clarke et al., 2018). Another positive element of social media is that it can become a platform for users to seek support from one another. Research has found that girls use social media to receive academic and emotional support (Mackenzie et al., 2020). Further, emerging adults from marginalized groups who struggle to connect with others can turn to social media to find peers they can relate to. For example, individuals who identify as LGTBQ+ but do not feel comfortable sharing that with their in-person peers, or who do not know others who are members of the LGBTQ+ community, can turn to online groups or individuals to receive support (Godard, 2021; Nesi et al., 2019). Social media provide them an outlet to seek safety and similarity with other peers that they may not have the option to befriend otherwise. These social sites can also aid users in seeking mental health resources (Nesi, 2020). Thus, social media can build connections for users who feel different or physically distant from their peers, and it provides users the opportunity to stay connected by an alternate means.

Negative Outcomes. Despite these apparent benefits, researchers have also found there to be "false advertisement" associated with social media use. First, because social media are asynchronous, users can curate what they want to post and how they want to present themselves online (Dennis et al., 2008; Nesi et al., 2018a). Drawing on the hyperpersonal model of computer-mediated communication, researchers have observed that users can present alternative versions of themselves that are different from how they really are in person (Walter, 2007). This means that individuals can spend large amounts of time on a post before making it "live" to ensure the post portrays the user in the most desirable way. After spending a great deal of time perfecting the post, users may expect positive feedback from their followers (Walter, 2007). If a post does not do as well as the user had hoped, this can lead to feelings of lower peer belonging (Dumas et al., 2020) and lower self-esteem (Gil-Or et al., 2015), which are similar outcomes when someone is rejected in real life (Prinstein & Aikens, 2004). This showcases another example of how social media act as an extension of emerging adults' social world.

Another way social media can negatively influence emerging adults is through the encouragement of risky behaviors they can easily view online. Social media serve as a "super peer" (Strasburger, 2007). Due to the nature of social media, users are over-exposed to risky behaviors, such as underage drinking, smoking, and sexual behaviors, either from their own peers or anyone else they follow on the social media platforms. This may increase the frequency with which they see others engaging in these behaviors. Research has shown that exposure to risk-taking online can lead to an increase in risky behaviors for viewers (Strasburger, 2007; Vannucci et al., 2020). Eventually there is a dilution of the "scariness" of these behaviors by over-exposure, and this can encourage more individuals to participate in behaviors they would not normally see as frequently in an offline setting (Vannuci et al., 2020). One study found that

frequent use of Instagram and Snapchat predicted more engagement in delinquent behaviors six months later (Vannucci & Ohannessian, 2019). Another study found that when individuals see their peers engaging in a risky behavior and receiving a positive peer response via "likes" and comments, it leads to a neural imbalance between enhanced reward sensitivity and immature cognitive control circuitry (Sherman et al., 2016). Thus, as individuals receive rewards online for participation in these behaviors through likes, comments, and followers, other users may see this as an opportunity to also engage in these behaviors so as to elicit more positive feedback on their own posts and, potentially, greater peer admiration offline (Moreno & Whitehill, 2014).

Another negative outcome associated with social media is the decline of mental health. Previous studies have shown that frequent use of social media is associated with depressive symptoms (van den Eijinden et al., 2008; Nesi & Prinstein, 2018), especially for girls (Nesi & Prinstein 2018). While emerging adults may already be aware that group hangouts happen without them, the *asynchronous* nature of social media increases these feelings of rejection because the posts could happen multiple days after the hangout which only re-emphasizes the point that one was left out (Underwood et al., 2018). As a result of this peer rejection and feelings of being left out, this can lead to lower sense of peer belonging and depressive symptoms (Prinstein & Aikens, 2004).

Knowing that photo-based platforms are the most common and popular for emerging adults (i.e., YouTube and Instagram; Auxier & Anderson, 2021), social comparisons in relation to one's body has led to worsening body dissatisfaction in emerging adulthood (Choukas-Bradley et al., 2020; Jiotsa et al., 2021). Since users have time to perfectly curate their posts and can be selective in which photos they share online, social media use can lead to unrealistic expectations about what body shapes and other aspects of physical appearance are "normal,"

with greater mental health problems resulting from not achieving such unrealistic goals (Choukas-Bradley et al., 2020).

Despite ongoing concerns about social media users' mental health, seven in ten Americans use social media every day (Auxier & Anderson, 2021). Knowing the harmful effects related to social media does not prevent people from using them, suggesting that peer influence and the lure of peer online connection trumps any concern about mental health outcomes.

Like-Seeking Behaviors

Social media use involves a unique set of online behaviors that serve the purpose of maximizing the user's experience. For example, common online behaviors include scrolling and lurking (Underwood & Ehrenreich, 2017), which involve looking through the media feed without interacting with any posts. With lurking, users can spend a great deal of time aimlessly going through their social media feeds with no real purpose, meaning they scroll to avoid being bored (Underwood & Ehrenreich, 2017). Another common behavior similar to lurking is social monitoring, in which users check their feeds for specific information (e.g., to see if they have been excluded from something; Swirsky et al., 2021). Finally, users engage in self-presentation, or sharing personal information by posting (Valkenburg & Peter, 2011). Self-presentation behaviors can be simple, such as liking or commenting on the posts of others (Valkenburg et al., 2011), or they can be more manipulative behaviors that include carefully selecting what and how one will post (Dumas et al., 2017; Valkenbug & Peter, 2011). Self-presentation is unique because it requires active participation on the part of the user, whereas the other two behaviors are more passive.

These more active social media behaviors are typically referred to as "like-seeking behaviors," or strategies that social media users will use to increase the number of "likes" they

receive on their social media posts (Dumas et al., 2017). Some examples of like-seeking behaviors include posting at certain times of the day, purchasing more followers, and editing photos (Dumas et al., 2017). In their initial study of like-seeking behaviors, Dumas and colleagues (2017) employed an exploratory factor analysis to identify two groups of like-seeking behaviors: *normative* and *deceptive*. Normative like-seeking behaviors included behaviors such as uploading a picture or using a hashtag, which are typical behaviors used with social media. Deceptive like-seeking behaviors included things such as purchasing likes, using software to modify the user's physical appearance, and liking other people's photos ("like for like").

Deceptive like-seeking behaviors are of particular interest because they represent strategies for bolstering attention to posts or garnering more visibility among online friends and followers in a manipulative way. Previous research on deceptive like-seeking has focused primarily on Instagram because it is highly visual and centered on peer feedback (Nesi & Prinstein, 2018), as well as being one of the top sites that emerging adults use (Auxier & Anderson, 2021). Photo-sharing sites like Instagram allow the user to showcase social connections with other people by posting pictures with peers (Manago et al., 2008), or they can be used as a way of self-promotion through "solo" pictures (i.e., selfies or posed photos of oneself; Katz & Crocker, 2015). Before posting photos, users may choose to engage in normative like-seeking behaviors (i.e., they will put a hashtag with their photo), but if they hope to receive a significant amount of attention and positive feedback, they may engage in deceptive or manipulative behaviors (i.e., selecting certain filters or edits and posting only the "best" photos) or waiting to post until certain times of the day in hopes for more likes and comments (Dumas et al., 2017). The *asynchronous* nature of social media means that users can choose exactly how they want followers to view them online and can present themselves in a way that they believe

will attract positive attention (i.e., likes and comments). Prior research has found that receiving many likes on posts can lead to a greater sense of belonging, but not if users achieved their likes in a deceptive manner (Dumas et al., 2020). When users received the feedback they had hoped for by engaging in deceptive practices, it did not make them feel closer to their peers (Dumas et al., 2020).

Social media evolves quickly, and how users choose to engage online changes. One of the first social media sites, Facebook, was created for the purpose of connecting students together. However, today, it does much more than just connect people. Facebook lets people join support groups, view ads, share and discuss news, receive feedback on their posts, and still remain connected to others, among other things. Instagram was created as a way to share beautiful photos. Now, it is used as a way to share life updates, market a brand, and receive feedback from followers. As the social media sites evolve, so too do the behaviors of their users. Thus, the ability to measure like-seeking behaviors quickly falls short if the scales used do not reflect these changes.

Social Media Motivations

Another factor in understanding social media behavior is the motivation behind why young adults post on social media. Research has uncovered many different reasons and motivations users will go online, whether it be for social and romantic support, to learn answers to questions, or to learn about how others view them. Nesi and Prinstein (2015) developed the Motivations for Electronic Interaction Scale (MEIS) to better understand the attitudes and behaviors of social media users. Originally, this scale was measured in adolescence and had four factors. However, when it was studied in college students, it expanded to five factors (Harmon, 2021). These factors are *sexual health, feedback seeking, social comparison, emotion regulation*

and *romantic communication*. The current studies focus on the two factors of *feedback seeking* and *social comparison* because these are the most relevant to posting and sharing on social media, which is the primary focus of this dissertation. Examples of *feedback seeking* include "I use social media to see what others think about the things I send/post*"* or "I use social media to see what others think about my photos," and examples of *social comparison* include "I use social media to compare the way I look with other people's looks" or "I use social media to compare my life with other people's lives."

Knowing both the positive and negative effects associated with social media use, researchers wanted to understand if users' motivations for posting to these sites influenced the kinds of outcomes they experienced. Nesi and Prinstein (2015) found that user motivations to receive positive feedback from peers was positively related to depressive symptoms. Their study revealed that some users may be motivated to post purely for objective feedback (i.e., to receive likes and comments) from their peers as opposed to posting to compare themselves to their peers (i.e., did they receive more likes/comments than their peers; Harmon, 2021). Using social media platforms as a context in which to seek peer approval may be particularly dangerous for first-year college students, for whom peer acceptance is still very important (Scott & Judge, 2009). The motivation for certain online behaviors has become a recent interest for researchers and still has room to grow in uncovering the different motivations behind social media use. What other motivations could influence the relationship between social media deceptive behaviors and emotional outcomes? One answer could be the desire for *popularity*.

Popularity

As mentioned earlier, having friends, and generally being accepted by peers, is an important goal for emerging adults, and this social support can help individuals cope with life's

biggest changes and challenges (Antonucci & Webster, 2019). At the emergence of adolescence, researchers have found that power-based peer status emerges, known as popularity (Cillessen & Mayeux, 2004), and recently researchers have found that this power-based form of status continues to be salient in emerging adulthood, especially for college students (LaFontana & Cillessen, 2010; Lansu et al., 2022).

Popularity is defined by one's social visibility among peers (Cillessen & Rose, 2005), influence over the peer group, and connectedness to others within the peer group (Cillessen & Marks, 2011). Previous research has found that young adults tend to attribute popularity to peers who exhibit more prosocial behaviors and positive peer interactions (i.e., those who are outgoing and sociable; O'Mealey & Mayeux, 2021). Another correlate of popularity in emerging adulthood is being respected (Lansu et al., 2022). A common definition and characteristic of popularity in young adulthood is "prestige" (Lansu et al., 2022). A robust correlate of adolescent popularity is aggression, but, surprisingly, research does not find aggression and popularity to be correlated in young adulthood (Lansu et al., 2022; O'Mealey & Mayeux, 2021)

However, while the behaviors associated with young adults' popularity may not include aggression, that does not mean aggressive behaviors are not utilized in the attainment of popularity at this age. Previous research has found that when discussing the emergence of popularity and the best way to achieve popularity in emerging adulthood, aggressive and prosocial behaviors both need to be utilized (Lansu et al, 2022). Another study found that college students were often willing to prioritize popularity over other social goals like being a good friend (LaFontana & Cillessen, 2010).

As emerging adults continue to prove that popularity remains prominent in their lives, research needs to understand how these social goals extend to an online setting. Emerging adults

are the largest age group that uses social media (Auxier & Anderson, 2021), which suggests that social media are an important part of their social world. Prior research has found a strong relationship between popularity and social media likes in adolescence, such that higher amounts of likes were given to more popular individuals (Nesi & Prinstein, 2018). However, no research has examined this relationship in emerging adulthood even though popularity related goals still exist into college (LaFontana & Cillessen, 2010; Lansu et al., 2022). The likes and comments on posts could be considered quantifiable online indicators of influence and social prestige, two important components of popularity (Cilleseen & Rose, 2005). Thus, as popularity extends to emerging adults' online world, it becomes central to understand how and why emerging adults use social media.

New Directions: Social Media and Emerging Adult Popularity

So far, this paper has highlighted key factors that characterize the young adulthood transition, popularity as an important form of peer status in emerging adulthood, and theoretical and empirical perspectives on social media use. The series of studies presented here integrates research on peer relations and social media in novel ways that will lead to a better understanding of emerging adults who may be at particular risk for harmful outcomes associated with social media use, and a greater understanding for the motivations behind emerging adults' motivations for using social media.

Finding acceptance by the peer group while also engaging in identity exploration are key factors in emerging adulthood, especially first-year college students (Arnett, 2006). During this same developmental stage, the majority of adults belong to at least one social networking site (Auxier & Anderson, 2021). Further, the motivation to achieve peer status remains salient for some emerging adults (LaFontana & Cillessen, 2010), sometimes leading to the prioritization of

social prestige over other important social, academic, and personal goals (Dawes & Xie, 2014; LaFontana & Cillessen, 2010). This desire to prioritize popularity above other goals may become more apparent when using social media.

As more adults go online, they learn more about the nuances that are associated with an online social world. First, they can have multiple "social groups" and expand their social circle. Whether through new friend groups at school or in their working world, their social circle expands beyond their adolescent peer and family groups (Arnett, 2006). With social media, young adults can interact and stay connected to all of their social groups and individual friends (Underwood et al., 2018). As emerging adults seek to solidify their identity, they may look to one another to help create those identities (Festinger, 1954). Thus, social media provide an additional platform for emerging adults to observe what is valued by their peers and what is not.

By learning the group norms and trends, emerging adults can carefully manage and edit their online profiles and "online identity" accordingly (Valkenburg & Peter, 2011). In these ways, social media represent an online extension of the offline social group, a context in which users can engage in self-presentation, interact with each other, receive feedback, and gain visibility among peers. However, unlike in "real-world" peer interactions, social media allow users to spend as much time as they desire editing and perfecting their posts before their peers see them (Nesi et al., 2018a). This allows them to create and maintain a certain, perfect image for their peers (Manago et al., 2008). Furthermore, there are a host of deceptive strategies available that allow users to manipulate how viewers see them and their social media posts.

In addition to deceptive strategies such as editing and timing posts, emerging adults have the ability to know exactly how they compare to their peers. Social media users have access to their peers' profiles, which allows them to *quantifiably* compare how their posts are doing with

respect to their peers (Nesi et al., 2018b). Social media users have an amplified awareness of who receives the most positive feedback on their posts (Nesi et al., 2018b). As a result of this awareness, users may try to engage in deceptive status-seeking behaviors to also elicit more positive feedback on their posts. This can lead to a high-reward, high-risk situation. The high reward comes in the form of receiving greater numbers of likes and comments (and the positive feelings that go along with them), but the risk includes a lower sense of peer belonging when they do not receive the online attention they wanted (Dumas et al., 2020).

The ability to maximize one's online presence and to carefully manage what peers see is likely to be particularly appealing to emerging adults who strive for popularity. As some emerging adults prioritize popularity among their peers (LaFontana & Cillessen, 2010), utilizing social media can be another way in which they garner visibility and status among peers. Previous research has shown that popularity goals are positively associated with social media engagement, especially for adolescent girls (Swirsky et al., 2021). Furthermore, emerging adults prefer the photo-based platforms of social media (i.e., Instagram, Snapchat and TikTok; Auxier & Anderson, 2021), and this may be because they recognize the potential benefits of being able to post images that will get peers' attention and bolster their popularity. Prior research has found that, especially in young women, "looking good" is an important predictor in achieving status (Lansu et al., 2022). Also, research has found that social media optimize an effective presentation of one's public image (Schwartz et al., 2019). Thus, this desire to "look good" to one's followers may lead to more like-seeking behaviors online, particularly deceptive ones.

