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ORIGINAL ARTICLE

# Picture Perfect: The Relationship between Selfie Behaviors, Self-Objectification, and Depressive Symptoms

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## Abstract

Social media use has been linked to depression, although there is evidence that how one uses social media matters. Self-objectification may influence social media-related behaviors, such as taking many pictures before posting and using photo editing. These may be related to negative outcomes, perhaps because they contribute to feeling disingenuous online. These relationships were explored in the context of selfie posting on Instagram among a sample of young U.S. women who completed self-report measures. Mediation analyses were used to determine whether self-objectification, operationalized as body surveillance, predicted depressive symptoms serially mediated by either (a) taking multiple pictures before posting or (b) photo-manipulation as well as through feeling disingenuous online. In the first model, body surveillance predicted taking multiple selfies before posting which, in turn, related to feelings of depression. Taking multiple selfies before posting was not related to feelings of deception. In the second model, there was a significant four-variable indirect effect wherein self-objectification predicted depression through photo manipulation and feelings of disingenuousness online. The present study shows that there are specific behaviors that women, especially those who self-objectify, engage in before actively using social media that can relate to negative consequences. Understanding how self-objectification impacts social media behaviors can help women became more aware of their engagement in potentially problematic behaviors and work toward self-acceptance.

**Keywords** Self-objectification · Body surveillance · Social media use · Depression · Photo editing · Selfies · Self-presentation

Social media is widely used to allow people to post text and photos about themselves and their lives. Previous studies have found a variety of costs and benefits associated with engaging with social media as a whole. Because social media can allow individuals to connect with others, there can be psychological benefits to social media use. For example, research has shown that social media use is related to maintaining offline relationships and gaining social capital that can lead to positive mental health (Ellison et al. 2007; Kim and Kim 2017). However, other studies have examined several negative consequences associated with social media use including engaging in social comparison, having low self-esteem, and engaging in self-objectification (Hanna et al. 2017). Perhaps one of the most noted risks associated with social media use is depression, which is more common for those who report spending increased time on social networking sites across platforms (Lin et al. 2016)

Research suggests that it is how one uses social media that determines whether one suffers or benefits from its use. For example, passive use, such as looking at content others have posted (like selfies, that is, photographs one takes of one's self) or reading and not interacting with others, has been identified as particularly problematic; such use has been linked to increased anxiety, feelings of envy, and decreased well-being (Shaw et al. 2015; Verduyn et al. 2015; Verduyn et al. 2017). Conversely, using social media actively, such as commenting with others and posting frequently, has been linked with more positive feelings of social ties with others (Ellison et al. 2007; Verduyn et al. 2017). In line with these patterns of active use, one study with both male and female participants showed that there was no statistically significant relationship between posting selfies and self-esteem, but there was an inverse relationship between viewing other people's selfies and self-esteem (Wang et al. 2017).

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However, there may be negative consequences associated with certain kinds of active use. For example, there are certain behaviors in which one can engage *before* posting pictures that might undermine the potential psychological benefits of active use. Specifically, engaging in behaviors such as taking a large number of photos before selecting one to post or manipulating photos may be related to negative psychological consequences because these behaviors may be influenced by the processes of self-objectification.

Women live in a culture where they often receive the message that how they physically look is more important than what they can do. Because of this context, many women internalize an observers' gaze—a process known as self-objectification (Fredrickson and Roberts 1997). One manifestation of this self-objectification is body surveillance, that is, monitoring how one's body looks in order to determine whether one meets internalized appearance standards (Manago et al. 2015; Moradi and Huang 2008). Self-objectification has been related to a number of negative mental health outcomes including body shame, appearance anxiety, and depression (for reviews, see Jones and Griffiths 2015; Moradi and Huang 2008).

