

Instagram use and self-objectification: The roles of internalization, comparison, appearance
commentary, and feminism

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Abstract

The current study examined potential mediators (i.e., internalization of cultural standards of beauty, engaging in upward and downward appearance comparisons, and receiving positive and negative appearance-related commentary) and moderators (i.e., feminist beliefs) of the links between the use of Instagram and self-objectification and body surveillance among 524 young adult undergraduate women from the Southeast United States. Results revealed that internalization of cultural standards of beauty and engaging in upward appearance comparisons uniquely mediated the Instagram usage and self-objectification/body surveillance links. Additionally, findings from the moderation analyses indicated that the direct effect of Instagram usage on body surveillance was contingent on feminist beliefs, such that this relationship was only significant among women with low feminist beliefs or at the mean of feminist beliefs. This finding suggests that feminist beliefs play a buffering or protective role whereas low feminist beliefs play an intensifying role. Implications and future directions are discussed.

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Chapter 1: Introduction

Objectification theory (Fredrickson & Roberts, 1997) provides a framework to understand the effects of being female in a society that sexually objectifies women's bodies. According to this theory, objectification takes place when an individual's body is regarded as a "separate entity" from that of the individual. In other words, objectification occurs any time a woman's body, body parts, or sexual functions are evaluated apart from the woman herself and treated as if they were representative of the woman as an individual.

The sexual objectification of women's bodies is quite prevalent in Western culture and may be enacted in a multitude of ways, including the objectifying gaze, or visual inspection of the body (Fredrickson & Roberts, 1997; Kaschak, 1992). Women directly and indirectly experience the objectifying gaze in social and interpersonal encounters, as well as a variety of visual media outlets (e.g., advertisements, television programs). Women also consistently receive unsolicited sexually evaluative commentary from individuals in social settings. According to objectification theory, these objectifying experiences might lead girls and women to begin internalizing a third party perspective on their physical selves. Essentially, they begin to regard themselves as objects to be looked at and evaluated; they begin to *self-objectify*. This self-objectification may then be behaviorally manifested through habitual body surveillance (e.g., regularly monitoring the appearance of one's body). Self-objectification and body surveillance have been consistently linked to increased body shame and appearance anxiety and decreased internal state awareness and ability to achieve peak motivational states (for a review, see Moradi & Huang, 2008). These damaging psychological corollaries have been shown to contribute to a number of negative mental health outcomes, including depression (Szymanski & Henning, 2007; Tiggemann & Williams, 2012), sexual dysfunction (Calogero & Thompson, 2009; Tiggemann &

Williams, 2012), and disordered eating (Calogero, Davis, & Thompson, 2005; Moradi, Dirks, & Matteson, 2005; Noll & Fredrickson, 1998).

Social Networking, Self-Objectification, and Body Surveillance

A considerable amount of research has provided evidence supporting the significant links between self-objectification and indices of poorer mental health. However, fewer studies have investigated the factors or experiences that might precede self-objectification and body surveillance. One of the first studies that attempted to address this gap in the literature indicated that anticipation of the male gaze corresponded with increased body shame and social physique anxiety in women (Calogero, 2004). These findings were consistent with objectification theory's postulate that it is the internalization of the male gaze specifically that has a potentially harmful effect on women. This study additionally drew attention to the notion that even seemingly harmless interactions in which a female encounters the male gaze may have negative effects. More recent investigations have explored and supported an empirical link between interpersonal experiences of sexual objectification (body evaluation and unwanted sexual advances) and self-objectification/body surveillance (Carr & Szymanski, 2011; Kozee, Tylka, Augustus-Horvath, & Denchik, 2007; Szymanski & Feltman, 2014, 2015). Taken together, these findings have begun to highlight what types of situations and experiences may predict self-objectification.