In addition to the desire for popularity contributing to like-seeking behaviors and outcomes associated with social media use, other explanations could include social comparison and feedback seeking. As emerging adults figure out their identity (Arnett, 2006), they may use

social media to compare how they stand against their peers (Harmon, 2021). As their social circles continue to grow, emerging adults have a plethora of people they can compare themselves to online (Nesi et al., 2018a). Similarly, emerging adults may turn to social media to receive peer approval in the form of likes and comments (Harmon, 2021; Scott & Judge, 2009). Users may feel that the positive feedback they receive online equates to full peer acceptance. Prior research has found that when high amounts of likes and comments are not achieved on a post, this outcome can lead to lower feelings of peer-belonging (Dumas et al., 2020), highlighting how important positive feedback is online for emerging adults.

Emerging adults have grown up with social media constantly available at their fingertips, and their online behavior may differ from the behavior of the cohort of young adults with whom the original like-seeking scale was first created (Dumas et al., 2017). Popular social media apps have evolved considerably in the past several years, potentially leading to shifts in how users behave on social media platforms. For example, Facebook and Instagram rely on algorithms to determine which posts someone sees in their feed, whereas initially what a user saw was based purely on time (*Meta*). Because of this change, users may have to engage in different behaviors to attain higher visibility. Another important change has been the creation of Instagram stories (*Meta*). As a result of Instagram stories, users may choose to share their own post to their "stories," which can boost the traffic to a post. Users may be also more likely to use other attention-boosting strategies, such as tagging people with large amounts of followers in order to gather more attention from *their* followers. Overall, like-seeking behaviors have likely undergone significant shifts in recent years, with some behaviors previously considered deceptive becoming much more normative. As a result, the scale developed by Dumas and colleagues may need to be revised. Thus, the current studies also include a methodological

component, in that I explore how new, as-yet-untested online behaviors load onto this scale, while also confirming whether the current behaviors still load onto their original factors.

Current Studies

This dissertation has both methodological and empirical goals. The purpose of the following studies was to expand on and update the original like-seeking scale created by Dumas and colleagues (2017), to examine the association between popularity and the use of deceptive like-seeking behaviors in emerging adulthood, and to gain a deeper understanding of the motivations behind like-seeking behaviors and the emotional and behavioral factors related to those motivations. Previous research has documented that young adults engage in a plethora of behaviors on social media, such as lurking or scrolling, but also manipulative behaviors, such as buying likes or followers, or waiting to post photos until certain times to attain the most likes (Dumas et al., 2017; Nesi & Prinstein, 2018; Swirsky et al., 2021). Deceptive behaviors include behaviors such as buying likes or followers, or editing pictures to change the physical aspects of one's image (Dumas et al., 2017). However, as social media continue to evolve, these deceptive behaviors likely also change, which makes it important to keep updating this measure, as like-seeking behaviors are linked with worsening emotional outcomes in young adults (Dumas et al., 2020).

Importantly, researchers have started to uncover that it may not be social media behaviors themselves that lead directly to negative outcomes, but rather that the motivations behind using social media may play a more important role (Nesi & Prinstein, 2018). No previous research has measured how certain social motivations (i.e., social comparison and feedback seeking) impact the relationship between deceptive like-seeking behaviors and emotional and behavioral adjustment. In addition, very limited research has examined popularity-related goals in college

students, and no research has probed how popularity-related goals may be associated with deceptive behaviors online. By understanding the role of popularity-related goals in college students, information can be gained about how status-related concerns might moderate the relationship between like-seeking behaviors and emotional and behavioral adjustment, such as depression and substance use.

The following three studies address these research questions using correlational and experimental methods.

RQ1: Are there new like-seeking behaviors that need to be included in the original like-seeking scales?

RQ2: Is popularity associated with deceptive like-seeking behaviors on social media?

RQ3: What emotional adjustment issues and risky behaviors are associated with deceptive status-seeking behaviors online?

RQ4: Does the motivation behind using social media moderate the relationship between like-seeking behaviors and emotional adjustment?

Study 1

There are many types of behaviors social media users can engage in. Behaviors such as scrolling or lurking are more passive behaviors (Swirsky et al., 2021) and like-seeking behaviors are more active (Dumas et al., 2017). The active behaviors are of most interest for this study because they require the user to be actively engaged in what they are doing on social media and require a purpose for why they venture online (Frison & Eggermont, 2016). A measure created by Dumas and colleagues (2017) examined *like-seeking behaviors*, defined as behaviors that are used online to receive higher activity (i.e., likes, comments, shares) on social media posts, and identified two different types of like-seeking: *normative* and *deceptive*. Table 1 includes a list of

the behaviors from this scale. Normative like-seeking includes behaviors that are typical of social media use and are an inherent part of engaging with others online (i.e., posting a picture, using a hashtag, etc.). Deceptive like-seeking includes behaviors that manipulate posts in deceptive ways to receive even more likes (i.e., buying followers, taking down a photo and reposting it at a later time).

This measure is currently the primary tool used to study like-seeking behaviors. However, the limited literature has failed to account for other types of like-seeking behaviors, such as adding tags of other people to your photo for more attention, changing the caption of a picture, or sharing a post to the social media "stories." Some of these behaviors were not even available to social media users at the time of the original study (Dumas et al., 2017). In addition, based on exploratory discussions with undergraduate students, who represent the age demographic that is the focus of this study, there were other behaviors that were also missing -- specifically, those that relate to popularity.

In order to receive more visibility, social media users may add someone with high status to their posts. With high status comes high visibility (Cillessen & Rose, 2005), and tagging or posing with someone who has high visibility might lead the followers of their pages to come interact with your own page. Social media influencers are one example of this. Research has shown that influencers, or those who have a large following on their social media accounts, have such a large and consistent following that they receive large amounts of activity on their pages (Freberg et al., 2011). Thus, if users are able to take a photo with an influencer or tag them in a photo, the followers of both the influencer and the user could generate more activity on a post. The same association can be made with popular adolescents who could be characterized as "micro-influencers," which are local influencers who have a smaller following than major

influencers (Hatton, 2018). By tagging them or posting with them in a post, this could garner more activity (i.e., likes or comments) on one's post because followers may think they are in the same social circle, and as such, should be a behavior that is measured in the like-seeking scale.

Thus, Study 1 presents an attempt to update the Dumas and colleagues like-seeking measure, as well as to test whether the behaviors in the original scales create the same factor structure as in the original study. Table 1 lists the original and new items in the like-seeking scale. Some examples of new behaviors include *post multiple pictures instead of just one* and *share the post to your Instagram stories.* Behaviors like these were included to reflect new, commonplace behaviors that can happen on Instagram that were not available at the time of the original study (Dumas et al., 2017). Other new behaviors included *make sure to include a picture with a popular person from campus* and *tag a popular person in the photo.* In discussion with undergraduate research assistants, these were behaviors cited as likely to increase visibility on social media posts, and ultimately used in a way to receive more likes.

The following hypotheses were tested in Study 1.

H1a: All original items will load onto their original factors -- normative and deceptive (Dumas et al., 2017).

H1b: New indicators (*post multiple pictures instead of just one picture, create multiple captions and ask your friends which caption is best,* and *share the post to your Instagram stories*) will load onto the normative factor in the original like-seeking scale.

H1c: Indicators that relate to popularity (i.e., *tag a popular person in the photo, take a picture with a popular person*) will create an additional factor in the like-seeking measure.

Method

Two different data sets and analyses were used to update the Dumas and colleagues like-seeking scale. First, an exploratory factor analysis was conducted on the first set of data to explore how the new items loaded onto the original scale, and to explore whether previous items needed to be updated. Second, a confirmatory factor analysis was conducted on the second set of data to confirm the previous factor loadings and provide an updated measure with the new behaviors.

Participants

The first dataset included 161 undergraduates (16% male, 83% female, 1% other; M_{age} = 18.53, *SD* = .745) who were recruited from a large, southwestern, public university in the Fall of 2021. Students were recruited through the psychology department's online database that coordinates research participation for class credit. Participants were primarily first-semester, first-year students.

The second data set included 221 undergraduates (24% male, 74% female, 2% other; M_{age} = 18.97, *SD* = 1.86) who were recruited from the same university in the Spring of 2022. Students were recruited in the same fashion as the first set of participants. They were primarily second-semester, first-year students.

Procedure

As part of larger studies, participants completed online, self-report surveys that lasted approximately 30 minutes. Both studies followed similar formats. First, participants were asked basic demographic questions. Then, participants were asked whether they use social media sites. If they selected *yes*, they were asked to report which sites they used (*Facebook, Instagram, Snapchat, Twitter, Tik Tok, or Other),* and then asked to rate on a sliding scale how much time they spend each day on social media (0-24 hours). In the first data set, all participants reported

using social media and 95% reported using Instagram. In the second data set, 99% of participants reported using social media and 93% reported using Instagram.

Participants in Sample 1 were then asked to read the following scenario: *Imagine you are creating a new post for your Instagram page. You want to make this one of your top posts and receive a lot of attention from it (i.e., comments and likes). Which of the following behaviors would you do to help with your post?* Participants in Sample 2 were just asked *Which of the following behaviors would you do to help your post?* Both subsamples were then presented with the like-seeking scale (see Table 1) and asked to rate the likelihood that they would engage in these behaviors on a 5-point (EFA subsample) or 3-point (CFA subsample) Likert scale.

Results

Exploratory Factor Analysis

To examine how the new items loaded onto the previous like-seeking scale (Dumas et al., 2017), an exploratory factor analysis (EFA) was conducted in Mplus Editor. See Table 1 for full factor loadings. To assess how the indicators loaded onto the previous subscales and to explore whether new subscales needed to be included, a principle component solution and varimax rotation were used. To determine how many factors to use in the model, the eigenvalues were measured, and model fit was examined. A maximum of four factors were included in initial testing, in case the new factors loaded onto a separate factor. However, based on the output, the data could only converge at three factors, and using the Kaiser-Guttman rule, only factors that had loadings greater than one were kept. Finally, based on the model fit (see Table 2), it was determined that a three-factor model was best.

Results revealed three factors (see Table 1): *normative, deceptive, and manipulative-popularity behaviors*. Indicators were loaded onto their respective factors if they had a factor

loading of at least .3. The average factor loadings for each factor were as follows: *Normative* (*M*=.54), *Deceptive* (*M*=.75), and *Manipulative-Popular* (*M*=.73). These averages suggest strong factor loadings. There were small changes to the original scale factor loadings. *Like other people's pictures to receive likes in return (i.e., like for like)* and *use software to modify your physical appearance* had higher factor loadings for the normative factor than the deceptive factor. The second item (*use software*) had high factor loadings for both *normative* and *deceptive*, as can be seen in Table 1. Although these behaviors may seem deceptive, these findings provide initial support that social media have changed since the early creation of this scale, and that like-seeking behaviors have evolved. As hypothesized, the items relating to popularity loaded onto their own factor, which was labeled *manipulative-popular,* and the other additional items (*share the post to your Instagram stories, post multiple pictures instead of just one picture, create multiple captions and ask your friends which caption is best)* loaded onto the *normative* factor.

Confirmatory Factor Analysis

To confirm these findings, a confirmatory factor analysis was run on the second set of data. The first model loaded the item, *use software to modify your physical appearance,* on both deceptive and normative factors based on the findings of the EFA. As seen in Table 4, the initial model had good model fit $\chi^2/df = 91.74$, CFI =.96, TLI = .95, RMSEA = .05 [.03-.07]. However, the factor loading for *use software to modify your physical appearance* had a nonsignificant loading onto the deceptive factor (*p*=.100).

Thus, a second model was run where *use software to modify your physical appearance* was loaded only onto the *normative* factor. While the model fit did not necessarily improve, it still had good fit: $\chi^2/df = 94.38$, CFI =.96, TLI = .95, RMSEA = .05 [.03-.07]. The deviance test

between the two models was not significant ($\Delta\chi^2 = 2.64$, $\Delta df = 1$, *ns*) which suggests that loading this item onto both the *deceptive* and *normative* factor is not a better fit, and loading the item only on the *normative* factor is in fact the better fit for this scale. In addition, the standardized factor loadings were all significant (see Table 3). The average factor loadings for each factor were as follows: *Normative* (*M*=.60), *Deceptive* (*M*=.91), and *Manipulative-Popular* (*M*=.58). Finally, there were no reported modification indices greater than ten which suggests that the model fits as best as it could. Thus, the previous exploratory factor analysis was updated and confirmed by this factor analysis, and like-seeking factors used in the subsequent studies were based on these findings.

Discussion

To summarize, the like-seeking scale expanded from two factors to three, based on the results of the EFA and CFA, and in conjunction with previous literature. The three factors are *normative, deceptive,* and *manipulative-popular*. These three factors represent how social media have evolved since the initial creation of this scale. These three factors also suggest the lengths users will go to in order to increase their activity on a post. Users may tag high-profile people in order to gain more attention or choose to pay for more likes and followers to deceive their actual followers regarding how much activity their posts truly receive. This measure showcased a wide range of behaviors young adults will engage in to bolster more likes on a post; from *uploading a photo* to *buying likes,* and all the normal and deceptive behaviors in between.

The results of these factor analyses provide an updated understanding of like-seeking social media behaviors. Even though the scales had different measurements across data sets (3-point Likert scale vs. 5-point Likert scale), these results support that this new scale is stable and optimal with three factors. While most of the original items from the Dumas and colleagues

(2017) measure loaded onto their original factors, some of the original behaviors loaded onto different factors, specifically *like for like* and *use software to modify your physical appearance.* It may no longer be considered "deceptive" or "taboo" to participate in a *like for like* or use apps to *modify your physical appearance.* As these behaviors are so much more common than they were a few years ago, these results support the notion that social media behaviors constantly evolve (and quickly). What was once a place to share exciting photos online has now become a place that centers on posting the perfect photo instead to bolster social media presence for all users, not just ones deceptively trying to receive more positive activity.

Another possible explanation for this finding could be that what users consider *modifying* their physical appearance has shifted. Today, there are plenty of editing applications users can choose from, such as specific filters or applications to modify the physical appearance of one's body. By having multiple applications to choose from, these behaviors start to become more typical. These two factor analyses provided additional support that social media change and evolve, and that research methods may need to be revised regularly to remain up to date.

In addition, the second hypothesis was supported, in that the new items (e.g., *post multiple pictures instead of just one, share the post to your Instagram stories,* and *create multiple captions and ask your friends which caption is best*) loaded onto the original normative factor. Such behaviors are used consistently by young adults to achieve likes and should be included in this measure. Consulting with a friend for a caption or editing the order of your pictures are common practices used with most posts and are the baseline for how college students use social media.

Finally, there was support for the last hypothesis in that the two additional behaviors, *tag a popular person in the photo* and *make sure to include a picture with a popular person from*

campus, loaded onto their own factor. This was not surprising because they were specific to popularity but confirmed that participants would engage in these behaviors online in order to receive more likes. These behaviors are referred to as *popularity-manipulative*. They have the manipulative intent to garner more likes and comments on a post via increasing their visibility to high-profile peers. These results confirm the always-evolving world of social media and suggest that a common feature of participating in social media is the willingness or ability to use subtle (and not-so-subtle) deception in interacting with others.