Research has identified self-objectification as a potential outcome of social media use (Fardouly et al. 2018; Feltman and Szymanski 2018). For example, in one study, Instagram use predicted the internalization of cultural beauty standards in women, as well as appearance comparisons, which then predicted body surveillance (Feltman and Szymanski 2018). Other studies have shown that the relationship between social media use and negative outcomes is mediated by self-objectification, particularly engaging in body surveillance (Hanna et al. 2017; Manago et al. 2015). The visual nature of much social media activity (e.g., posting selfies and other pictures of oneself) may indeed enhance the self-objectification process. Taking selfies, for example, inherently causes women to engage in the act of looking at their bodies through an observer's gaze (Ahadzadeh et al. 2017). This process may be particularly enhanced on inherently visual platforms such as Instagram.

Although social media use may very well impact self-objectification, one's level of self-objectification likely also affects how one engages with social media. People who self-objectify may place a great deal of value on posting photos that reflect societal standards of beauty. Research has indicated that some women manipulate photos through the use of filters or by using techniques that enlarge or slim parts of their body (Chae 2017; McLean et al. 2015). Engaging in photo manipulation before posting on social media has been shown to be related to body dissatisfaction (McLean et al. 2015), narcissism (Kim and Chock 2017), and the desire to present an ideal self to others (Chae 2017). Another behavior in which people may engage before posting photos, especially selfies, is taking a large number of photos before deciding which to post. One underlying motivation for this behavior may be the desire for social acceptance through "likes" or comments from others (Ramsey and Horan 2017). Although there is very little research investigating self-objectification as a predictor of selfie behaviors, one study of young women did find that self-objectification, specifically body surveillance, was related to a variety of selfie behaviors including deliberately selecting selfies before posting and editing (Veldhuis et al. 2018).

There has been little research on the psychological consequences of either editing photos before sharing them or taking many photos before posting. One experimental study found that women who took and posted selfies online felt more anxious, less confidant, and less physically attractive after having to post a selfie online (in comparison to reading a travel article; Mills et al. 2018). In their study, the ability to edit selfies did not ameliorate these negative effects. We hypothesize that those who regularly edit or carefully select selfies may actually experience negative consequences because when people engage in these behaviors, they may feel as though they are being deceptive about what they post online. (Ahadzadeh et al. 2017; Michikyan et al. 2015). Individuals who actively edit their photos may experience a disparity between their actual and ideal body, having a greater need to digitally correct for what does not correspond to their ideal self (Ahadzadeh et al. 2017). When they post this idealized version of themselves, they may feel as though the self they post is not an accurate representation of their true self. Carefully selecting from a number of pictures before posting may also be an attempt to present an ideal self online and may, similarly, relate to experiencing feelings of deception (Ahadzadeh et al. 2017; Diefenbach and Christoforakos 2017).

This sense of deception may undo some of the positive benefits of active social media use because of the feeling that any social connections that are made are not based in reality. There is limited research on the sense that one is being deceptive online. One study found that adolescents with low self-esteem were more likely to display a false self that is characterized by deceiving, comparing to, or impressing others online (Michikyan et al. 2015). A sense of self-discrepancy on Instagram has also been related to body dissatisfaction (Ahadzadeh et al. 2017). Presenting a deceptive self online may be specifically related to depression because research has shown that impression management on Facebook is related to higher levels of depression (Rosen et al. 2013).

We hypothesized that self-objectification, specifically engaging in body surveillance, would predict engaging in the practice of taking large numbers of selfies before selecting one to share on social media, as well as manipulating photos before posting. We were particularly interested in investigating this behavior among young woman because, although individuals of all ages can take and post selfies, selfie posting and editing are phenomena that are more common in the young adult population (Dhir et al. 2016). Moreover, much

of the research looking at the interface of self-objectification and selfie behavior has focused on samples of young women (e.g., Mills et al. 2018; Veldhuis et al. 2018). Additionally, although men may experience self-objectification, the objectification process has been related to more negative effects in women (Moradi and Huang 2008).