One specific social experience that may be linked to self-objectification has recently garnered increasing empirical attention: the use of social networking. By 2018, it is estimated that there will be approximately 2.67 billion active social networking users worldwide (Statista, 2017). Globally, internet users are spending approximately 1.97 hours per day on social networking sites, with individuals 16-24 years of age spending 2.68 hours on these sites (GlobalWebIndex, 2015, 2016). Due to its rapid growth and exceptional reach, social networking

sites have become an integral part of many people's daily lives and a standard method of managing and constructing one's self-presentation. Many users choose to construct their online personas through photo selection on their profiles (Pempek, Yermolayeva, & Calvert, 2009; Salimkhan, Manago, & Greenfield, 2009; Siibak, 2009; Strano, 2008). These photos are not chosen at random; female users wish to present themselves as "affiliative and attractive" and have been shown to regard presenting aesthetically pleasing photographs (e.g., photos in which they themselves looked attractive, wore pleasing attire, posed in a beautiful setting) as more important than male users (Manago, Graham, & Greenfield, 2008; Siibak, 2009). Female users additionally appear to display more photos compared to male users (Lenhart & Madden, 2007; Pempek et al., 2009). College-aged social networking users appear to display photos that are more likely to be met with social approval (Siibak, 2009; Strano, 2008, Zhao, Grasmuck, & Martin, 2008). Evaluative photo commentary made public by social networking friends is one way this social approval (or disapproval) may be expressed online (Manago et al., 2008; Salimkhan et al., 2009). This amplified interest in visual impression management on social networking sites paired with increased opportunity to receive appearance evaluation has generated considerable empirical interest in social networking sites as a possible new arena in which sexual objectification and associated objectification theory variables have the potential to occur.

Tiggemann and Miller (2010) conducted one of the first studies attempting to identify a relationship between females' social networking use and body-related concerns. Results indicated that more time spent on social networking sites was related to greater drive for thinness in adolescent girls. Further, those participants who spent more time on Facebook specifically displayed higher rates of drive for thinness and weight dissatisfaction. Time spent on other sites

(e.g., Google) had no relation to body image concerns. A follow-up study examining similar variables in a population of preteen girls found positive correlations between overall time spent online and internalization of the thin ideal, drive for thinness, and body surveillance.

Additionally, girls who had a Facebook profile spent approximately 1.5 hours per day on the site and scored significantly higher on measures of body image concerns when compared to non-users (Tiggemann & Slater, 2013).

Vandernbosch and Eggermoot (2012) performed one of the first analyses attempting to understand the direct and indirect relationships between various forms of media exposure (including social networking sites) and the internalization of beauty ideals, self-objectification, and body surveillance. Results revealed that increased time spent on social networking sites was associated with increased internalization of beauty ideals, which in turn related to higher rates of self-objectification. Using social networking sites more often also significantly and directly predicted increased body surveillance. Interestingly, none of the other more traditional forms of sexually objectifying media (e.g., sexually objectifying primetime television programs, music television, and fashion magazines) were directly associated with body surveillance. This finding suggested that the visual attention one must direct toward one's own appearance and body while engaging with social media may trigger increased body surveillance. Subsequent studies have supported the direct link between time spent on social networking sites and body surveillance (Manago, Ward, Lemm, Reed, & Sembrook, 2015) and self-objectification (Fardouly, Diedrichs, Vartanian, & Halliwell, 2015a; Slater & Tiggemann, 2015).

A follow-up longitudinal study among a sample of adolescent girls and boys revealed that the consumption of sexualizing media (e.g., magazines, music entertainment television) was associated with internalization of appearance ideals. This internalization then seemed to

influence how adolescents used social networking sites, as they displayed an increased tendency to monitor attractive peers online. This appearance-focused social media use, specifically, was then found to increase self-objectification and body surveillance over time. Overall social networking use also significantly predicted self-objectification, but only for girls (Vandenbosch & Eggermont, 2016). A study exploring Facebook use additionally identified increased appearance focus and exposure (e.g., posting, viewing, or commenting on uploaded photographs) as a significant predictor of self-objectification among adolescent girls (Meier & Gray, 2014). These results indicate that image-based activities on social networking sites may be particularly problematic.

With these findings in mind, it is important to note that social networking activity increasingly appears to be based on visually presented stimuli. Although much of the literature has focused attention on Facebook use, other social networking sites are gaining popularity. It has been suggested that these specific sites could potentially have stronger effects on body image concerns due to their focus on image sharing (Fardouly & Vartanian, 2016). For example, the popular site Instagram is based solely on users sharing photographs or videos (frequently of themselves) and then communicating with online friends via photo/video commentary. Currently, Instagram has approximately 600 million active monthly users; approximately 80 million photographs are uploaded daily, collectively garnering an estimated 3.5 billion “likes” per day (Instagram, 2017). As a result of these predominantly image-based sites, our society has been given a new arena in which appearance evaluation, appearance comparison, and sexual objectification have the potential to occur. Additionally, the endorsement of photos as a valid means of expressing one’s identity and obtaining social approval may indicate an increased focus and value placed on one’s outside appearance when interacting on social networking sites.