Study 2

Study 1 provided evidence for how like-seeking behaviors evolve and change, and how manipulative behaviors used online may not be considered as deceptive as they once were. Study 2 investigated how these updated like-seeking factors are associated with popularity. Prior research with adolescents suggests that popularity may be uniquely tied to social media use. For example, one study found a positive relationship between self-presentation behaviors online (i.e., *deleted pictures or posts that didn't get enough likes or feedback*) and popularity goals (i.e., *it's important that people think I am popular;* Swirsky et al., 2021), which makes sense, as popularity is a highly valued aspect of peer relations during that developmental stage (Cillessen & Rose, 2011). Further, popular adolescents are some of the most frequent users of social media apps (Kleiser et al., 2022; Schwartz et al., 2019).

But what about college students? The research on emerging adults' goals related to, or prioritization of, popularity is limited. Recently, research examining popularity in emerging adulthood has found that popularity is still salient and relevant to emerging adults (Lansu et al., 2022, O'Mealey & Mayeux, 2021). Emerging adults have been shown to prioritize popularity over romantic relationships and following rules (LaFontana & Cillessen, 2010). While popularity

in emerging adulthood may have different behavioral features compared to popularity in adolescence, the key aspect of what it means – visibility and prestige among peers – is the same (O'Mealey & Mayeux, 2021).

Prior research has found that there are many motivations for why college students go online (i.e., social comparison, feedback seeking; Harmon, 2021). In addition, social media users who have popularity goals engage in higher self-presentation behaviors online in adolescence (Swirsky et al., 2021). These same goals are likely to be motivating factors for emerging adults, as this age group is reported to be online the most and find great value in being on social media (Auxier & Anderson, 2021), and can use a well-curated social media profile to increase their social capital by gaining followers and positive activity on their posts (Schwartz et al., 2019). However, as found by Swirsky and colleagues (2021), popularity may only be a motivating factor for certain kinds of like-seeking behaviors -- specifically, manipulative or deceptive behaviors.

In order to investigate whether the salience of popularity influences engagement in deceptive like-seeking behaviors, an experimental manipulation developed by Kleiser and Mayeux (2021) was included in the study. Participants were randomly assigned to either a *popularity prime condition* in which they were primed to think about the popular crowd on campus and write three adjectives to describe them, or a *neutral control condition* in which they were asked to think about their three favorite foods. After the manipulation, all participants read a hypothetical scenario in which they were asked to imagine that they were creating a new Instagram post. They were then asked to rate how likely they would be to engage in a series of like-seeking behaviors. The following hypothesis was tested:

H2: When participants are primed with popularity, they will give higher ratings of deceptive and manipulative like-seeking behaviors in a hypothetical social media scenario than those in the control condition.

Method

Participants

327 undergraduates (17% male, 82%% female, 1% other; M_{age}=18.66, *SD*=1.19) were recruited from a large, southwestern, public university in the Fall of 2021. Students were recruited through the psychology department's online database that coordinates research participation for class credit. Participants were primarily first-semester, first-year students.

Procedure

Participants completed an online, self-report survey that lasted approximately 30 minutes. First, participants were asked basic demographic questions. Then, participants were asked whether they use social media sites. If they selected *yes*, they were asked to report which sites they used (*Facebook, Instagram, Snapchat, Twitter, Tik Tok, or Other),* and then asked to rate on a sliding scale how much time they spent each day on social media (0-24 hours).

After completing these initial measures, participants were randomly assigned to either a popularity prime condition or neutral control condition. Using the same prime as Kleiser and Mayeux (2021), half of the participants were presented with the following prompt: *Think about the students who are popular on campus. In the space below, type three adjectives describing the popular students.*

The other half of the participants received the control prompt: *Take a minute to think about your favorite foods. In the space below, write down your three favorite foods.* This prompt was used to elicit a more neutral response that has no relation to popularity.

Next, all participants were asked to read the following hypothetical scenario: *Imagine you are creating a new post for your Instagram page. You want to make this one of your top posts and receive a lot of attention from it (i.e., comments and likes). Which of the following behaviors would you do to help with your post?* Then, using a Likert scale of 1 (*Extremely unlikely)* to 5 (*Extremely Likely)* participants were asked to rate how likely they would be to engage in like-seeking behaviors. See Table 1 for a full list of items. Based on the results of the CFA model in Study 1 (see Table 3), these items were reduced to three factors, *normative* (e.g., use a filter)*, deceptive* (e.g., purchase followers)*,* and *popularity-manipulative* (e.g., tag a popular person in the photo)*.*

Results

Preliminary analyses were conducted in SPSS v. 25. Table 5 shows the number of participants who indicated using social media, average time spent on social media, and the breakdown of how many participants used each specific app. All 327 participants reported using some form of social media, and the mean number of social media apps they used was between three and four (*M* = 3.80, *SD* = 1.06*)*. The three most commonly used social media sites were Snapchat, Instagram, and TikTok, and the average number of hours spent on social media per day was 5.32 (SD = *2.56).*

A one-way MANOVA tested the hypothesis that participants in the popularity condition would report higher levels of deceptive like-seeking. Due to the high collinearity between the three like-seeking factors, a MANOVA was used to increase power to detect smaller effects. There were three dependent variables (*normative, deceptive,* and *popularity* like-seeking behaviors*)*. The independent variable was the popularity prime versus control condition. There was a statistically significant effect of condition on participants' ratings of like-seeking

behaviors, F (3, 323) = 2.58, p = .05; Wilks' Λ = 0.98, partial η^2 = .02. The effect of condition was only significant for the *manipulative-popular* subscale (F (1, 325) = 7.14; p < .01; partial η^2 = .02; *M*prime = 1.91, *SD* = 1.13; *M*control = 1.60, *SD* =.92). There were no significant effects of condition on ratings of *normative* behaviors (*Mprime* =2.97, *SD*=.85; *M*control = 2.94, *SD* =.88) or *deceptive* behaviors (*Mprime* = 1.13, *SD* =.47; *M*control = 1.12, *SD* =.42). These findings provide partial support for the hypothesis and suggest that when popularity is salient to young adults, they are more likely to use manipulative behaviors on social media.

Discussion

Overall, these results provided new insight into the relationship between popularity and like-seeking behaviors. Partial support was found for the hypothesis that like-seeking behavior would be more prevalent among students for whom popularity was salient. When asked to think about popular students on campus, participants were more likely to include popular peers in their photos or in the tags of their photos to elicit more activity on a post. For young adults who strive to be popular, trying to take a picture with a high-status person or tag a high-status person in a photo may be a useful way to achieve even more attention for a post. Knowing the presence a popular person carries and the visibility that comes with having high status, these are other manipulative ways to receive more likes on a photo. By posting with a popular person or tagging a popular person, users may feel a sense of pride that they appear to be in the same social circle as these popular peers. Researchers have found this to be true in adolescence, such that spending time with or being seen with the popular crowd has the benefit of promoting high status for youth who were not initially popular (Dijkstra et al., 2010). Study 2's results support the notion that emerging adults are aware that basking in the reflected glory of popular peers might increase

their online visibility. Popular peers provide a sense of prestige that users who value popularity may want to associate with their own posts.

This study further supported previous research indicating that emerging adults are still influenced by popularity (Lansu et al., 2022), and is the first study to show a relationship between popularity and social media behavior in emerging adults. These results support the idea that popularity motivates specific manipulative behaviors online and provides a foundation for understanding how social media motivation influences emerging adults' behavior online. The final study expands on these findings by examining social media motivations, additional like-seeking behaviors, and potential adjustment indicators that are associated with like-seeking behaviors.

Study 3

Study 1 provided a foundation for understanding what types of like-seeking behaviors college students use. Emerging adults' view of social media behavior evolves, and behaviors that were once considered deceptive may now be considered normative. Study 2 provided support for the hypothesis that college students' like-seeking behaviors are influenced by popularity. A next step is to expand the study of social media behavior in two directions: additional motivations for using social media (specifically feedback-seeking and social comparison), and behavioral and emotional adjustment factors that are associated with social media use, such as depression, body image satisfaction, and risk-taking. Study 3 explores these factors.

There are many motivations for why users choose to go online. Some motivations may be to communicate with a romantic partner, seek advice, or to explore what is on their feed (Harmon, 2021). Two motivations that are of interest when examining like-seeking behaviors are feedback seeking and social comparison because they are the most relevant subscales to posting

on social media (Nesi & Prinstein, 2015). The Motivations for Electronic Interaction Scale (MEIS) was developed to measure users' goals and motives for engaging in all forms of social media behaviors (Nesi & Prinstein, 2015). Social comparison includes such items as "*I post to compare my life with other people's lives,*" while feedback-seeking behaviors include items such as "*I post to see what others think about me."* As a result of these motivations, social media users become more attuned to how they are perceived online than if they were logging on just to explore (Nesi & Prinstein, 2015). These motivations can then influence how users choose to behave online.

Social Comparison Motives: Associations with Like-Seeking and Adjustment

Social comparison has been linked with depressive symptoms, particularly in adolescence (Nesi & Prinstein, 2015). If they notice that their peers receive more positive activity (i.e., likes and comments) on their posts compared to their own posts, the comparison can lead to lower self-esteem and depressive symptoms (Nesi et al., 2017). In particular, adolescents who had higher social comparison motivations had higher reports of depressive symptoms (Nesi & Prinstein, 2015). Social comparison has been found to positively predict depressive symptoms in college students, especially when they feel they are "missing out" (Burnell et al., 2019). As users turn to social media as a way to check on what their peers are doing, they run the risk of seeing groups of their peers hanging out without them, which can lead to feelings of loneliness and a lower sense of peer group belonging.

In addition to depressive symptoms, social comparison is also linked with worsening body image satisfaction (Jones, 2001). Users have unlimited access to information about beauty standards, and are bombarded with photographs and posts that highlight unattainable standards of appearance. Social media apps allow users to carefully edit and perfect an image before

sharing, meaning that users are often comparing themselves to an inaccurate or unattainable image (Chua & Chang, 2016). Thus, social media users have many unrealistic sources to which they can compare themselves (Perloff, 2014), which can lead to a worsening body image (Cohen et al., 2018). Especially in women, just a brief exposure to a beauty-focused image can lead to a decrease in body satisfaction (Harper & Tiggemann, 2008). Another study found that social comparison on social media led to lower reports of body satisfaction than traditional media (Jarman et al., 2021).

Social comparison appears to have strong associations with like-seeking behaviors (Dumas et al., 2020; Nesi & Prinstein, 2015), although no study has directly tested this association. If college students want to appear more socially desirable by their peers, they may engage in more deceptive behaviors online to achieve that upward social comparison.

Feedback Seeking: Associations with Like-Seeking and Adjustment

Feedback seeking also has strong associations with depressive symptoms in adolescence (Nesi & Prinstein, 2015). As users turn to social media in hopes of receiving validation, worsening emotional adjustment may be inevitable. In a time where peer acceptance is still extremely important in emerging adulthood (Scott & Judge, 2009), users may log on with the hopes to receive "virtual" peer acceptance. Logging on just to receive positive feedback is also associated with depressive symptoms in adolescence (Dumas et al., 2017). Thus, it would be expected that this relationship would hold in emerging adulthood.

While never directly tested, feedback seeking appears to have strong associations with risky behaviors as well. One study found that when individuals viewed a photo of risky behavior (i.e., underage drinking) that had many likes on it, there was greater activity in parts of the brain related to imitation, attention and reward processing compared to seeing a risky behavior photo

with few likes (Sherman et al., 2016). In addition, their cognitive-control network activity decreased when viewing a risky behavior photo with many likes on it. Thus, by wanting to receive virtual peer endorsement, also known as feedback seeking, emerging adults may be more drawn to risky behaviors online as a way to gather more feedback on their posts. If they see their peers have been "virtually endorsed" by their other peers, they may feel the need to imitate these posts if receiving positive feedback is important to them.

Like social comparison, feedback seeking appears to have strong associations with like-seeking behaviors (Dumas et al., 2020). As the point of feedback seeking is to encourage more activity on a post (i.e., likes, comments; Harmon, 2021), users will have to engage in some form of like-seeking behavior in order to achieve this goal. Thus, while not directly tested previously, feedback seeking and like-seeking behaviors are likely to have a strong relationship.

Popularity Goals: Associations with Like-Seeking and Adjustment

In addition to these two motivations, another motivation needs to be considered based on the findings from Study 2 – popularity. Popularity has been found to be a goal for some individuals in emerging adulthood (LaFontana & Cillessen, 2010), and has been shown to be a motivation for like-seeking behaviors in social media (Study 2). If emerging adults hope to achieve the prestige associated with popularity (Lansu et al., 2022), popularity goals may be a contributor to why they go online. While Study 2 was one of the first studies to demonstrate popularity as a motivation for engagement in like-seeking behaviors, particularly manipulative behaviors, it has also been brought up in previous research as a potential motivation in engagement in deceptive like-seeking behaviors (Dumas et al., 2020). Dumas and colleagues (2020) found that deceptive motives online were not related to peer belonging as they had

hypothesized, but suggested emerging adults may be more focused on gaining status (such as popularity) rather than just peer belonging when engaging in like-seeking behaviors.

Similarly to social comparison and feedback seeking, popularity and popularity goals are also associated with depressive symptoms. In adolescence, popularity was found to moderate the relationship between social media behaviors and depressive symptoms, such that adolescents' social media behaviors were positively associated with depressive symptoms for highly popular individuals, but were not associated with depression for low-status individuals (Nesi & Prinstein, 2015). Popularity also has strong associations with engagement in risky behaviors such as substance use. Previous research has documented that risky behaviors are associated with popularity in adolescents, specifically those in their later years of high school (e.g., Mayeux et al., 2008). Previous research has also shown that young adults make poor decisions about illegal or rule-breaking behavior (e.g., sneaking beer into a college dorm room) when they believe the behavior will enhance their popularity (LaFontana & Cillessen, 2010). Surrounded by unfamiliar peers and wanting to showcase their dominance or coolness, first-year students with a goal to become popular may choose to engage in more risky behaviors. Partaking in risky behaviors has been linked with prestige (Brown et al., 2009), which is also a common association with popularity in emerging adulthood (Lansu et al., 2022). It would be expected that this relationship between popularity goals and risky behaviors increases in an online setting. Prior research has found that individuals who view others' engagement in risky behaviors and receive "likes" for their behaviors, this leads to a neural imbalance between reward sensitivity and immature cognitive control circuitry (Sherman et al., 2016), such that the part of their brain associated with imitation is stimulated during this viewing.

Like-Seeking and Adjustment

Thus, the literature suggests that motivation is an important variable to consider when examining worsening emotional and behavioral adjustment factors as a result of social media use. Further, certain social media behaviors, specifically like-seeking behaviors, have also been associated with worsening mental health outcomes. Previous research has shown that when young adults engage specifically in deceptive behaviors on social media, these behaviors lead to lower peer belonging and overall lower well-being (Dumas et al., 2020). As deceptive and manipulative behaviors are seen as a form of "virtual lying," users may feel disingenuous and ultimately less connected with one another (Dumas et al., 2020). On the other hand, normative like-seeking behaviors are linked with stronger feelings of belonging compared to deceptive behaviors (Dumas et al., 2017).

In addition to depressive symptoms, like-seeking has been linked to poor body image satisfaction in high school and college students (Verrastro et al., 2020). If users choose to edit their photo before uploading it to their feed, they report having lower body image satisfaction. If users endorse the "Instagram beauty standard," there is a pressure to conform to this beauty standard, and ultimately comes at the risk of a negative body image (Brown & Tiggemann, 2016).