We proposed two mediational models in which self-objectification would indirectly predict depressive symptoms through selfie behaviors as well as feelings of disingenuousness online. The first model tested whether the relationship between body surveillance and depression would be mediated by taking many selfies before posting and a sense of disingenuousness online. The second model used photo manipulation and feelings of disingenuousness online as the mediators.

## Method

### Participants

A total of 164 self-identified women participated in the present study. All women were students at a public liberal arts university in the Southeastern United States. They ranged in age from age 17 to 24, with an average age of 18.73 years ($SD = 1.12$). The majority of the sample identified as first-year college students ($n = 98$, 59.0%); 27.7% ($n = 46$) identified as second-year college students, 6.6% ($n = 11$) as third-year college students, and 5.4% ($n = 9$) as fourth-year college students. An additional two participants (1.2%) chose not to respond to this item. The majority of the sample identified as White ($n = 118$, 71.1%); 7.8% ($n = 13$) identified as Multiracial, 7.2% ($n = 12$) identified as Black/African American, 2.4% ($n = 4$) as Latinx, 1.2% ($n = 2$) as American Indian or Alaskan Native, 1.2% ($n = 2$) as Native Hawaiian or other Pacific Islander, 1.2% ($n = 2$) as East Asian, and .6% ($n = 1$) as South Asian. An additional 5.4% ($n = 9$) reported that they identified in a different way, and three participants (1.8%) opted not to respond to this item. The majority of the sample identified as straight ($n = 133$, 80.1%). Additionally, 9.6% ($n = 16$) identified as bisexual, 3.0% ($n = 5$) as lesbian/gay, 2.4% ($n = 4$) as asexual, and 1.8% ($n = 3$) as pansexual. Additionally, 1.2% ($n = 2$) identified in a different way, and three participants (1.8%) did not respond to this item. The majority of the sample identified as middle class ($n = 94$, 56.6%). Participants also identified as poor ($n = 3$, 1.8%), working class ($n = 25$, 15.1%), upper-middle class ($n = 40$, 24.1%), and wealthy ($n = 2$, 1.2%). Two participants (1.2%) chose not to respond to this item.

### Procedure and Measures

Our study was reviewed for compliance with standards for the ethical treatment of human participants and approved by the university's Institutional Review Board. Additionally, a blanket parental consent form was reviewed separately by the IRB. This form allowed students who were 17 to give assent to particular studies deemed low risk if a signed parental consent form was on file with the Department of Psychological Science. Participants were recruited from a general psychology participant pool and received partial course credit in exchange for their participation. In order to be eligible for our study, participants had to identify as a woman, have an Instagram account, and have used their Instagram account in the 30 days prior to participation in the study.

Once participants signed up to participate through an online portal, a link to a secure online survey was made available to them to complete at their convenience during the following 2 weeks. Once they clicked on the link, they were taken to an informed consent page. After clicking their consent, they were then advanced into the survey that began with three screening questions to verify that they met the eligibility requirements. If they answered no to any of these screening questions, they were automatically taken to a page that indicated they did not meet the requirements to participate in the study. After completing the questionnaire, they were taken to a debriefing page. When participants advanced from the debriefing page, they were taken back to the online participant pool portal and their credit was automatically awarded. The following measures are detailed in the order participants encountered them.

#### Photo Manipulation

The Self Photo Manipulation Scale (SPMS; McLean et al. 2015) is a ten-item measure that was used to assess participants' frequency of photo manipulation. Eight of the 10 items address edits related to one's physical appearance (e.g., "Make specific parts of your body look larger or look smaller" and "Get rid of red eye"). The other two items address the general look of the photo and use of filters (e.g., "Adjusting the light/darkness of the photo"). We adapted the original measure to ask specifically about photo manipulation behaviors related to selfies posted to Instagram. Participants were asked "For photos of yourself that you post on Instagram, how often do you do the following to make the photos look better?" Responses were given on a scale ranging from 1 (*never*) to 5 (*always*). Scale scores were calculated by averaging the item responses, and higher scores indicated more frequent photo manipulation. The measure was reliable in both the original ($\alpha = .85$) and the present study ($\alpha = .82$).