Consequently, the chance of female users internalizing a third party perspective on their physical selves and regarding themselves as objects to be looked at and evaluated may be associated with increased use of social networking sites like Instagram. Additional research is needed to explore how the use of image-based social networking sites (e.g., Instagram) may relate to self-objectification and body surveillance. Furthermore, research is needed to identify specific variables that might mediate and moderate this relationship in order to better understand these links.

Potential Mediators

A variable that addresses “how” or “why” one variable might predict another is known as a mediator (Frazier, Tix, & Barron, 2004). Very little is currently known about the potential variables mediating the relationships between social networking use and self-objectification/body surveillance. The current study will propose five potential mediators of these links: (1) internalization of cultural standards of beauty, (2) upward appearance comparisons, (3) downward appearance comparisons, (4) receiving positive appearance-related commentary on social-networking sites, and (5) receiving negative appearance-related commentary on social-networking sites.

Internalization of cultural standards of beauty. Due to the objectifying nature of Western culture, objectification theory posits that women are socialized to internalize an observer’s perspective on their bodies (Fredrickson & Roberts, 1997; McKinley & Hyde, 1996). However, direct and indirect forms of sexual objectification may also result in the internalization of cultural standards of beauty (i.e., the recognition and acceptance of the predominant standards for physical attractiveness, appearance, and size; Heinberg, Thompson, & Stormer, 1995; Stice, 1994). The literature indicates that social networking users, especially females, stress the

importance of looking attractive in the photographs they choose to display on their online profiles, possibly due to the societal pressures already placed on women to adhere to strict and often unattainable ideals (Siibak, 2009). Given the number of photographs uploaded to social networking sites every day, paired with the finding that users tend to post pictures that adhere to cultural standards of beauty, it seems likely that the usage of sites like Instagram may contribute to internalization of cultural standards of beauty. Instagram use may also reinforce cultural standards of beauty directly when users observe conventionally attractive individuals receiving attention and positive commentary about their appearance. This increased internalization may then turn users' attention to their observable, physical features in an attempt to identify which traits will or will not be met with positive evaluations, which may in turn correspond with increased rates of self-objectification.

Past research has identified internalization of cultural standards of beauty as a mediating factor in the relationship between interpersonal forms of sexual objectification/exposure to traditional forms of sexually objectifying media (e.g., beauty magazines) and self-objectification (Moradi et al., 2005; Morry & Staska, 2001). More current research focused on social networking usage has found that internalization of cultural standards of beauty mediated the relationship between social networking site exposure (e.g., Facebook) and self-objectification as well (Vandernbosch & Eggermot, 2012). Passive Facebook use has also recently been shown to directly influence women internalizing beauty ideals (Strubel, Petrie, & Pookulangara, 2016). These findings are intriguing, but further investigation and replication is necessary at this time.

Appearance Comparison. The current literature suggests that social networking users construct their online identities to represent an idealized self (e.g., Manago et al., 2008; Siiback, 2009). Consequently, it has been suggested that the social comparisons young women might

make between themselves and idealized online self-presentations could be daunting to certain users who feel they cannot compete with such perfection (Manago et al., 2008). Furthermore, many Facebook users are unlikely to realistically assess how often their peers are actually engaging in impression management (i.e., choosing to post only the most flattering aspects of themselves) which is thought to result in upward social comparisons that can lead to lower self-esteem (Chou & Edge, 2012). Recent experimental evidence lends support to this notion. After viewing attractive profiles on a social networking site, college-aged women and men reported lower levels of satisfaction with their physical appearance (Haferkamp & Kramer, 2011). It seems that many social networking users are comparing their realistic, flawed selves to carefully crafted images posted by online friends, not realizing that these photos are sometimes just as edited and curated as those seen in fashion magazines.