Lastly, prior research has also linked like-seeking behaviors with risky behaviors. Ahern and colleagues (2015) found that when a "risky online challenge" goes viral, emerging adults may attempt to do these risky behaviors in order to gain attention through the form of likes and comments. Lastly, another study found users' deceptive social media use was positively associated with risky behaviors (Shabahang et al., 2022).

Like-Seeking, Motivations, and Adjustment

Like-seeking behaviors have strong associations with social comparison and feedback seeking (Dumas et al., 2020; Harmon, 2021). In addition, research has found support for a direct association between like-seeking behaviors and popularity goals (Dumas et al., 2017; Swirsky et al., 2021). Knowing that social media motivations (i.e., feedback seeking, social comparison, and popularity goals) and like-seeking behaviors have a strong relationship together and each have strong relationships with emotional and behavioral adjustment variables (i.e., depression, body image, and risky behaviors), the next step is to understand how the three variables (i.e., motivations, like-seeking behaviors, and emotional adjustment) are intercorrelated.

As mentioned earlier, many studies have linked social media use to depressive symptoms (Nesi et al., 2015; Nesi et al., 2017; Twenge et al., 2018), body image satisfaction (Cohen et al., 2018), and risky behaviors (Shabahang et al., 2022; Sherman et al., 2016). Recently, research has begun to uncover the individual differences that moderate these associations. For instance, users who have more negative affect will experience depressive symptoms in the wake of feeling rejected or left out (Nesi et al., 2021). On the other hand, users who have a positive emotional experience online are also at risk for greater depressive symptoms because they are relying on social media for these positive peer experiences and missing out on the in-person interactions (Nesi et al., 2021). Emerging adults who have already suffered from peer victimization in the past are more likely to report more rejected feelings and greater negative internalizing feelings after feeling rejected online (Dumas et al., 2020).

In addition, some studies have started to examine how motivation moderates the relationship between social media use and certain outcomes. For example, in adolescence, popularity status moderated the relationship between active social media behaviors (i.e., posting

photos) and depressive symptoms. Popular adolescents who engaged in these behaviors were more at risk for depressive symptoms than non-popular adolescents who engaged in these online behaviors (Nesi & Prinstein, 2015). Research has also linked individuals with high gratification or feedback seeking motivation and who actively participate online with higher endorsement of risky behaviors than those who have low gratification or feedback seeking motives (Shabahang et al., 2022). These individual differences and moderation effects provide some evidence that just "being on" social media does not always relate to worsening mental health outcomes, but the motivation may strengthen the relationship between like-seeking behaviors and resulting outcomes. Specifically, engagement in deceptive behaviors may only have a relationship with emotional adjustment (i.e., risky behaviors, depression) for emerging adults if they have stronger motivation for participating in these behaviors, compared to adults who have low motivation for participation in deceptive behaviors.

Hypotheses

The purpose of Study 3 is to examine how motivations for social media use, risky behaviors, and emotional adjustment are related to engagement in like-seeking behaviors online.

H3a. Deceptive and manipulative-popular like-seeking behaviors will be positively correlated with popularity goals, feedback-seeking and social comparison motivations, risk-taking behaviors, and depressive symptoms. Deceptive and manipulative-popular like-seeking behaviors will be negatively correlated with body image satisfaction.

Deceptive like-seeking behaviors have been documented to have strong associations with popularity (Dumas et al., 2017) and depressive symptoms (Dumas et al., 2020). While not explicitly documented before, previous research suggests that these behaviors have strong implications for association with the other variables as well. If the point of logging onto social

media sites is to receive attention (i.e., in the form of more activity on a post), deceptive or manipulative like-seeking behaviors may be utilized (Dumas et al., 2020). If users go online to compare themselves to their peers, again, like-seeking behaviors may be utilized (Nesi & Prinstein, 2015). Users who are exposed to many multiple instances of risky behaviors online (i.e., "super-peer" theory; Strasburger, 2007) and see positive feedback on the posts (i.e., greater likes for risky behavior photos; Sherman et al., 2016) may choose to engage in other deceptive behaviors online to receive more likes. As users view numerous idealized body images online, they may use more deceptive like-seeking behaviors online to bolster their own body image satisfaction (Cohen et al., 2017; Verrastro et al., 2020).

H3b. Feedback seeking will be positively related to depressive symptoms and risky behaviors.

In adolescence, feedback seeking was associated with depression (Nesi & Prinstein, 2015). It is expected that this relationship will hold in young adults, too, because they are at an age where peer acceptance is important (Scott & Judge, 2009), and depressive symptoms are high (Faravelli et al., 2013). Feedback seeking appears to have strong ties to risky behaviors, as prior research has found that users who view risky behavior photos with many likes on social media have greater activity in their neural region that is associated with imitation (Sherman et al., 2016), which suggests a positive relationship exists between feedback seeking and risky behaviors.

H3c. Social comparison motivation will be positively related to depressive symptoms and negatively related to body image satisfaction.

Social comparison has been linked to depressive symptoms in adolescence (Nesi & Prinstein, 2015). Social comparison online has also been linked with depressive symptoms, especially in women (Fox & Vendemia, 2016). Social comparison online has strong negative

associations with body image satisfaction in adolescence and young adulthood (Fox & Vendemia, 2016; Jarman et al., 2021).

H3d. Popularity goals will be positively related to risk-taking behaviors and depressive symptoms.

Research has found that popularity is positively associated with risk-taking behaviors in adolescence (Mayeux et al., 2008). This is expected to hold true in young adults because there is a certain prestige that is associated with risk-taking behaviors (i.e., underage drinking; Brown et al., 2009) and prestige is a defining feature of popularity (Lansu et al., 2022). Popularity has been related to depressive symptoms in adolescence (Nesi & Prinstein, 2015), and this is expected to hold true in young adults when depressive symptoms are high (Farvaelli et al., 2013) and popularity is still relevant (Lansu et al., 2022).

H3e. The relationship between like-seeking behaviors and depression will be moderated by popularity goals, social comparison and feedback seeking. A positive association between like-seeking behaviors and depression will emerge for participants who have high social media motivations (i.e., popularity goals, social comparison and feedback seeking), but no association will exist between like-seeking and depression for participants low in social media motivations.

As popularity and depression are expected to be associated with each other (*H3d*) and depression and like-seeking are expected to be related to each other (*H3a*), the expectation is that strong popularity goals will strengthen this second relationship. The goal to achieve status and prestige in an online setting (i.e., popularity goals; Lansu et al., 2022), will encourage stronger participation in like-seeking behaviors (Dumas et al., 2017), and ultimately be associated with higher reports of depressive symptoms. This hypothesis stems from the expectation that popularity goals create inherent pressure for users to elevate their own visibility or prestige via

effective posts. If their posts are not as effective as they would like, emotional distress may result. On the other hand, if users have low popularity goals, their participation in like-seeking behaviors should not be associated with depressive symptoms because there is no pressure associated with their behaviors online. Thus, if their posts are not as effective, the emotional distress will not be as high because there is no added pressure to their behaviors online.

Feedback seeking has been linked with depressive symptoms in adolescence (Nesi & Prinstein, 2015) and is expected to be linked in young adulthood (*H3a*). In addition, like-seeking behaviors have been linked with depressive symptoms (Dumas et al., 2020). If young adults' motivation for engagement online is to receive more positive feedback (i.e., receive more likes and comments), then this may encourage a higher participation in like-seeking behaviors and be associated with higher reports of depressive symptoms. This relationship is expected because feedback seeking creates a need for online validation through likes and comments on effective posts. If those posts do not gain the attention they hoped for, higher reports of depressive symptoms may ensue. If users have low feedback seeking goals, their participation in like-seeking behaviors will not be associated with depressive symptoms. Since there is no need to receive online validation, users will not be as distressed if their posts do not receive high activity.

Social comparison has been linked with depressive symptoms in adolescence (Nesi & Prinstein, 2015) and is expected to be linked in young adulthood (*H3a;* Fox & Vendemia, 2016). Like-seeking behaviors have been linked with depressive symptoms in young adulthood (Dumas et al., 2020). The motivation to socially compare (Harmon, 2021) may encourage a stronger participation of like-seeking behaviors (Dumas et al., 2017) and ultimately be associated with higher reports of depressive symptoms. The expectation is that social comparison online allows users a *quantifiable* number to compare to, and when that number is not achieved by their posts,

this may cause lower well-being. If users have low social comparison motives, their participation in like-seeking behaviors will not be associated with depressive symptoms. Users with low social comparison motives will be less attuned to the *quantifiable* number associated with posts, and may not feel as distressed when their posts are not as effective.

H3f. The relationship between like-seeking behaviors and risk-taking behaviors will be moderated by popularity goals and feedback seeking. A positive association between like-seeking behaviors and risky taking behaviors will emerge for participants high in popularity goals and feedback seeking, but no association will exist between like-seeking and risk-taking behaviors for participants low in popularity goals and feedback seeking.

As popularity and risky behaviors are expected to be related (*H3c;* Mayeux et al., 2008) and risky-behaviors and like-seeking are expected to also be related (*H3a*), the expectation is that popularity goals will strengthen the latter relationship. Individuals with high popularity goals may engage in more like-seeking behaviors, and ultimately have higher reports of risky behaviors. This hypothesis stems from the expectation that the pressure associated with popularity may encourage young adults to participate in more risky behaviors as a way to receive more positive activity on their posts. If individuals have low popularity goals, their participation in like-seeking behaviors will have no association with risky behaviors because there is no pressure associated with their behaviors online. Thus, users will not feel they have to engage in risky behaviors to make their posts more effective because there is no added pressure of also trying to become popular.

As feedback seeking and risky behaviors are expected to be related (*H3b*) and risky behaviors and like-seeking are expected to be related too (*H3a)*, feedback seeking is expected to strengthen the latter relationships. Individuals with high feedback seeking motivation will engage

in more like-seeking behaviors and report more risky behaviors. This relationship is expected because feedback seeking creates a need for online validation through likes and comments on effective posts. Thus, users may feel like one way to receive more activity is through participation in risky behaviors as a way to share a more effective post than just a normal photo. If individuals have low feedback seeking motivation, their participation in like-seeking behaviors will have no association with risky behaviors. Since users are not motivated by online validation, users will not feel a need to participate in risky behaviors as a way to receive more activity on their posts.

H3g. The relationship between like status seeking behaviors and body image satisfaction will be moderated by social comparison. A negative association between like-seeking behavior and body image satisfaction will emerge for participants high in social comparison, but no association will exist between like-seeking and body image satisfaction for participants low in social comparison.

Social comparison online has been strongly linked with body image satisfaction (Fox & Vendemia, 2016). In addition, like-seeking behaviors have associations with body image satisfaction (Tiggemann et al., 2018). Individuals with high social comparison motives will engage in more like-seeking behaviors, and ultimately have lower reports of body image satisfaction. The expectation is that social comparison online allows users a *quantifiable* number to compare to, and when that number is not achieved by their posts, users may feel that their "image" is the problem and may lead to a lower body image. If individuals have low social comparison motive, their participation in like-seeking behaviors will have no association with body image satisfaction. Young adults with low social comparison motives will be less attuned to the *quantifiable* number associated with posts, and may not feel as distressed about their body image satisfaction when their posts are not as effective.

Method

Participants

253 undergraduate students (22% male, 71% female, 3% other; M_{age} = 19.17. *SD* = 2.98) were recruited from the Department of Psychology participant pool at a large public university. 38 participants were excluded either due to missing data, wrong age demographic (i.e., below 18 or above 25), or because they completed the survey in under five minutes or more than 24 hours. Thus, 215 participants were included in the analyses (24% male, 74% female, 2% other; M_{age} = 18.97, *SD* = 1.86). Participants were given class credit or class extra credit for participants in the study. Most participants were second-semester, first-year students (75%). Participants completed a thirty minute, online, self-report survey that measured social media use, like-seeking behaviors, emotional outcomes, popularity-related goals, and self-report peer status.

Measures

Social Media Use. Participants were asked whether they use social media sites. If *yes* was selected, participants were asked to report which sites they used (*Facebook, Instagram, Snapchat, Twitter, Tik Tok, or Other),* and then asked to indicate on a sliding scale how much time they spent each day on social media (0-24 hours).

Like-Seeking Behaviors. Using the updated like-seeking scale developed in Study 1 (see Table 3), participants were asked to rate on a 3-point Likert scale (never, once or twice, multiple times) how often they engaged in the three types of like-seeking behaviors when they use Instagram: *normative* (nine items, α = .83)*, deceptive* (two items, α = .90)*,* and *manipulative-popular* (2 items, α = .43).

Motivations for Social Media. Based on the *Motivations for Electronic Interaction Scale (MEIS)* scale developed by Nesi and Prinstein (2015), which was further validated by

Harmon and colleagues (2021) for young adults, participants' feedback seeking and social comparison motivations for using social media were measured. An example of a feedback-seeking behavior is *I use social media to get feedback from others' on the things I send/post,* and an example of a social comparison item is *I use social media to compare my life with other peoples' lives.* Each scale had five items and good internal reliability (*Feedback seeking,* $\alpha = .92$; *Social Comparison,* $\alpha = .89$). Using the same methodology as Harmon (2021), social comparison and feedback-seeking scores were each averaged across their five items.

Popularity Goals. Participants were asked to rate their endorsement of popularity-related goals and behaviors using a 5-point Likert scale (never true to always true) on the popularity goal scale developed by Dawes and Xie (2014). This scale had five items and strong reliability ($\alpha = .76$). Some example items include *I try to hang out with people just because they are popular* and *I change the way I dress in order to be more popular.* Participants were given one score based on the average of all five ratings.

Risky Behaviors. Participants were asked about the following risk-taking behaviors, which were taken from the *Youth Behavior Survey* (Brener et al., 2004): *cigarette smoking, alcohol use, vaping,* and *drug use.* Participants were asked how many days they had engaged in those behaviors. If they chose any number of days above zero, they were asked follow-up questions about how old they were when they first engaged in those behaviors, and how many times they had engaged in those behaviors in the previous thirty days. An additional question was added to measure the occurrence of binge drinking (five or more drinks in a row) in the previous thirty days. Questions regarding frequency of risky behaviors had seven scale points, and questions regarding recency of participating in the behavior had 5 scale points. To be consistent, questions with 7-point scales were re-coded and collapsed into 5-point scales. Then,

all questions were averaged together to create one total score for all risk-taking behaviors that was used in the analyses. Reliability for the full scale was good (α = .83).

Emotional Adjustment. To measure depressive symptoms, participants completed the *Beck Depression Inventory* (Beck et al., 1996). Participants were shown twenty sets of four statements, reflecting increasing levels of severity of a given depression symptom (e.g., feeling sad). Participants were asked to indicate which of the four statements reflected how they most accurately felt in the current moment. The original scale includes 21 questions, but the question regarding suicidal ideation was removed. To calculate the total score, each statement had a point value that corresponded to its severity, and the points for each statement were summed across the 20 sets. Participants were given a depression score ranging from 1-60. Reliability was very good for this scale (α = .90).

Finally, body image satisfaction was measured using a four-item scale developed by Prichard and Tiggerman (2012). Participants were asked to rate on a sliding scale of 1-100 how well the following descriptions applied to them: *Satisfied with your body size and shape, confident, physically attractive,* and *fat. Fat* was reverse coded so as to reflect body satisfaction. Other moods were included as filler items to disguise the purpose of the body dissatisfaction measure. A total score was created by averaging all items into one score (after reverse coding *fat*). Reliability for the four items was good (α = .77).