#### Average Number of Selfies

One question was developed by the researchers to assess the typical number of photos participants would take before selecting a selfie to post (i.e., "How many selfies do you typically take before you choose one to post?"). Response

options were "1", "2–5", "6–10", "11–15", "16–20", and "More than 20." A categorical measure was selected because we did not think it likely that participants could report specific numbers for their typical number of selfies. We believed that they would, however, be able to identify the range within which they likely fell.

### Body Surveillance

The surveillance subscale of the Objectified Body Consciousness Scale (OBCS; McKinley and Hyde 1996) is an eight-item measure that is used to assess the extent to which people take an observer's perspective toward their own bodies. A sample item is "I often worry about whether the clothes I am wearing make me look good." The measure uses a 6-point response scale ranging from 1 (*disagree strongly*) to 6 (*agree strongly*). Scores were averaged, with a higher score indicating greater adoption of an observer's perspective toward their own bodies. This measure was found to be reliable in the original study ($\alpha = .89$) as well as in the present study ($\alpha = .80$).

### Deception on Social Media

The deception subscale from the Self-Presentation on Facebook Questionnaire (SPFBQ; Michikyan et al. 2015) was used to assess the extent to which people felt disingenuous about what they posted on social media. We adapted this measure to assess feelings of deception in the context of Instagram rather than Facebook. This subscale consists of four items (e.g., "I sometimes try to be someone other than my true self on Instagram), for which participants responded on a scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Scores were averaged, with a higher score indicating greater feelings of disingenuous self-presentation on Instagram. This was a reliable measure in both the original ($\alpha$ = .81) and the present study ($\alpha$ =.79). One item was inadvertently missing from our online survey (i.e., "I am a completely different person online than I am offline."), so our version of this measure consisted of three items.

### Depressive Symptoms

The eight-item version of the Patient Health Questionnaire (PHQ) was used to assess the experience of depressive symptoms during the past 2 weeks (e.g., "Feeling bad about yourself or that you are a failure or have let yourself or your family down"; Kroenke et al. 2009). Participants responded on a scale ranging from 1 (*not at all*) to 4 (*nearly every day*). Scale scores were calculated by averaging the item responses, and higher scores indicated higher levels of depressive symptoms. Internal consistency reliability has been shown to be high in previous research ($\alpha = .87$; Hwang et al. 2011) as well as in the present study ($\alpha = .90$).

## Results

Means, standard deviations, and ranges for the continuous measures used in our study are presented in Table 1. On average, participants reported relatively high levels of body surveillance, with a mean score significantly above the midpoint of the scale, $t(164) = 7.55$, $p < .001$, but they reported relatively low levels of photo manipulation. Participants also generally demonstrated low levels of feeling disingenuous about their self-presentation on Instagram. The mean score on the PHQ fell in the mildly depressed range (Kroenke et al. 2009), but there was a high standard deviation indicating wide variability among participants. The most common category for number of selfies taken before selecting one to post was 2–5 pictures ($n = 68$, 41%); 23.5% ($n = 39$) reported taking 6–10, 12.7% ($n = 21$) reported taking 11–15, 10.8% ($n = 18$) reported taking 1, 5.4% ($n = 9$) reported taking 16–20, and 4.8% ($n = 8$) reported taking more than 20. Three participants (1.8%) did not respond to this question.

The correlations among the measured variables are also presented in Table 1. The typical number of selfies taken was positively correlated with photo manipulation scores, body surveillance, and symptoms of depression, with moderate effect sizes. Photo manipulation behaviors were also moderately correlated with feelings of deception and body surveillance in the positive direction. Moderate positive correlations were also found between feelings of disingenuousness and body surveillance. Finally, body surveillance was positively correlated with depression symptom scores, with a moderate effect size. Selfie number and disingenuousness were not significantly correlated nor were photo manipulation and depressive symptoms.