If users are regularly engaging in these unrealistic social comparisons online, it seems likely that they might take an observer's perspective on themselves and their bodies or engage in body surveillance in order to see how they are "measuring up" to idealized images. Thus, it seems plausible that the links between social networking use and self-objectification and body surveillance may be mediated by engagement in social comparison. In fact, one recent study found a positive correlation between Facebook usage and self-objectification, with appearance comparison (particularly comparing one's appearance to peers) mediating this link (Fardouly & Vartanian, 2016). This finding suggests that engaging in social comparison, and specifically appearance comparison, might be an essential component in the relationship between social media use and self-objectification and deserves further empirical attention.

Appearance-Related Commentary on Social Networking Sites. Appearance-related commentary (i.e., comments made on a user's uploaded photograph related to her physical

attributes) is also an additional variable gaining empirical attention as a possible predictor of self-objectification and body surveillance. Due to the fact that Instagram is a visually-based social networking site, users will frequently post photographs of themselves (e.g., “selfies,” photos of the user engaging in various activities, photos of the user and their friends, family, or pets). These photographs often elicit photo comments from the user’s “followers,” sometimes including evaluative remarks on the individual’s appearance. Thus, the more an Instagram user engages with the site, the more exposure he or she may have to appearance-related commentary. Both positive and negative online appearance commentary have been shown to be associated with higher rates of self-objectification in young adult women (Calogero, Herbozo, & Thompson, 2009). A recent study with female adolescents revealed similar significant links between both types of commentary and body surveillance, but only positive appearance commentary related to self-objectification in this sample (Slater & Tiggemann, 2015). Although this may seem counterintuitive, even positive appearance commentary focuses a female’s attention away from how she feels and onto how she looks. Given the prevalence and frequency of appearance-based commentary made on social networking sites, it seems likely that Instagram usage will be related to more commentary about someone’s physical traits which in turn will be related to higher rates of self-objectification and body surveillance. The potential mediating role that online appearance-related commentary (both positive and negative) may play in the relationship between social networking use and self-objectification/body surveillance could provide increased understanding of these links, but has not yet been tested.

The Potential Moderating Role of Feminist Beliefs

Predictors of self-objectification and body surveillance, along with potential factors mediating the relationship between social networking use and these variables, need to be

identified in order to better understand how exposure to social networking sites affect women. Just as important, however, is identifying possible protective and risk factors that may influence these effects. One possible variable that may moderate these links is feminism. Feminism is commonly regarded as a belief system and political movement based on the notion that women should possess the same political, economic, and social power as men; that oppressive systems attempting to keep women subjugated should be challenged; and that women's lack of power might impact their emotional well-being and other lived experiences (Downing & Roush, 1985; Henley, Meng, O'Brien, McCarthy, & Sockloskie, 1998; Shibley-Hyde, 2002). Feminism additionally rejects cultural standards of beauty and criticizes objectification practices and society's hyper-focus on women's bodies. As a result, feminist beliefs may strengthen a woman's ability to reject cultural standards of beauty and experiences of sexual objectification and maintain focus on inner personal experiences, as opposed to how she physically looks to outside observers.

A recent meta-analysis reviewing the literature on feminist-identified women and body image and eating concerns suggests that women who endorse a feminist identity are less likely to report body image disturbance and bulimic symptoms (Murnen & Smolak, 2009). Feminist beliefs, as assessed by the FemScore of the Feminist Perspectives Scale (FPS; Henley et al, 1998; calculated by summing the scores on the Liberal Feminist, Radical Feminist, Cultural Feminist, Socialist Feminist, and Woman of Color subscales), have additionally been shown to moderate the relationship between media awareness (knowledge of the thin-ideal as presented by the media) and internalization of the thin ideal (Myers & Crowther, 2007). In other words, in spite of all women being exposed to media endorsement and promotion of the thin ideal, women who strongly identify with feminist beliefs might be provided with a unique and critical

perspective on body-related messages, and consequently become less likely to internalize those ideals and standards.

Feminist beliefs (based on the FPS FemScore) have also been shown to buffer the behavioral manifestations of body dissatisfaction (e.g., body checking) in response to upward appearance-focused social comparisons (Myers, Ridolfi, Crowther, & Ciesla, 2012). Women possessing higher levels of feminist beliefs were shown to experience similar rates of body dissatisfaction as those with low levels of feminist beliefs when faced with upward social comparisons. However, they did not act on these feelings via body surveillance, thus demonstrating the possible protective role feminist beliefs may play in self-objectification and body surveillance related links.