Results

All analyses were conducted in SPSS v. 25. Table 5 shows the number of participants who indicated using social media, average time spent on social media, and the breakdown of how many participants used each specific app. 219 out of 221 participants reported using some form of social media, and the mean number of social media apps they used was between three

and four (M = 3.89, SD = 1.10*)*. The three most commonly used social media sites were Instagram, Snapchat, and TikTok, and the average number of hours spent on social media per day was 4.86 (SD = 2.77*).* The correlations, means, and standard deviations of all variables can be found in Table 6.

H3a. Deceptive and manipulative-popular like-seeking behaviors will be positively correlated with popularity goals, feedback-seeking and social comparison motivations, risk-taking behaviors, and depressive symptoms. Deceptive and manipulative-popular like-seeking behaviors will be negatively correlated with body image satisfaction.

The first hypothesis had partial support. Deceptive like-seeking was positively correlated with popularity goals (r = .42, p < .01), social comparison (r = .22, p < .05), and feedback seeking (r = .24, p < .01*)*. Manipulative-popularity like-seeking was positively correlated with popularity goals (r = .31, p < .01*),* social comparison (r = .23, p < .01) and feedback seeking (r = .34, p < .01*).* There were no significant associations for deceptive or manipulative-popular like-seeking with depression, body image, and risky behaviors.

H3b. Feedback seeking will be positively related to depressive symptoms and risky behaviors.

The second hypothesis had full support. Feedback seeking was positively related to depression (r =.16, p < .05) and risky behaviors (r = .21, p < .01*).*

H3c. Social comparison motivation will be positively related to depressive symptoms and negatively related to body image satisfaction.

There was support for the third hypothesis. Social comparison was positively related to depressive symptoms (r = .18, p < .05) and negatively related to body image satisfaction (r = -.19, p < .01).

H3d. Popularity goals will be positively related to risk-taking behaviors and depressive symptoms.

There was partial support for the fourth hypothesis. Popularity goals were significantly related to risk-taking behaviors (r = .16, p < .05), but not depressive symptoms (r = -.01, *ns*).

Regression & Moderation Models (Hypotheses e-g)

In order to analyze how specific motivations were related to emotional and behavioral adjustment, hierarchical linear regressions were used to test the remaining hypotheses. To maximize power, each motivation was tested on its own to predict the different adjustment indices, and significance testing was set at p <.01 to reduce the possibility of a Type 1 error. Since multiple analyses were run on a small data set, these were conservative approaches taken to ensure more reliable findings. Based on the hypotheses, there were six regression analyses total. All three motivations explored the associations between *depression.* In addition, *popularity goals and feedback seeking* examined the relationship between risky behaviors, and *social comparison* measured the association between *body image satisfaction* (see Tables 7-9). Across all models, gender, the two other motivations (e.g., popularity goals and social comparison for the analysis testing feedback seeking), and the significantly correlated adjustment variables were entered in Step 1 as control variables. Step 2 included the motivation of interest, and the three different like-seeking factors. Step 3 included the interaction terms of the corresponding motivation with each of the like-seeking factors.

The first set of hierarchical regressions (Table 7) tested whether social comparison motivation was associated with *depression* and *body image satisfaction*. In addition, these two regressions tested whether social comparison moderated the relationships between the three types of like-seeking and emotional adjustment. 42% of the variance in depression was explained

by the model, and 32% of the variance in body image satisfaction was explained by the model. Social comparison was negatively related to body image satisfaction (β = -.22, p = .01). However, social comparison was not associated with depression. There was also no support for a moderating effect of social comparison in the relation between like-seeking and adjustment.

The second set of hierarchical regressions (Table 8) examined whether feedback seeking motivation was related to *depression* and *risky behaviors*, and if feedback seeking had a moderating effect on the association between like-seeking factors and these two dependent variables. 32% of the variance in depression was explained by the model, and 17% of the variance in risky behaviors was explained by the model. Contrary to the hypotheses (*H3e* and *H3f)*, feedback seeking had no relationship to depression or risk-taking behaviors and had no moderating effect.

Finally, the third set of hierarchical regressions (Table 9) examined whether popularity goals related to *depression* and *risky behaviors*, and if popularity goals had a moderating effect on the association between the like-seeking factors and these two variables. 34% of the variance in depression was explained by model, and 19% of the variance in risky behaviors was explained by the model. Popularity goals moderated the relationship between like-seeking behaviors and depression. Significant interactions were probed by creating prototypical plots illustrating the association of popularity goals and depression at high (+1 *SD*) and low (-1 *SD*) levels of like-seeking behaviors. Popularity goals moderated the relationship between manipulative-popular like-seeking behaviors and depression (β = .28, p = .01) as hypothesized. Prototypical plots (see Figure 1) revealed a significant positive association between depression and manipulative-popular like-seeking behaviors for emerging adults with low popularity goals (β = 4.91, t= 6.27, p = .01) and high popularity goals (β = 10.82, t = 9.47, p = .01); the slope of the regression line

for high popularity goals was significantly steeper than for low popularity goals. In addition, popularity goals moderated the relationship between deceptive like-seeking behaviors and depression (β = -.41, p = .01). However, the nature of the moderating relationship was different than expected. Prototypical plots (see Figure 2) revealed a negative association between depression and deceptive like-seeking behaviors for emerging adults with low popularity goals (β = -2.63, t = -3.57, p = .001) and high popularity goals (β = -12.02, t = -10.63, p = .001); the slope of the regression line for high popularity goals was significantly steeper than for low popularity goals.

Discussion

Overall, Study 3 results provided support for how important motivations are in understanding social media use.

Like-seeking factors associations with motivations and outcomes.

There was partial support for the first hypothesis, examining how the different like-seeking factors related to motivations (i.e., *popularity, social comparison and feedback seeking*) and different adjustment variables (i.e., *depression, risky behaviors*, and *body image*). All the different factors of like-seeking had significant associations with each motivation, but there were no significant relationships between like-seeking and the adjustment factors. These relationships support the notion that motivation for engagement online is significantly related to engagement in all forms of like-seeking behaviors. In addition, these results provide further support of Study 2's finding that popularity is related to like-seeking behaviors in young adults. One explanation for the lack of relationship between the deceptive and manipulative like-seeking factors and adjustment could be that since these behaviors were considered rare by participants (i.e., lower reports of participating in these behaviors; see Table 6), the relationship with emotional

adjustment did not have a relationship with them because the behaviors were infrequently used. Previous research has found that when deceptive behaviors were used more frequently, the relationship with depressive symptoms was strengthened (Dumas et al., 2017). Thus, these results suggest that low reporting of these behaviors may be impacting the predicted relationship with emotional adjustment.

In the hierarchical regressions, normative like-seeking behaviors had a positive association with risky behaviors. This finding adds to the previous literature about social media acting like a "super-peer" (Strasburger, 2007). As emerging adults engage in more like-seeking, they may find that posts or photographs depicting risky behaviors are more likely to receive likes, comments, and attention than other types of photos. They also see more photos of risky behaviors online than offline (Strasburger, 2007), and may be more attuned to how those behaviors receive more likes (Sherman et al., 2016), and therefore could be influenced to add these types of pictures to their social media profiles (i.e., feeds, pages, stories). In addition, these findings could suggest that by seeing more risky behaviors, the scariness is diluted by overexposure and can encourage more participation in these risky behaviors.

However, a surprising result was the lack of association between manipulative-popular and deceptive like-seeking behaviors with depression and body image satisfaction. Research has specifically linked active engagement online with depression (Dumas et al., 2020), and body image satisfaction (Tiggemann & Anderberg, 2020). These non-significant findings could suggest that deceptive like-seeking behaviors have become normalized so much that these behaviors are no longer indicators of poor adjustment. In addition, these non-significant findings provide further support that motivation for going online may be more strongly related to emotional adjustment than actual social media use.

Motivations & Emotional Adjustment

One of the most exciting findings was the significant relationship between motivation and emotional adjustment. Specifically, social comparison was positively associated with depression and risky behaviors, and negatively associated with body image satisfaction. These relationships support the notion that engagement in social comparison online is strongly related to poor emotional adjustment, which supports previous findings as well (Seabrook et al., 2016). If users go online to compare themselves to others and do not receive the results they hoped for, their overall well-being could be lower, both in terms of depressive symptoms and body image satisfaction. As social media continue to be a place for users to share their "highlight reels," users who engage in social comparison may feel that they are always in state of upward social comparison because they are having to compete with someone's perfectly curated profile (Yau & Reich, 2019), which could then lead to lower wellbeing or lower body image. Alternatively, young adults who already have a low sense of self and low emotional adjustment may use social media as a way to socially compare to their peers. In either case, these findings provide continued support for how social comparison online will have negative implications (Choukas-Bradley et al., 2020; Jiotsa et al., 2021).

In addition to lower well-being, social comparison was associated with risky behaviors. This provides support to the idea that young adults may be so motivated to receive more likes on a post than their peers, that they will engage in more risky behaviors. If users see that risky behaviors receive more likes on a photo than just a normal photo, this may encourage individuals to partake in risky behaviors for more likes, too. If young adults believe that to climb the social ladder, they need more likes on a photo, they may be easily influenced by risky behaviors receiving a lot of likes and choose to partake as well. Another explanation could be that young

adults who already partake in risky behaviors may use social media as a way to compare themselves to their peers to gauge their social standing. If they engage in risky behaviors, they may want to know if their peers participate in anything riskier or to see who else may participate in their current risky behaviors.

In addition, feedback seeking was positively associated with depression and risky behaviors. This finding is supportive of previous research linking feedback seeking and depression (Nesi & Prinstein, 2015), and provides support for the hypothesized relationship between feedback seeking and risky behaviors (Sherman et al., 2016). Emerging adults who go online for the purpose of receiving feedback could be more sensitive to peer influence, as evidenced by their need for peer evaluation (i.e., they seek a high amount of feedback on their posts). Thus, if they see that peers receive positive feedback on posts that showcase risk-taking behaviors, they may be more susceptible to imitate these behaviors if they think it will win them higher peer approval in the form of likes and comments.

Popularity goals had positive associations with risky behaviors. This relationship between popularity goals and risky behaviors extends from the adolescent literature that shows the relationship between engagement in risky behaviors and popularity goals (Dumas et al., 2019). However, to my knowledge, this relationship has only been tested in adolescence and has not been replicated in emerging adulthood. Thus, this finding adds to the emerging adult literature on popularity and provides greater support about how popularity can influence the behavioral adjustment of emerging adults, particularly in terms of their risky behaviors.

The Moderating Role of Social Media Motivations

Social media motivations were associated with emotional adjustment. Social comparison had a significant negative association with body image. This suggests that when users have the intent

to gauge where they compare to their fellow peers, they may think less of their own body image compared to the they people they follow online. This supports previous findings linking social comparison to negative body image satisfaction (Fox & Vendemia, 2016). This finding also provides support that one's motivation for going online can negatively impact one's emotional adjustment. Users who socially compare themselves to the people they follow may be hypersensitive to others' appearance in comparison of their own appearance. If users see a "perfect" body on their feed, this may cause users to find all the imperfections in their own bodies. Especially as social media users share perfectly crafted and edited images online, users socially compare themselves to unrealistic standards, and ultimately that motivation for why they go online will be associated with lower body image satisfaction.

Feedback seeking had no significant relationships with any of the emotional adjustment variables. One possible explanation for this could be how social media's evolution. What was once a place to share photos or updates is now a place to share one's best photo or best update in to receive likes. Thus, feedback-seeking may be a more salient motivation in that users may not even realize this is why they choose to engage on these social media sites. As the social media sites update, the reason for why users participate online may be updated, too.

Limited support was found for the role of social media motivations as moderators of the associations between like-seeking and emotional adjustment. Popularity goals moderated the link between deceptive and manipulative-popular like-seeking behaviors and depression. The significant moderation effect between manipulative-popular like-seeking and depression suggests that emerging adults who have high popularity goals and engage in high manipulative-popular like-seeking behavior online have higher rates of depression compared to those who have low popularity goals and engage in manipulative-popular like-seeking. Adults who have a popularity

mindset and goals to attain that social status may engage in popular like-seeking behaviors as a way to garner more attention, but at the cost of feeling more depressed. Young adults who have these popularity goals may be motivated by the fact that they want to find peer acceptance (Lansu et al., 2022). As they have transitioned into the new social world of college, they may find themselves struggling to achieve peer acceptance. This may lead to a sense of pressure to find peers who do fit in and find ways to show they have been accepted by these peers (i.e., take a photo with them). This shows their own followers that they are friends with well-liked people on campus, and ultimately make it look like they "fit in." However, if the post does not do as well, it can feel like a greater peer rejection and lower well-being than someone who does not feel that same pressure to be accepted. Since the user used deceptive behaviors as ways to feel a sense of peer acceptance and did not receive the online acceptance they had hoped, there is greater emotional distress. This finding supports previous findings that have linked popularity as a moderation between social media use and depressive symptoms in adolescence (Nesi & Prinstein, 2015), but is the first to find this particularly with new like-seeking behaviors and in emerging adulthood. In addition, these results provide further evidence that popularity goals remain salient in emerging adulthood, and the dangers that are associated with emerging adults' prioritization of popularity goals.

The second significant moderation effect was quite surprising. Emerging adults who had low popularity goals and engaged in low levels of deceptive like-seeking behaviors had higher rates of depressive symptoms compared to adults who had high popularity goals and engage in low levels of deceptive like-seeking behaviors. This finding contradicts the previous finding linking deceptive like-seeking behaviors and depression in college students (Dumas et al., 2020), and contradicts the finding of popularity being positively related to deceptive like-seeking (Dumas et

al., 2017). One explanation for this finding could be that young adults who have popularity goals may view these deceptive behaviors as ways of achieving status and ultimately receive a little confidence by feeling like they have status. Thus, by participating in these behaviors, they emulate what a popular person does, and as such, feel a sense of confidence rather than worsening depressive symptoms because they feel like how a popular person would feel. However, research should look to expand on this finding and see if this result can be replicated.

It should be noted that relatively little variance in adjustment was explained by social media factors. While a good portion of the variance was explained by the control variables, the motivations and like-seeking behaviors did not explain much variance. Clearly, other variables need to be considered when examining the links between social media use and emotional adjustment. This cohort of young adults are part of a generation that has grown up with social media consistently at their fingertips and has been a daily part of their lives since early adolescence. As such, previous variables such as time spent on social media or motivations may not be enough to explain this relationship in this current sample of college students. Future research should look to uncover more motivations, behaviors, and other variables when examining this relationship.

General Discussion

Overall, the findings from these studies contribute new information to the existing literature examining like-seeking behaviors, social media motivations, and popularity in emerging adulthood. As social media companies continue to update their sites, the behaviors of their users also change. Study 1 found support for new behaviors young adults may do online (i.e., post multiple pictures, share to one's Instagram story), and suggest that these behaviors are normal, everyday behaviors. Study 1 also provided support for the notion that like-seeking

behaviors have changed, and that as like-seeking behaviors become more widely used, they are considered less manipulative to users. As social media continue to be a vital and frequent part of emerging adults' lives, behaviors that may seem deceptive or manipulative in nature are viewed by social media users as normative parts of the social media experience. Today, there are plenty of editing applications users can choose from, such as specific filter applications or applications that permit actual physical modifications to photos of one's body. In having multiple applications to choose from, and in seeing other users take advantage of them, these behaviors start to feel more normative to the average social media user. This study provided additional support that social media change and evolve (*Meta*), and that the research tools used to investigate social media use must remain up to date if the research findings are to be reliable and informative.