To test our hypotheses, we analyzed how participants' selfie behaviors were related to self-objectification and symptoms of depression with mediational analyses using PROCESS (Hayes 2018; Model 6) to measure several direct and indirect effects simultaneously using 10,000 bootstrap samples. First, we examined whether the typical number of selfies taken before posting and feelings of deception mediated the relationship between body surveillance and depressive symptoms. This model explained 24% of the variance in depression symptom scores, $F(3, 157) = 15.73$, $p < .001$ (see Fig. 1 for path coefficients). Analyses of indirect effects showed that the relationship between body surveillance and symptoms of depression was not significantly mediated by both selfie number and feelings of deception; the completely standardized effect was −.001 ($SE = .008$, 95% CI [−.02, .01]). However, there were two statistically significant three-variable indirect effects. The relationship between body surveillance and symptoms of depression was significantly

**Table 1** Descriptive statistics and correlations among all measures

| Measures | *M* | *SD* | Actual Range | Possible Range | Correlations 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|
| 1. Body Surveillance | 3.98 | .81 | 1.75–5.75 | 1–6 | – | | | |
| 2. Photo Manipulation | 1.89 | .64 | 1–3.90 | 1–5 | .31*** | – | | |
| 3. Selfie Number | – | – | – | – | .30*** | .29*** | – | |
| 4. Disingenuousness on Instagram | 1.62 | .71 | 1.13–7 | 1–7 | .30*** | .28*** | .08 | – |
| 5. Depressive Symptoms | 8.52 | 6.07 | 0–24 | 0–24 | .37*** | .15 | .26** | .38*** |

*Note.* $n = 161$; selfie number was a categorical variable, so descriptive statistics are not reported

** $p < .01$. *** $p < .001$

mediated by feelings of disingenuousness, with a completely standardized effect of .09 (*SE* = .03, 95% CI [.03, .16]). Body surveillance also significantly predicted depressive symptoms mediated by the typical number of selfies the participants took before posting, with a completely standardized effect of .05 (*SE* = .03, 95% CI [.004, .10]).

We then tested a second model with photo manipulation and feelings of deception mediating the relationship between body surveillance and depressive symptoms. We found a statistically significant completely standardized indirect effect between body surveillance and depressive symptom scores of .02 (*SE* = .01) for this path (95% CI [.002, .05]), with both photo manipulation and feelings of disingenuousness serially mediating this relationship. Greater body surveillance was related to women manipulating their selfies more frequently. This, in turn, was related to a sense of presenting a false self on Instagram and, ultimately, more symptoms of depression (see Fig. 2 for path coefficients). As a whole, this model significantly accounted for 21% of the variability in participants' depressive symptom scores, $F(3, 159) = 15.24$, $p < .001$.

## Discussion

The goal of our study was to examine how self-objectification relates to behaviors in which one engages before posting selfies on Instagram, the degree to which such behaviors predict feeling deceptive about one's online self-presentation, and how selfie behaviors and perceptions of deception mediate the relationship between self-objectification and symptoms of depression. We ran two mediational analyses to explore these relationships. The first model analyzed how self-objectification related to depressive symptoms through taking multiple photos before selecting one to post (i.e., number of selfies) and feelings that posts on Instagram were deceptive. The second model analyzed this relationship with a second selfie behavior: photo manipulation.

We only found partial support for our first model. The hypothesized four-variable path was not statistically significant, but we did find two significant three-variable paths. In the first, the number of selfies taken before selecting one to post mediated the relationship between body surveillance, a behavioral manifestation of self-objectification, and depressive symptoms; number of selfies was not significantly related to feelings of deception. Additionally, the relationship between self-objectification and depressive symptoms was mediated by feeling disingenuous online. For our second model, we did find the hypothesized indirect four-variable path in which the relationship between body surveillance and symptoms of depression was mediated by photo-manipulation and feelings that one is presenting a disingenuous self on Instagram. In other words, participants who self-objectified