Given the existing literature, it seems plausible that feminist beliefs could act as a protective factor in the links between Instagram use and self-objectification and body surveillance. That is, feminist beliefs could potentially buffer the effects of social networking use and self-objectification/body surveillance. Due to feminism's rejection of cultural standards of beauty and criticism of society's spotlight on women's bodies and appearance, feminist beliefs may also bolster a woman's ability to dismiss cultural standards of beauty and appearance-focused thoughts and behaviors - even when they are exposed to experiences in which these variables are especially salient. In other words, feminist beliefs may contribute to a woman's ability to maintain focus on her subjective inner experiences and thus buffer the possible links between social networking use and internalization of cultural standards of beauty and appearance comparison. In addition, a pattern of moderated mediation (Hayes, 2013) is likely to be present. That is, feminist beliefs might also qualify the indirect relations between Instagram usage and self-objectification and body surveillance via greater internalization of cultural standards of

beauty and higher rates of both upward and downward appearance comparison. However, research examining the moderating role of feminist beliefs between these variables does not currently exist.

The Current Study

We focused on young adult women for this study because self-objectification, the internalization of cultural standards of beauty, and online appearance concerns and comparisons are factors affecting females at higher rates than men, particularly for women who are of college age (e.g., Haferkamp & Kramer, 2011; Manago, Graham, & Greenfield, 2008; Siibak, 2009; Oehlof, Musher-Eizenman, Neufeld, & Hauser, 2009; Yean, Beanau, Dakanalis, & Hormes, 2013). As illustrated in Figure 1, our hypothesized conceptual model consists of examining five potential mediators in the relationship between Instagram usage and both self-objectification and body surveillance among undergraduate women. In addition, we examined feminist beliefs as a moderator in the (a) Instagram usage and both the self-objectification and body surveillance links, (b) Instagram usage and both the internalization of cultural standards of beauty and rates of upward and downward appearance comparison links, and (c) indirect relations between Instagram usage and self-objectification and body surveillance (see Figure 2). Our specific hypotheses were:

- 1) Internalization of cultural standards of beauty, engaging in upward and downward appearance comparisons, and both positive and negative appearance-related commentary received via Instagram would mediate the relations between Instagram usage and self-objectification and body surveillance. That is, the data would be consistent with the notion that increased Instagram usage would be associated with greater internalization of cultural standards of beauty, higher rates of appearance comparison, receiving more

positive appearance related commentary, and receiving more negative appearance related commentary which in turn would be related to more self-objectification and body surveillance (see Figure 1).

2) Feminist beliefs would moderate the direct relation between Instagram usage and self-objectification and body surveillance. Specifically, the relation would be weaker when feminist beliefs are high and stronger when feminist beliefs are low.

3) Feminist beliefs would moderate the relation between Instagram usage and both internalization of cultural standards of beauty and rates of upward and downward appearance comparison. Specifically, the relations would be weaker when feminist beliefs are high and stronger when feminist beliefs are low.

4) Feminist beliefs would moderate the indirect/mediated relations between Instagram usage and self-objectification and body surveillance. Specifically, the indirect relations would be weaker when feminist beliefs are high and stronger when feminist beliefs are low (see Figure 2).

Chapter 2: Method

Participants

The initial sample comprised of 561 participants who completed an online survey. Five self-identified men, two participants under 18 years old, two participants over 35 years old, one participant who entered an impossible weight (i.e., 10 pounds), 22 participants who did not have an Instagram account, four participants who left at least one measure completely blank, and one who left more than 20% missing on at least one of the independent, mediator, and/or moderator variables measures were eliminated from the dataset, which resulted in a final sample of 524 participants. Our sample size met Weston and Gore's (2006) recommendation for a minimum of 200 participants for path/mediation analysis and 10-20 observations per estimated parameter. For the moderator analyses, Aiken and West (1991; p. 164, Table 8.5) reported sample power analyses suggesting that when moderator and predictor variables are measured with reliability of .80, variance accounted for by the main effects is .20, and inter-predictor correlations are around 0, sample sizes of 59, 122, and 841 are needed to achieve statistical power of .80 in detecting an interaction for small, moderate, and large effect sizes, respectively. Thus, our anticipated sample size was large enough to detect a moderate to large effect.