Study 2 documented how popularity can influence young adults into using more manipulative-popular behaviors. Limited studies have documented how popularity remains prominent with emerging adults (LaFontana & Cillessen, 2010; Lansu et al., 2022), and studies have only examined popularity as a motivation for using social media in adolescence, but not in emerging adulthood. The results from Studies 2 and 3 support the idea that popularity can still have an influence on how college students act online, and further suggest that popularity is a motivation for how they behave online. As this generation of emerging adults has grown up with social media readily at their fingertips, the goals they had in adolescence (i.e., popularity goals) follow them into emerging adulthood and continue to impact *why and how* they use social media.

Study 3 also provided insight into the relationship between social media and emotional adjustment. While there has been an increasing number of studies reporting negative outcomes related to social media (Verduyn et al., 2017), recently research has started to question whether other factors can exacerbate or attenuate these outcomes (Odgers & Jensen, 2020). One possible

explanation based on the findings from Study 3 could be the social media motivations. Social comparison had a negative relationship with body image satisfaction, suggesting that adults who use social media to socially compare are at risk for lower body image satisfaction compared to someone who does not frequently socially compare online. College students are already at risk for having low body image concerns (Pritchard & Cramblitt, 2014), but in an online setting, these concerns grow because users view perfectly curated and edited photos of people, and only see these images in their "best form." Thus, young adults are comparing themselves to unrealistic standards. In addition, social comparison also had positive relationship with risky behaviors. As emerging adults face these conflicting issues online (i.e., higher likes on risky behaviors), they have to figure out if likes are more important than safety. Thus, these two relationships suggest how dangerous this relationship can be for these social media users, especially in college where body image is an important concern (Pritchard & Cramblitt, 2014) and risky behaviors are prominent (Brown et al., 2009).

The non-significant finding between feedback seeking and emotional adjustment could suggest that the motivation of feedback seeking may be a more normative reason for going online and using social media. Emerging adults may use social media in a way to consistently receive feedback so much that this motivation has no impact on their emotional adjustment. For young adults, whether they are motivated to receive feedback or not, will post a photo on Instagram to receive likes and comments. They are no longer posting just to share with others, but to receive activity on their posts.

Limitations

These findings should be interpreted in light of some limitations to the study. First, there was not an equal sample of men and women in the studies, so gender differences could not be

tested. Another limitation is that Study 3 had a rather small sample size relative to the number of analyses run. Given the complex analyses included, particularly the regressions involving two-way interactions, Study 3 was likely underpowered, and the possibility of a Type-1 error was higher. To mitigate the chances of this error, significant results were only reported at $p < .01$ to show more robust findings. Another limitation of Study 3 was that the variance explained was exceptionally low in all Steps 2 and 3 of the regression models. Since all motivations were strongly related to each other, a conservative approach was taken and controlled for all motivations in the first step. In addition, depression and body image were correlated with each other, so those were also controlled for in Step 1. Thus, step 1 explained most of the variance in the models but also controlled for these important variables. Another limitation of all three studies were that they were cross-sectional, and Study 3 was correlational. This was a limitation because causal claims could not be made in the interpretations of the relationships between motivations and emotional adjustment. Finally, there was no specific measure for popularity motivation on social media. Social comparison and feedback seeking were specific scales to social media, but popularity goals were a general scale that were used to measure popularity in general. Thus, there was a challenge to understand the exact role popularity goals had on social media motivation and resulting behaviors.

Future Directions

These limitations provide suggested pathways for future research. First, these studies provide a foundation for longitudinal research. As mentioned, these studies were all cross-sectional and largely correlational. In order to understand the impact motivation has on a resulting outcome or how the state of one's wellbeing impacts one's motivation for going online, a longitudinal study needs to be conducted. Especially as social media continue to evolve and

change at a rapid pace, a longitudinal study that measures social media behaviors at multiple time points would accomplish two goals. It would provide further evidence regarding how social media motivations impact emotional and behavioral outcomes, and it would also provide researchers the chance to verify that the behaviors they measure are up to date with how social media users engage with those platforms. In addition to consistently validating these ever-changing online behaviors through a longitudinal study, researchers should also incorporate qualitative work too. Either once a year or every other year, researchers should conduct qualitative research by asking their target demographics (i.e., college students) about common behaviors they do online in order to remain up to date. Then, researchers should add these behaviors to their measures in their longitudinal projects to further understand if these new behaviors are normative or deceptive, and how the behaviors change over time.

Another needed future direction is to uncover what other motivations and variables may influence social media users to go online. While this study was the first to demonstrate how popularity goals can influence social media behaviors and emotional adjustment in young adults, other motives still need to be uncovered. One future variable to consider would be to examine *who* users follow online. Do they follow more of their peers or more celebrities and influencers? If users have more celebrities on their feed, they may not be as impacted by receiving less likes or comments on their posts as someone who only views their peers' posts because they know celebrities should receive more likes and comment than them. If someone only follows people they actually know, they could have a greater chance of feeling left out when seeing group pictures online, or lower body image satisfaction if someone they know has a better body image. However, the opposite could also be true that by seeing these made-up and perfectly edited celebrities with millions of likes on a photo, the emotional outcomes could be even worse

because they feel they "know" these celebrities, so seeing the stark differences in their activity may lead to great emotional distress. Thus, future research should measure *who* one follows as a potential variable when examining social media and emotional adjustment.

Future research should also aim to include equal numbers of men and women. This could allow researchers to see how the associations among like-seeking behaviors, motivations, and adjustment are similar or different for men and women. If behaviors are significantly different from equal sample sizes, there would be additional support for the notion that what is considered *normative* or *manipulative* is different between genders. In addition, further understanding of how the trends and behaviors change overtime would be fascinating.

Another future direction for research is to create a popularity measure specific to social media. In the current studies, feedback seeking and social comparison were measures designed specifically for measuring motivations in social media. The findings provide evidence that popularity is strongly related to like-seeking behaviors and the emotional adjustment, but would benefit from having a measure specific to popularity on social media. A scale like this could strengthen the current findings and would provide an easier way of comparing social media motivations impact on like-seeking behaviors and different resulting outcomes. If general popularity goals differed from popularity motivations on social media, this would be interesting because this difference would suggest that popularity looks different online and offline.

Finally, another future direction for this research would be to replicate these findings in adolescent samples. As adolescence marks the emergence of popularity (Cillessen & Mayeux, 2004), and the emergence of first social media profiles (Howard, 2018), these relationships may be even stronger than in emerging adulthood. As peer approval and peer acceptance are also important during this transition (Cillessen & Rose, 2011) and social media are an extension of

their offline world (Nesi et al., 2018), the relationship between motivations for going online, behaviors online and resulting outcomes could be even stronger than in emerging adults. In addition to replicating this study in adolescence, a longitudinal study would also be needed in order to further examine the directions of these relationships.

Conclusion

In conclusion, these studies advance the literature for emerging adults on like-seeking behaviors, popularity, social media motivations, and emotional adjustment. As social media evolve, so do the behaviors used with them. As popularity continues to remain salient in emerging adulthood, the goal to become popular may motivate how emerging adults behave online. One of the major takeaways from these studies is that motivation is a key factor in the relationship between social media and emotional adjustment. Another major takeaway from these studies is that social media behaviors constantly change, and what was once considered deceptive is now a normal behavior on social media. This suggests that like-seeking behaviors are less dangerous, or that this generation of social media users are not as impacted by deceptive and manipulative behaviors online. As social media quickly evolve, researchers need to remain up to speed about users' motivations, behaviors, and emotional and behavioral adjustment for going online.

References

Ahern, N. R., Sauer, P., & Thacker, P. (2015). Risky behaviors and social networking sites: How is YouTube influencing our youth? *Journal of Psychosocial Nursing & Mental Health Services,53*, 25-29. doi.org.proxy1.lib.uwo.ca/10.3928/02793695-20150908-01.

Antonucci, T.C., & Webster, N.J. (2019). Involvement with life and social networks: A pathway to successful aging. In R. Fernandez-Ballesteros, A. Benetos, & J-M. Robine (Eds.), *Cambridge handbook of successful aging.* New York: Cambridge University Press.

Antony, M. M., Rowa, K., Liss, A., Swallow, S. R., & Swinson, R. P. (2005). Social comparison processes in social phobia. *Behavior Therapy*, *36*(1), 65-75.

Arnett, J.J. (2006). Emerging adulthood: Understanding the new way of coming of age. In J.J. Arnett & J.L. Tanner (Eds.), *Emerging adults in America*. Washington, DC: American Psychological Association.

Auxier, B., & Anderson, M. (2021). Social media use in 2021. *Pew Research Center*, *1*, 1-4.

Beck AT, Steer RA, Brown GK. (1996). *Beck Depression Inventory (BDI-II)* (Vol. 10). Pearson.

Berryman, C., Ferguson, C. J., & Negy, C. (2018). Social media use and mental health among young adults. *Psychiatric quarterly*, *89*(2), 307-314.

Boyd, D. M., & Ellison, N. B. (2008). Social network sites: Definition, history, and scholarship. *Journal of Computer Mediated Communication, 13*, 210–230. doi:10.1111/j.1083-6101.2007.00393.x

Brener, N. D., Eaton, D. K., Flint, K. H., Hawkins, J., Kann, L., Kinchen, S., & Shanklin, S. L. (2004). Methodology of the youth risk behavior surveillance system-2013.

Brown, S. A., McGue, M., Maggs, J., Schulenberg, J., Hingson, R., Swartzwelder, S., ... & Murphy, S. (2008). A developmental perspective on alcohol and youths 16 to 20 years of age. *Pediatrics*, *121*(Supplement_4), S290-S310.

Brown, Z., & Tiggemann, M. (2016). Attractive celebrity and peer images on Instagram: Effect on women's mood and body image. *Body image*, *19*, 37-43.

Burnell, K., George, M. J., Vollet, J. W., Ehrenreich, S. E., & Underwood, M. K. (2019). Passive social networking site use and well-being: The mediating roles of social comparison and the fear of missing out.

Carruthers, S. E., Warnock-Parkes, E. L., & Clark, D. M. (2019). Accessing social media: Help or hindrance for people with social anxiety?. *Journal of Experimental Psychopathology*, *10*(2), 2043808719837811.

Chua, T. H. H., & Chang, L. (2016). Follow me and like my beautiful selfies: Singapore teenage girls' engagement in self-presentation and peer comparison on social media. Computers in Human Behavior, 55(Part A), 190–197. http://dx.doi.org/10.1016/j.chb.2015.09.011

Choukas-Bradley, S., Nesi, J., Widman, L., & Galla, B. M. (2020). The appearance-related social media consciousness scale: development and validation with adolescents. *Body Image*, *33*, 164-174.

Choukas-Bradley, S., Roberts, S., Maheux, A. J., & Nesi, J. (2021). The Perfect Storm: A Developmental–Sociocultural Framework for the Role of Social Media in Adolescent Girls' Body Image Concerns and Mental Health.

Cillessen, A. H. N., & Marks, P. E. L. (2011). Conceptualizing and measuring popularity. In A. H. N. Cillessen, D. Schwartz, & L. Mayeux (Eds.), *Popularity in the peer system* (p. 25–56). The Guilford Press.

Cillessen, A. H. N., & Rose, A. J. (2005). Understanding popularity in the peer system. *Current Directions in Psychological Science, 14*, 102–105. doi:10.1111/j.0963-7214.2005.00343.x

Cillessen, A. H., & Mayeux, L. (2004). From censure to reinforcement: Developmental changes in the association between aggression and social status. *Child Development, 75*(1), 147-163.

Clark, J. L., Algoe, S. B., & Green, M. C. (2018). Social network sites and well-being: the role of social connection. *Current Directions in Psychological Science*, *27*(1), 32-37.

Cohen, R., Newton-John, T., & Slater, A. (2018). 'Selfie'-objectification: The role of selfies in self objectification and disordered eating in young women. *Computers in Human Behavior, 79,* 68–74. https://doi.org/10.1016/j.chb.2017.10.027

Coleman, J. S. (1988). Social capital in the creation of human capital. *American journal of sociology*, *94*, S95-S120.

Dawes, M., & Xie, H. (2014). The role of popularity goal in early adolescents' behaviors and popularity status. *Developmental psychology*, *50*(2), 489.

Deci, E. L., & Ryan, R. M. (2000). The" what" and" why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry*, *11*(4), 227-268.

Dennis, A. R., Fuller, R. M., & Valacich, J. S. (2008). Media, tasks, and communication processes: A theory of media synchronicity. *MIS quarterly*, 575-600.

Dijkstra, J. K., Cillessen, A. H., Lindenberg, S., & Veenstra, R. (2010). Basking in reflected

glory and its limits: Why adolescents hang out with popular peers. *Journal of Research on Adolescence*, *20*(4), 942-958.

Dumas, T. M., Davis, J. P., & Ellis, W. E. (2019). Is it good to be bad? A longitudinal analysis of adolescent popularity motivations as a predictor of engagement in relational aggression and risk behaviors. *Youth & Society*, *51*(5), 659-679.

Dumas, T. M., Maxwell-Smith, M., Davis, J. P., & Giulietti, P. A. (2017). Lying or longing for likes? Narcissism, peer belonging, loneliness and normative versus deceptive like-seeking on Instagram in emerging adulthood. *Computers in Human Behavior*, *71*, 1-10.

Dumas, T. M., Maxwell-Smith, M. A., Tremblay, P. F., Litt, D. M., & Ellis, W. (2020). Gaining likes, but at what cost? Longitudinal relations between young adults' deceptive like-seeking on instagram, peer belonging and self-esteem. *Computers in Human Behavior*, *112*, 106467.

Elmore, K. C., Scull, T. M., & Kupersmidt, J. B. (2017). Media as a "super peer": how adolescents interpret media messages predicts their perception of alcohol and tobacco use norms. *Journal of youth and adolescence*, *46*(2), 376-387.

Erikson, E. H. (1968). *Identity: Youth and crises.* New York: Norton.

Erwin, B. A., Turk, C. L., Heimberg, R. G., Fresco, D. M., & Hantula, D. A. (2004). The Internet: home to a severe population of individuals with social anxiety disorder?. *Journal of anxiety disorders*, *18*(5), 629-646.

Faravelli, C., Scarpato, M. A., Castellini, G., & Sauro, C. L. (2013). Gender differences in depression and anxiety: the role of age. *Psychiatry research*, *210*(3), 1301-1303.

Feinstein, B. A., Hershenberg, R., Bhatia, V., Latack, J. A., Meuwly, N., & Davila, J. (2013).

Negative social comparison on Facebook and depressive symptoms: Rumination as a mechanism. *Psychology of Popular Media Culture*, *2*(3), 161.

Ferguson, S. M., & Ryan, A. M. (2019). It's lonely at the top: Adolescent students' peer-perceived popularity and self-perceived social contentment. *Journal of Youth and Adolescence*, *48*(2), 341-358.

Festinger, L. (1954). A theory of social comparison processes. *Human relations*, *7*(2), 117-140.

Fox, J., & Vendemia, M. A. (2016). Selective self-presentation and social comparison through photographs on social networking sites. *Cyberpsychology, Behavior, and Social Networking, 19*(10), 593–600. http://dx.doi.org/10.1089/cyber.2016.0248

Freberg, K., Graham, K., McGaughey, K., & Freberg, L. A. (2011). Who are the social media influencers? A study of public perceptions of personality. *Public relations review*, *37*(1), 90-92.