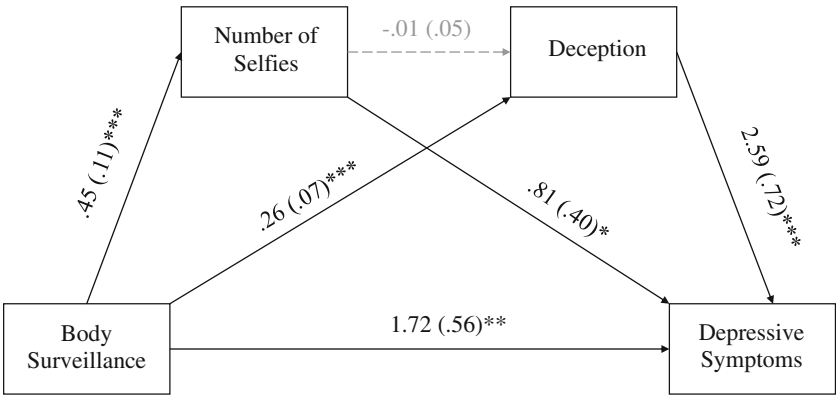


**Fig. 1** Path coefficients (and standard errors) showing the influence of body surveillance on depressive symptoms as mediated through number of selfies and deception. *$p < .05$. **$p < .01$. ***$p < .001$

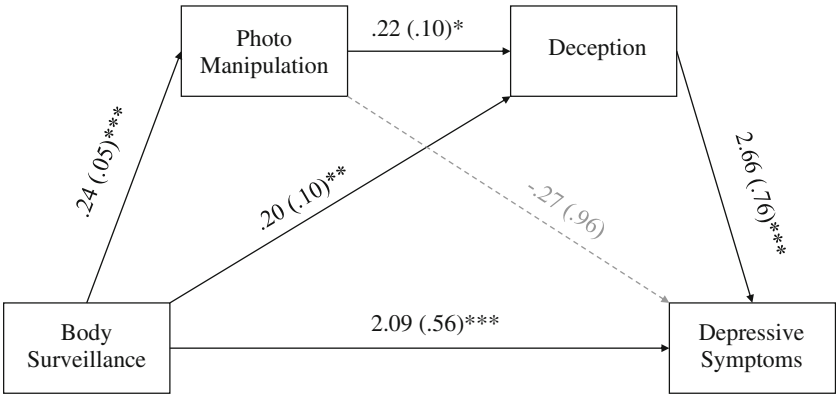


**Fig. 2** Path coefficients (and standard errors) showing the influence of body surveillance on depressive symptoms as mediated through photo manipulation and deception. *$p < .05$. **$p < .01$. ***$p < .001$

were more likely to manipulate their photos and feel that their presentation on Instagram was deceptive which was, in turn, related to feelings of depression. The main difference between Models 1 and 2 is that manipulating selfies before posting was viewed as a deceptive behavior, whereas taking multiple selfies before posting was not. It is notable that, even though number of selfies was not related to deception, it was still associated with higher depressive symptoms.

It has been well established that engaging in self-objectification is related to negative outcomes such as depression (Hanna et al. 2017; Jones and Griffiths 2015; Jong and Drummond 2013; Moradi and Huang 2008). Self-objectification has also been explored in the context of social media use. Some studies have viewed self-objectification as a negative outcome of social media use (Feltman and Szymanski 2018). In other studies, self-objectification has been seen as a mediator between social media use and negative outcomes, including depression (Hanna et al. 2017). Self-objectification, more recently, has been conceptualized as a predictor of selfie behaviors (Veldhuis et al. 2018). The current paper extends that work by confirming that self-objectification predicts behaviors in which women engage prior to using social media and demonstrating that these behaviors predict negative outcomes. Nevertheless, it is important to note that these relationships are likely bidirectional. Self-objectification may predispose women to engage in certain social media behaviors, but at the same time, these behaviors can enhance feelings of self-objectification and the likelihood of engaging in associated behaviors such as body surveillance. Editing photos and curating the selfies one shares may be manifestations of self-objectification, but doing these activities simultaneously encourages viewing the body as an object.