Of the 524 young adult women in the final sample, 7% were African American, 5% Asian American/Pacific Islander, 83% White, 2% Latina, 2% Multiracial, and 1% Other. Participants ranged in age from 18 to 23 years ($M = 18.51$; $SD = .87$). With regard to sexual orientation, 96% self-identified as heterosexual, 1% as lesbian/gay, 2% as bisexual, and 1% as other. All participants were currently enrolled in a large Southern University, with 79% being 1st year undergraduates, 14% Sophomores, 4% Juniors, and 3% Seniors. Participants self-identified as being a member of the following social class categories: 5% wealthy, 58% upper-middle, 29% middle, 7% working, and 1% Poor. All participants had an Instagram account, with 63%

identifying it as their preferred social media site; 16% identified Twitter, 13% identified Facebook, 4% identified Tumblr, and 5% endorsed other. Percentages may not add up to 100% due to rounding.

Procedures

Participants were recruited from undergraduate psychology courses at a large Southern University. Participants completed an online web-based survey located on a secure fire wall protected server accessed via a hypertext link. Once respondents went to the first page and read the informed consent they indicated consent to take the survey by clicking a button. Then they were directed to the webpage containing the survey. The survey included a demographic questionnaire and the aforementioned measures. In order to reduce response biases, body surveillance and self-objectification were assessed prior to and independent of the predictor, mediator, and moderator variables. This created “psychological separation” of the variables as a means of reducing common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This strategy also served to decrease the chances that participants’ reports of their Instagram use could influence their answers to the self-objectification and body surveillance scales. Participants received course credit for their undergraduate course. We used a separate course credit database so there was no way to connect a person’s on-line course credit submission with her submitted survey.

Measures

Instagram Usage. Instagram usage was assessed by modifying a 16-item Facebook use measure that assesses general, active, and passive use (Fardouly et al., 2015a; Manago et al., 2015). The measure was modified by replacing “Facebook” with “Instagram,” as well as adjusting Facebook-specific behavior to comparable Instagram activities. Three items that did

not adequately translate to Instagram were not included resulting in a 13-item measure to assess Instagram use. Example items include, “How much time do you spend on Instagram on a typical day? (general use), “How frequently do you change your profile picture” (active use), and “How many distinct stories/updates in your feed do you read?” (passive use). Response options vary with one item being rated on a scale ranging from 1 = *5 minutes or less* to 13 = *10 hours or more*, another item rated on a scale ranging from 1 = *Not at all* to 7 = *Every 2 minutes*, and 8 items rated on a 6 point Likert scale ranging from 0 = *Never* to 5 = *Several times per day*. Mean scores were used, with higher scores indicating higher levels of Instagram use. Reported alphas ranged from .84 to .86. Alpha for the current sample was .79.

Self-Objectification. The Self-Objectification Questionnaire (SOQ; Noll & Fredrickson, 1998) was used to measure the extent to which participants view their bodies in appearance-based (objectified) terms rather than competence-based (non-objectified) terms. Participants were asked to rank 10 attributes in terms of their importance from 1 (*most important*) to 10 (*least important*). These attributes were separated into two categories: appearance-based (e.g., physical attractiveness, body measurements) and competence-based (e.g., physical fitness level, health). The scores for each category were then summed and competency items were subtracted from appearance items. Total scores range from -25 to +25, with higher scores signifying greater self-objectification. The SOQ has been shown to have strong construct validity (Noll & Fredrickson, 1998).

Body Surveillance. Body surveillance was measured by the Body Surveillance subscale of the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996), which includes eight items assessing how often an individual watches her appearance and experiences her body in terms of how it looks. Example items include, “I think more about how my body feels than

how my body looks,” and “During the day, I think about how I look many times.” Responses to items are presented on a 7-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. Although the body surveillance subscale has a “not applicable” option, it was not used in the current study to discourage non-responses. Mean scores were used with higher scores representing more body surveillance. Reported internal consistency ($\alpha = .89$) and 2-week test-retest reliability ($r = .79$) were good in a sample of undergraduate women. This scale has also demonstrated good validity, as evidenced by its negative correlation with body esteem and positive correlation with public self-consciousness in the same sample (McKinley & Hyde, 1996). Alpha for the current sample was .80.