Friedlander, L., Connolly, J., Pepler, D., & Craig, W. (2007). Biological, familial, and peer influences on dating in early adolescence. *Archives of Sexual Behavior, 36*, 821–830.

Frison, E., & Eggermont, S. (2016). Exploring the relationships between different types of Facebook use, perceived online social support, and adolescents' depressed mood. *Social Science Computer Review*, *34*(2), 153-171.

Gil-Or, O., Levi-Belz, Y., & Turel, O. (2015). The "Facebook-self": Characteristics and psychological predictors of false self-presentation on Facebook. *Frontiers in psychology*, *6*, 99.

Godard, R. J. P. (2021). *Finding similar others online: social support in online communities of people with a stigmatized identity* (Doctoral dissertation, University of British Columbia).

Harmon, J., Boland, J., & Venta, A. (2021). Further validation of the motivations for electronic interaction scale. *Current Psychology*, 1-7.

Harper, B., & Tiggemann, M. (2008). The effect of thin ideal media images on women's self objectification, mood, and body image. *Sex Roles, 58*(9–10), 649–657. http://dx.doi.org/10.1007/s11199-007-9379-x

Hatton, G. (2018). Micro influencers vs macro influencers. *Social media today*.

Hill, L. G. (2019). Expanding Our Horizons: Risk, Protection, and Intervention in Emerging Adulthood. *Prevention Science*, *20*(3), 385-389.

Hofmann, S. G. (2007). Cognitive factors that maintain social anxiety disorder: A comprehensive model and its treatment implications. *Cognitive behaviour therapy*, *36*(4), 193-209.

Hoffman, S., & Warschburger, P. (2018). Patters of body image concerns in adolescence and early adulthood: A latent profile analysis. *Eating Behavior, 29*, 28-34.

Howard, J. (2018). What's the Average Age When Kids Get A Social Media Account?. *CNN Health*.

Hutchinson, A. (2021, May 12). *The power of TikTok for marketers and advertisers [infographic]*. Social Media Today. Retrieved from https://www.socialmediatoday.com/news/the-power-of-tiktok-for-marketers-and-advertisers-infographic/600094/.

Instagram from meta: Meta. Company Information and News. (n.d.). Retrieved March 30, 2022, from https://about.facebook.com/technologies/instagram/

Jarman, H. K., Marques, M. D., McLean, S. A., Slater, A., & Paxton, S. J. (2021). Social media,

body satisfaction and well-being among adolescents: A mediation model of appearance-ideal internalization and comparison. *Body Image, 36:* 139-148 https://doi.org/10.1016/j.bodyim.2020.11.005

Jiotsa, B., Naccache, B., Duval, M., Rocher, B., & Grall-Bronnec, M. (2021). Social media use and body image disorders: Association between frequency of comparing one's own physical appearance to that of people being followed on social media and body dissatisfaction and drive for thinness. *International journal of environmental research and public health*, *18*(6), 2880.

Jones, D. C. (2001). Social comparison and body image: Attractiveness comparisons to models and peers among adolescent girls and boys. *Sex Roles*, *45*(9), 645–664. https://doi.org/10.1023/A:1014815725852

Katz, J. E., & Crocker, E. T. (2015). Selfies| selfies and photo messaging as visual conversation: Reports from the United States, United Kingdom and China. *International Journal of Communication*, *9*, 12.

Kim, C., & Shen, C. (2020). Connecting activities on Social Network Sites and life satisfaction: A comparison of older and younger users. *Computers in Human Behavior*, *105*, 106222.

Kleiser, M., & Mayeux, L. (2021). Popularity and Gender Prototypicality: An Experimental Approach. *Journal of Youth and Adolescence*, 1-15.

Kleiser, Mayeux, McMillin, & O'Mealey. (2022, March). *Social Media Presence in Middle School: Links to Popularity, Aggression, and Prosocial Behavior.* Poster submitted to the Society for Research in Adolescence biennial meeting. New Orleans, LA.

. New Orleans, LA.

LaFontana, K. M., & Cillessen, A. H. (2010). Developmental changes in the priority of perceived

status in childhood and adolescence. *Social Development*, *19*(1), 130-147.

Lambert, N. M., Stillman, T. F., Hicks, J. A., Kamble, S., Baumeister, R. F., & Fincham, F. D. (2013). To belong is to matter: Sense of belonging enhances meaning in life. *Personality and Social Psychology Bulletin*, *39*(11), 1418-1427. https://doi.org/10.1177/0146167213499186

Lansu, T. A., Findley-Van Nostrand, D., & Cillessen, A. H. (2022). Popularity according to emerging adults: What is it, and how to acquire it. *Emerging Adulthood*, 21676968211066668.

Mackenzie, E., McMaugh, A., & Van Bergen, P. (2020). Digital support seeking in adolescent girls: A qualitative study of affordances and limitations. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *14*(3).

Manago, A. M., Graham, M. B., Greenfield, P. M., & Salimkhan, G. (2008). Self-presentation and gender on MySpace. *Journal of Applied Developmental Psychology*, *29*(6), 446-458.

Marwick, A. E., & Boyd, D. (2011). I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience. *New media & society*, *13*(1), 114-133.

Mayeux, L. & Kleiser, M. (2020). A gender prototypicality theory of adolescent peer popularity. *Adolescent Research Review, 5, 295-306.* DOI: 10.1007/s40894-019-00123-z.

Mayeux, L., Sandstrom, M. J., & Cillessen, A. H. (2008). Is being popular a risky proposition. *Journal of Research on Adolescence, 18*(1), 49-74.

Moreno, M. A., & Whitehill, J. M. (2014). Influence of social media on alcohol use in adolescents and young adults. *Alcohol research: current reviews*, *36*(1), 91.

National Center for Education Statistics (2017). Tables for the 2017 version of the Digest of Education Statistics. Retrieved from https://nces.ed.gov/programs/digest/ (Table 302.10) (Accessed 08.16.21).

Nesi, J. (2020). The Impact of Social Media on Youth Mental Health: Challenges and Opportunities. *North Carolina Medical Journal*, *81*(2), 116–121. https://doi.org/10.18043/ncm.81.2.116

Nesi, J., Choukas-Bradley, S., & Prinstein, M. J. (2018a). Transformation of adolescent peer relations in the social media context: Part 1—A theoretical framework and application to dyadic peer relationships. *Clinical child and family psychology review*, *21*(3), 267-294.

Nesi, J., Choukas-Bradley, S., & Prinstein, M. J. (2018b). Transformation of adolescent peer relations in the social media context: Part 2—application to peer group processes and future directions for research. *Clinical child and family psychology review*, *21*(3), 295-319.

Nesi, J., Miller, A. B., & Prinstein, M. J. (2017). Adolescents' depressive symptoms and subsequent technology-based interpersonal behaviors: A multi-wave study. *Journal of Applied Developmental Psychology*, *51*, 12-19.

Nesi, J., & Prinstein, M. J. (2015). Using social media for social comparison and feedback-seeking: Gender and popularity moderate associations with depressive symptoms. *Journal of abnormal child psychology*, *43*(8), 1427-1438.

Nesi, J., & Prinstein, M. J. (2019). In search of likes: Longitudinal associations between adolescents' digital status seeking and health-risk behaviors. *Journal of Clinical Child & Adolescent Psychology*.

Nesi, J., Rothenberg, W. A., Bettis, A. H., Massing-Schaffer, M., Fox, K. A., Telzer, E. H., ... &

Prinstein, M. J. (2021). Emotional responses to social media experiences among adolescents: Longitudinal associations with depressive symptoms. *Journal of Clinical Child & Adolescent Psychology*, 1-16.

Nesi J, Wolff, J.C. & Hunt J. (2019) Patterns of social media use among adolescents who are psychiatrically hospitalized. *Journal of the American Academy of Child and Adolescent Psychiatry. 58*(6), 635-639. doi: 10.1016/j.jaac.2019.03.009

O'Day, E. B., & Heimberg, R. G. (2021). Social media use, social anxiety, and loneliness: A systematic review. *Computers in Human Behavior Reports*, *3*, 100070.

Odgers, C. L., & Jensen, M. R. (2020). Annual research review: Adolescent mental health in the digital age: Facts, fears, and future directions. *Journal of Child Psychology and Psychiatry*, *61*(3), 336-348.

Olweus, D. (2012). Cyberbullying: An overrated phenomenon?. *European journal of developmental psychology*, *9*(5), 520-538.

O'Mealey, M., & Mayeux, L. (2022). Similarities and Differences in Popular Peers in Adolescence and Emerging Adulthood. *The Journal of Genetic Psychology*, *183*(2), 152-168.

Padilla-Walker, L.M., Memmott-Elison, M., & Nelson, L. (2017). Positive relationships as an indicator of flourishing during emerging adulthood. In L.M. Padilla-Walker & L. Nelson (Eds.), *Flourishing in emerging adulthood.* New York: Oxford University Press.

Pang, H. (2017). Is smartphone creating a better life? Exploring the relationships of the smartphone practices, social capital and psychological well-being among college students. *International Journal of Advanced Media and Communication*, *7*(3), 205-223.

Perloff, R. M. (2014). Social media effects on young women's body image concerns: Theoretical

perspectives and an agenda for research. *Sex Roles, 71*(11–12), 363–377. https ://doi. org/10.1007/s1119 9-014-0384-6.

Peter, J., & Valkenburg, P. M. (2012). The Effects Of Internet Communication On Adolescents' Psychological Development: An Assessment Of Risks And Opportunities. *The international encyclopedia of media studies*.

Prinstein, M. J., & Aikins, J. W. (2004). Cognitive moderators of the longitudinal association between peer rejection and adolescent depressive symptoms. *Journal of Abnormal Child Psychology, 32*, 147–158. https://doi. org/10.1023/b:jacp.0000019767.55592.63

Pritchard, M., & Cramblitt, B. (2014). Media influence on drive for thinness and drive for muscularity. *Sex Roles*, *71*(5), 208-218.

Roeser, K. A. (2013). *Personal and social factors in risk-taking behaviors of emerging adults*. Wayne State University.

Shabahang, R., Ghaemi, Z., Aruguete, M. S., Saeedi, M., Shim, H., & Farnaz Sedighian, S. (2022). Measuring gratification from and consequences of likes: The potential for maladaptive social media behavior. *Journal of Media Psychology: Theories, Methods, and Applications*.

Schwartz, D., Kelleghan, A., Malamut, S., Mali, L., Ryjova, Y., Hopmeyer, A., & Luo, T. (2019). Distinct modalities of electronic communication and school adjustment. *Journal of youth and adolescence*, *48*(8), 1452-1468.

Scott, B. A., & Judge, T. A. (2009). The popularity contest at work: Who wins, why, and what do they receive? *Journal of Applied Psychology, 94*(1), 20-33.

Seabrook, E. M., Kern, M. L., & Rickard, N. S. (2016). Social networking sites, depression, and anxiety: A systematic review. *JMIR Mental Health, 3,* e50. https://doi.org/

10.2196/mental.5842

Shapiro, L. A. S., & Margolin, G. (2014). Growing up wired: Social networking sites and adolescent psychosocial development. *Clinical child and family psychology review*, *17*(1), 1-18.

Sherman, L. E., Payton, A. A., Hernandez, L. M., Greenfield, P. M., & Dapretto, M. (2016). The power of the like in adolescence: Effects of peer influence on neural and behavioral responses to social media. *Psychological science*, *27*(7), 1027-1035.

Shi, Y., & Moody, J. (2017). Most likely to succeed: Long-run returns to adolescent popularity. *Social currents*, *4*(1), 13-33.

Strasburger, V. C. (2007). Super-peer theory. *Encyclopedia of children, adolescents, and the media. Thousand Oaks, CA: Sage Publications, Inc*.

Swirsky, J. M., Rosie, M., & Xie, H. (2021). Correlates of Early Adolescents' Social Media Engagement: The Role of Pubertal Status and Social Goals. *Journal of Youth and Adolescence*, 1-12.

Tiggemann, M., & Anderberg, I. (2020). Social media is not real: The effect of 'Instagram vs reality'images on women's social comparison and body image. *New Media & Society*, *22*(12), 2183-2199.

Tiggemann, M., Hayden, S., Brown, Z., & Veldhuis, J. (2018). The effect of Instagram "likes" on women's social comparison and body dissatisfaction. *Body image*, *26*, 90-97.

Twenge, J. M., Joiner, T. E., Rogers, M. L., & Martin, G. N. (2018). Increases in depressive

symptoms, suicide-related outcomes, and suicide rates among US adolescents after 2010 and links to increased new media screen time. *Clinical Psychological Science, 6*(1), 3-17. https:// doi.org/10.1177/2167702617723376

Underwood, M. K., Brown, B. B., & Ehrenreich, S. E. (2019). Social Media and Peer Relations. In W. M. Bukowski, B. P. Laursen, & K. H. Rubin (Authors), *Handbook of Peer Interactions, Relationships, and Groups* (pp. 533-551). New York, NY: Guilford Publications.

Underwood, M. K., & Ehrenreich, S. E. (2017). The power and the pain of adolescents' digital communication: Cyber victimization and the perils of lurking. *American Psychologist*, *72*(2), 144.

Valkenburg, P. M., & Peter, J. (2011). Online communication among adolescents: An integrated model of its attraction, opportunities, and risks. *Journal of adolescent health*, *48*(2), 121-127.

Van den Eijnden, R. J., Meerkerk, G. J., Vermulst, A. A., Spijkerman, R., & Engels, R. C. (2008). Online communication, compulsive Internet use, and psychosocial well-being among adolescents: A longitudinal study. *Developmental psychology*, *44*(3), 655.

Vannucci, A., & Ohannessian, C. M. (2019). Social media use subgroups differentially predict psychosocial well-being during early adolescence. *Journal of youth and adolescence*, *48*(8), 1469-1493.

Vannucci, A., Simpson, E. G., Gagnon, S., & Ohannessian, C. M. (2020). Social media use and risky behaviors in adolescents: A meta-analysis. *Journal of Adolescence*, *79*, 258-274.

Verduyn, P., Ybarra, O., R_esibois, M., Jonides, J., & Kross, E. (2017). Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review, 11*, 274–302. https://doi.org/10.1111/sipr.12033

Verrastro, V., Liga, F., Cuzzocrea, F., & Gugliandolo, M. C. (2020). Fear the Instagram: beauty stereotypes, body image and Instagram use in a sample of male and female adolescents. *Qwerty-Open and Interdisciplinary Journal of Technology, Culture and Education*, *15*(1), 31-49.

Vye, C., Scholljegerdes, K., & Welch, I. D. (2007). *Under pressure and overwhelmed: Coping with anxiety in college*. Praeger Publishers/Greenwood Publishing Group.

Walther, J. B. (2007). Selective self-presentation in computer-mediated communication: Hyperpersonal dimensions of technology, language, and cognition. *Computers in Human Behavior*, *23*(5), 2538-2557.

Weidman, A. C., Fernandez, K. C., Levinson, C. A., Augustine, A. A., Larsen, R. J., & Rodebaugh, T. L. (2012). Compensatory internet use among individuals higher in social anxiety and its implications for well-being. *Personality and individual differences*, *53*(3), 191-195.

Yau, J. C., & Reich, S. M. (2019). “It's Just a Lot of Work”: Adolescents’ Self-Presentation Norms and Practices on Facebook and Instagram. *Journal of research on adolescence*, *29*(1), 196-209.

Table 1
Like-Seeking behavior – Manipulation 1. Exploratory factor analysis.