Previous literature has been conflicted about whether posting selfies is related to negative outcomes. Whereas one correlational study did not find a relationship between posting selfies and negative outcomes (Wang et al. 2017), an experimental study did find this relationship (Mills et al. 2018). Our study suggests that aspects of selfie posting, particularly selfie selecting and editing, are related to higher levels of depressive symptoms. In the Mills et al. (2018) experimental study, the ability to manipulate photos did not lesson negative effects, but it did not make things worse either. However, other studies have found that the tendency to regularly edit photos has been related to negative outcomes, such as body dissatisfaction and eating concerns (McLean et al. 2015). Additionally, photo editing has been linked to public self-consciousness, social comparison, and narcissism (Chae 2017; Kim and Chock 2017). Furthermore, caring a great deal about the photos that one posts has been linked to eating disorder symptomology (Cohen et al. 2018). The present study extends these negative outcomes to include depressive symptoms. Additionally, to our knowledge, no other study has specifically explored the phenomenon of taking multiple photos before selecting one to post, a behavior we also found related to symptoms of depression. However, these relationships are likely also bidirectional. Depression is related to body dissatisfaction (Goldfield et al. 2010), and negative feelings about one's body may be related to taking multiple pictures before posting or editing one's pictures. It is possible that women who are depressed and feel badly about their bodies engage in a negative feedback loop that exacerbates both body surveillance and depression.

These behaviors also may be influenced by the desire for positive social feedback and concern about number of "likes" or positive comments that one gets on social media (Ramsey and Horan 2017). Having higher self-esteem and greater purpose in life has been found to lessen the sensitivity to this type of social feedback (Burrow and Rainone 2017). However, our study suggests that getting "likes" based on edited photos may not have the desired effects if individuals feel as though the positive feedback is based on a false version of themselves.

Our study suggests that editing photos is related to presenting a false self on social media, and the sense that one presents a false self is related to depressive symptoms. Research suggests that social media users tend to present their happiest, most ideal versions of themselves, even when these versions do not align with one's actual self (Jordan et al. 2011; Kross

et al. 2013). Research has also shown that people are more likely to post pictures that fit cultural standards of beauty (Ramsey and Horan 2017). These pressures to portray one's best self and a self consistent with cultural ideals may lead people to display deceptive versions of themselves. There is little research that has documented the negative consequences of presenting online what one perceives as a false self. One study noted that those with low self-esteem are more likely to feel disingenuous online (Michikyan et al. 2015).

The present study raises further concerns about feeling disingenuous in online self-presentation because this perception was associated with increased depressive symptoms. Although we found that photo manipulation was related to increased feelings of disingenuousness, the same was not found for taking multiple selfies before posting. Because taking multiple photos and curating them to select the "best" picture to share with others can still involve presenting what one perceives to be one's true self, people may not view this behavior as a form of deception. Even though taking multiple selfies before posting was not related to deception, it still contributed to feelings of depression. This could be because when people take multiple selfies before posting, they are engaging in a behavioral form of self-surveillance, discarding all selfies deemed "not pretty enough" in order to portray their best self. This pressure to portray one's best self in each selfie may increase attentiveness to personal flaws. This process could then result in increased depressive symptoms.

## Limitations and Future Directions

The interpretation of our results do, however, need to be made in the context of some limitations. First, an item was missing from the deception measure. Given this oversight, we cannot be confident that our results are comparable to those from previous research using the full subscale. Nevertheless, our version of this measure was reliable and worked as a mediator in our model. Second, the sample for our study was demographically homogenous, consisting primarily of heterosexual, White, educated U.S. women. This makes it hard to generalize our findings to other populations, so more research is needed to explore to whom, specifically, our results apply. It would be particularly interesting to see if these patterns hold for people with other gender identities. Specifically, although men may experience fewer negative consequences as a result of self-objectification, it would be informative to investigate whether the same negative effects of these selfie behaviors are found in men.