Items	Normative	Deceptive	Manipulative-Popular
Use a filter	**0.635**	-0.011	0.095
Use a hashtag	**0.344**	0.135	0.21
Upload the post at a certain time of day	**0.659**	0.012	0.05
Share the post to other social media networking sites	**0.471**	0.167	0.108
Like other people's pictures to receive likes in return (i.e., get a like for like)	**0.537**	0.067	0.127
Share the post to your Instagram stories*	**0.531**	0.224	-0.046
Post multiple pictures instead of just one*	**0.546**	-0.092	0.171
Create multiple captions and ask your friends which caption is best*	**0.63**	0.058	0.076
Purchase followers	0.029	**0.938**	0.177
Purchase likes	0.058	**0.933**	0.192
Use software to help modify your physical appearance	**0.41**	**0.382**	-0.031
Tag a popular person in the photo*	0.058	0.066	**0.823**
Make sure to include a picture with a popular person from campus*	0.252	0.245	**0.64**

Note: Bolded numbers indicate final factor loadings.
** Indicates new items added onto the original scale.*

Table 2
Model Fit – Exploratory Factor Analyses

	$\chi 2$	RMSEA	SRMR
Model 1	(42) = 90.419, p<.01	.085, with a 90% confidence interval [.061, .109]	.053

Note: Models suggests adequate fit. To have adequate fit, the RMSEA needs to be <.10, and the SRMR needs to be <.08.

Table 3.
Like-seeking Behavior – Confirmatory Factor Analyses
Standardized Factor Loadings

	Model 1			**Model 2**		
Items	**Norm**	**Decep**	**Man-Pop**	**Norm**	**Decep**	**Man-Pop**
Use a filter	**0.68**			**0.69**		
Use a hashtag	**0.67**			**0.67**		
Upload the post at a certain time of day	**0.68**			**0.68**		
Share the post to other social media networking sites	**0.55**			**0.55**		
Like other people's pictures to receive likes in return (i.e., get a like for like)	**0.46**			**0.46**		
Share the post to your Instagram stories	**0.56**			**0.56**		
Post multiple pictures instead of just one	**0.50**			**0.48**		
Create multiple captions and ask your friends which caption is best	**0.64**			**0.64**		
Use software to help modify your physical appearance	**0.60**	.10		**.62**		
Purchase followers		**.89**			**0.89**	
Purchase likes		**.93**			**0.96**	
Tag a popular person in the photo			**.46**			**0.45**
Make sure to include a picture with a popular person from campus			**.71**			**0.73**

Note: Bolded numbers indicate significant factor loadings at $p<.01$

Table 4
Model Fit –Confirmatory Factor Analyses

	χ2	**RMSEA**	**CFI**	**TLI**	**SRMR**	**χ^2/df**
Model 1	(61) = 91.74, $p<.01$	.05, with a 90% confidence interval [.03-.07]	.96	.95	.06	2.64(1), *ns*
Model 2	(62) = 94.38, $p<.01$	.05, with a 90% confidence interval [.03-.07]	.96	.95	.06	

Table 5

Social Media Descriptive Statistics – Study 2 & 3

Social Media Apps	Participants Reporting Use		Hours Spent on SM *M*(SD)	
	Study 2	Study 3	Study 2	Study 3
Snapchat	316 (96.6%)	199 (92.6%)		
Instagram	309 (94.5%)	200 (93.0%)		
TikTok	282 (86.2%)	164 (76.3%)		
Facebook	160 (48.9%)	127 (59.1%)		
Twitter	158 (48.3%)	123 (57.2%)		
YouTube	5 (1.5%)	5 (2.5%)		
Other (Reddit, Pinterest, Tumblr, VSCO, YikYak)	14 (4.3%)	15 (6.8%)		
All Social Media	327 (100%)	213 (99.1%)	5.32*(2.56)*	4.86 (*2.77)*

Note. Study 2 had 327 participants; Study 3 had 221 participants

Table 6 – Correlations, means and standard deviations

	M(*SD)*	Risky Behaviors	Body Image	Depression	Pop Goals	Social Comparison	Feedback Seeking	LS Norm	LS Decp	LS Pop	LS Total
RB	2.07(*.78)*	1.00	0.02	0.03	**0.16**	**0.25**	**0.21**	**0.21**	0.05	0.12	**0.21**
BI	57.73(*24.53)*		1.00	**-0.51**	0.05	**-0.19**	-0.09	-0.02	0.00	0.08	-0.01
Dep	32.59(*8.85)*			1.00	-0.01	**0.18**	**0.16**	0.09	0.08	-0.04	0.08
Pop Goals	1.87(*.51)*				1.00	**.51**	**.55**	**.35**	**.42**	**.31**	**.40**
SC	2.25(*.97)*					1.00	**0.75**	**0.45**	**0.22**	**0.23**	**0.46**
FS	2.21(*1.05)*						1.00	**0.48**	**0.24**	**0.34**	**0.50**
LS Norm	1.93(*.51)*							1.00	**0.27**	**0.38**	**0.98**
LS Decp	1.05(*.24)*								1.00	**0.31**	**0.37**
LS Pop	1.28(*.43)*									1.00	**0.52**
LS Total	1.71(*.40)*										1.00

Note: Bolded numbers indicate significant at $p<.05$

Table 7 – Hierarchical Linear Regressions - Social Comparison

	Depression			Body Image		
	β	*t*	ΔR^2	*β*	*t*	ΔR^2
Step 1.			.40*			.28*
Gender	.16	2.75*		-.12	-1.88	
Depression	--	--	--	-.47	-7.68*	
Body Image	-.46	-7.68*		--	--	
Feedback Seeking	.13	1.92		-.05	-.73	
Pop Goals	-.03	-.47		.06	.88	
Step 2.			.01			.03
Like-seeking Normative	-.05	-.62		.09	1.24	
Like-seeking Deceptive	.09	1.42		.01	.11	
Like-seeking Popular	-.06	-.89		.03	.49	
Social Comparison	.00	.00		-.23	.-2.54*	
Step 3.			.01			.01
SC X Normative	.00	-.01		-.04	-.58	
SC X Deceptive	-.12	-1.10		.07	.64	
SC X Popular	.14	1.74		.10	1.33	

Note: Based on Table 6, if the opposing motivation or outcome was significantly correlated, it was controlled for in the first step.
* = *p<.01*

Table 8 – Hierarchical Linear Regressions – Feedback Seeking

	Depression			Risky Behaviors		
	β	t	ΔR^2	β	t	ΔR^2
Step 1.			.29*			.13*
Gender	.16	2.72*		-.27	-4.11*	
Depression	--	--	--	--	--	
Body Image	-.45	-7.48*		--	--	
Social Comparison	.08	1.20		.29	3.83*	
Pop Goals	-.01	-.02		-.02	-.32	
Step 2.			.02			.04
Like-seeking Normative	-.05	-.62		.23	2.97*	
Like-seeking Deceptive	.09	1.42		-.04	-.60	
Like-seeking Popular	-.06	-.87		.02	.25	
Feedback Seeking	.16	1.75		-.04	-.39	
Step 3.			.01			.00
FS X Normative	.02	.23		.03	.45	
FS X Deceptive	-.09	-.75		-.03	-.25	
FS X Popular	.10	1.21		-.01	-.14	

Note: Based on Table 6, if the opposing motivation or outcome was significantly correlated, it was controlled for in the first step.
** = p<.05; ** = p<.01*

Table 9 – Hierarchical Linear Regressions – Popularity Goals

	Depression			Risky Behaviors		
	β	*t*	ΔR^2	*β*	*t*	ΔR^2
Step 1.			.30*			.13*
Gender	.17	2.85*		-.26	-4.10*	
Depression	--	--	--	--	--	--
Body Image	-.46	-7.66*		--	--	
Feedback Seeking	.12	1.43		.02	.20	
Social Comparison	-.01	-.14		.26	2.63*	
Step 2.			.01			.04
Like-seeking Normative	-.05	-.62		.23	2.97*	
Like-seeking Deceptive	.09	1.42		-.04	-.60	
Like-seeking Popular	-.06	-.87		.02	.25	
Popularity Goals	-.05	-.71		-.05	-.61	
Step 3.			.03			.02
PG X Normative	-.03	-.43		-.01	-.28	
PGX Deceptive	-.41	-.2.99*		.23	1.54	
PG X Popular	.28	2.64*		-.23	-1.90	

Note: Based on Table 6, if the opposing motivation or outcome was significantly correlated, it was controlled for in the first step.
** = p<.05; ** = p<.01*

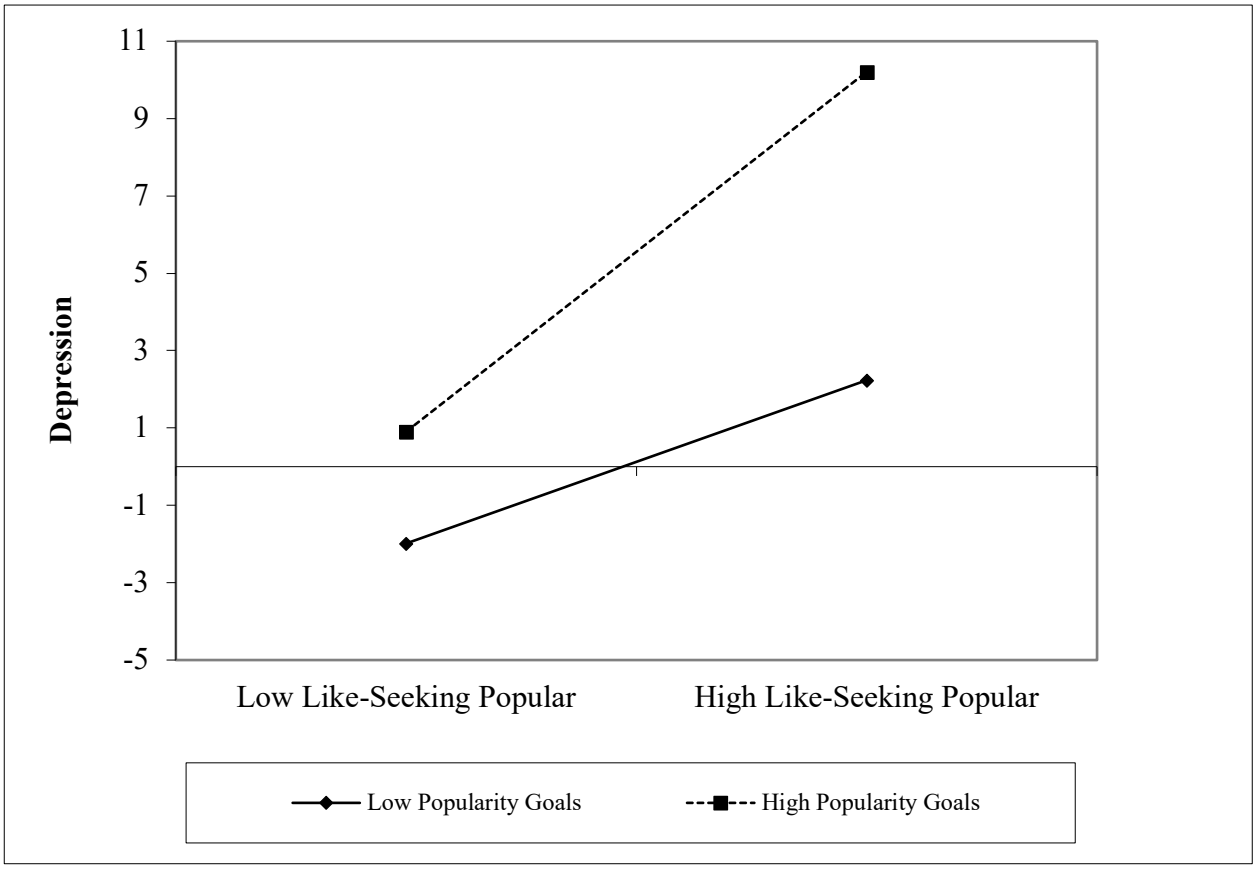


Figure 1. Popularity goals moderate the association between manipulative-popular like-seeking behaviors and depression.

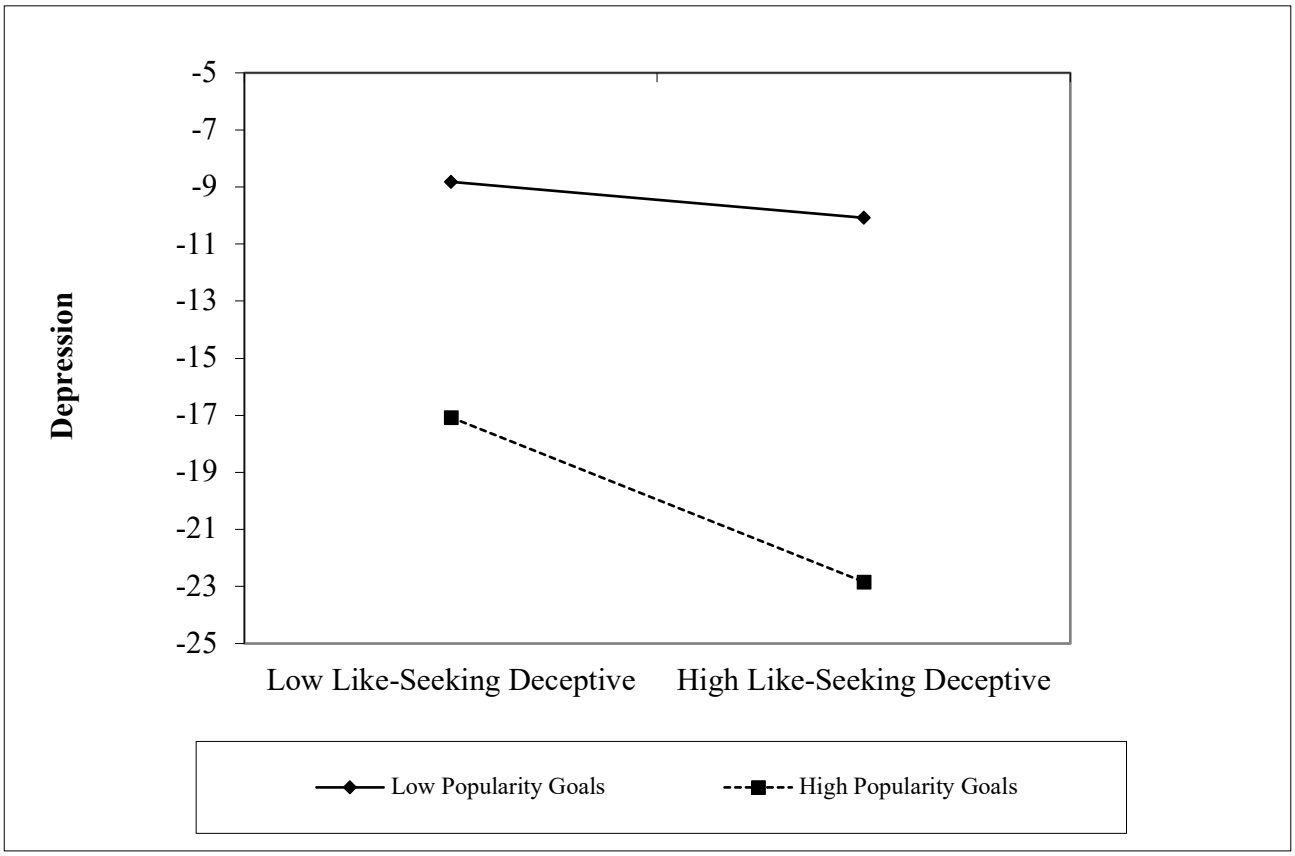


Figure 2. Popularity goals moderates the association between deceptive like-seeking behaviors and depression.