It is also important to note that people may have under-reported their editing and curating behaviors. In previous research, a full 12% of photos posted under the #nofilter tag on Instagram did in fact include filters (Santarossa et al. 2017). Thus, participants may have actively under-reported their behaviors because they may have perceived their levels as socially undesirable. Future research could benefit from inclusion of a measure of social desirability to allow for better exploration of this possibility. It is also possible that participants could not accurately report their own habits. For example, it is unlikely that they systematically count the number of photos taken prior to selecting a selfie; it is also unlikely that it is the same every time a person takes a selfie. We attempted to account for this by measuring selfie number with ranges, but this may have blurred some of the distinctions between taking different numbers of selfies. For example, taking two pictures before posting may be different than taking five, although both were within the same response option. In order to get a more accurate picture of how people use social media, future studies might attempt to have participants actively monitor their daily Instagram habits. Additionally, future research would benefit from the inclusion of an attention check within the survey in order to assess patterns of response bias.

Our research can be extended by examining other negative outcomes such as anxiety, body shame, and compulsive behaviors (e.g., repeatedly checking social media notifications). Other mediators or moderators of the relationship among self-objectification, selfie behaviors, and negative outcomes may include appearance contingent self-esteem (Crocker and Wolfe 2001), social comparison, and public self-consciousness (Chae 2017; Feltman and Szymanski 2018). Researchers also may wish to examine other reasons why people curate and manipulate photos, perhaps using qualitative methods. One reason for these behaviors could be a spotlight effect in which people believe they always have an audience. Furthermore, the relationship between photo manipulation and feelings of deception, especially in relation to social feedback such as likes, comments, and reposts on social media merits additional exploration. Although we found a relationship between a sense of disingenuousness and symptoms of depression, we did not specifically explore whether likes and positive comments that are received from edited pictures are valued less than those received from unedited pictures. It may also be useful to examine whether other reasons that someone can feel disingenuous online, such as only positing about positive experiences or positive emotional states, have similar negative effects.

## Practice Implications

Our study suggests that self-objectification places women in a double bind when it comes to social media, a platform with a unique ability to present carefully tailored and curated presentations of the self. Although women may be motivated to curate and manipulate photos in order to present the best possible version of themselves, doing so may have negative consequences. This realization can help clinicians better counsel women about how their social media habits may be affecting their mental health. Our research could also help users of

Instagram who are not necessarily in counseling be more aware of these processes. Women would benefit from viewing their selfie taking and posting behavior in light of the pressures women face to both uphold unrealistic standards of beauty and to present an unrealistic version of themselves to others. In this way, a woman's personal struggle with feeling inadequate if she presents a realistic picture of herself, but disingenuous if she does not, can be seen as part of a larger sexist social context. Furthermore, our results suggest that women should be encouraged to accept their real selves, to be more honest with themselves about who they are, and to be more honest online. Emphasizing self-compassion may help women realize that they do not need to present an image of perfection in order to be accepted and loved (Neff 2011).

## Conclusions

Our research demonstrates that self-objectification may influence the behaviors in which women engage as part of their social media use. It also demonstrated that these behaviors can have negative psychological consequences. Past research has indicated that active use of social media can be positive and result in an increased sense of social bonding and community (Ellison et al. 2007). Posting pictures typically has been categorized as one way to engage actively with social media and has not been consistently associated with negative outcomes, as has been true of general social media use (Lin et al. 2016; Wang et al. 2017). However, we found that certain behaviors that come before the actual posting of photos may negate potential positive outcomes associated with active use. Overall, our findings show an increased urgency to pay attention to the behaviors in which women engage before posting on social media. Our research suggests that it may be important to portray one's true self online. One's first selfie may indeed be the best selfie.

**Compliance with Ethical Standards** The procedures used in collection of data conform to current APA ethical standards for the protection of human subjects. These procedures were approved by the institutional review board of the University of Mary Washington.

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