Internalization of cultural standards of beauty. Internalization of cultural standards of beauty was assessed by the Internalization subscale of the Sociocultural Attitudes Toward Appearance Questionnaire (Heinberg et al., 1995), which includes eight items assessing the extent to which an individual accepts and internalizes societal standards of beauty. Some examples include, “Women who appear in TV programs and movies project the type of appearance that I see as my goal” and “I tend to compare my body to people in magazines and on TV.” Responses for each item are rated on a 5-point Likert scale ranging from 1 = *completely disagree* to 5 = *completely agree*, with higher scores indicating greater levels of internalization of dominant beauty standards. This subscale has demonstrated strong internal consistency ($\alpha = .88$) and validity among female undergraduate students, as evidenced by its positive correlations with body image concerns and disordered eating (Heinberg et al., 1995; Moradi & Huang, 2008). Alpha for the current sample was .90.

Appearance comparison. The Upward and Downward Appearance Comparison Scale (O’Brien, Caputi, Minto, Peoples, & Hooper, 2009) was used to measure the extent to which

participants compare their appearance to others. Respondents were asked to answer 18 items assessing their likelihood of engaging in appearance-related comparisons with individuals they recognize as better looking (e.g., “When I see good-looking people, I wonder how I compare to them”) and worse looking (e.g., “I compare myself to people less good looking than me”). Responses for each item are rated on a 5-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strong agree*. Mean scores were used, with higher scores indicating a greater tendency to engage in appearance comparisons. Reported alphas for the full-scale score were .91 and .92 using university samples (Fardouly et al., 2015a; 2015b). These scales have also demonstrated good validity, as evidenced by correlations with body image concerns, disordered eating, appearance evaluation, and no relationship with a non-appearance related measure (O’Brien et al., 2009; Fardouly et al., 2015b). For the current sample, alphas were .93 for upward and .94 for downward appearance comparisons.

Appearance-related commentary. Appearance-related commentary was assessed via a scale measuring how frequently participants receive both positive and negative appearance-related comments on Instagram. To date, there have been no validated scales that measure appearance-related commentary on social networking sites. Thus, in this study we used a 14-item author created scale to assess for both positive (7 items) and negative (7 items) appearance commentary. Responses for each item were rated on a 5-point Likert scale ranging from 1 = *never* to 5 = *almost always*. Mean scores were used with higher scores indicating more positive and negative appearance commentary on Instagram.

To establish structural validity for our author developed Social Networking Appearance-Related Commentary Scale (SNARCS), exploratory factor analyses using principal axis factoring (PAF) with varimax rotation were conducted. When oblique/promax rotation was

requested, the factor inter-correlation was very low (.03), thus orthogonal/varimax rotation was chosen (Tabachnick & Fidell, 2013). The chi-square test of sphericity was significant ($p < .001$) indicating that the data were appropriate for factor analysis (Kahn, 2006). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy yielded a value of .90, indicating that the sample size was large enough to evaluate the factor structure. Five criteria were to determine the number of factors to be extracted and rotated for the final solution: (a) parallel analysis, (b) Velicer's minimum average partial (MAP) test, (c) a minimum loading of three items on each factor, (d) percentage of total variance explained by each factor, and (e) interpretability of the solution, using a factor loading cutoff of .40 and no cross-loadings with less than .15 difference from an items' highest factor loading (Kahn, 2006; Tabachnick & Fidell, 2013; Worthington & Whittaker, 2006).

Results of the parallel analysis and Velicer's MAP test using O'Connor's (2000) programs for SPSS both indicated a two-factor solution that accounted for 70% of the variance. All Negative Appearance-Related Commentary items loaded on Factor 1 (eigenvalue = 5.42) and accounted for 39% of the variance. All Positive Appearance-Related Commentary items loaded on Factor 2 (eigenvalue = 4.34) and accounted for 31% of the variance.

Table 1 shows the items, factor loadings, communalities (h^2), means, and standard deviations for the SNARCS. Factor loadings ranged from .78 to .92 for the Negative Appearance-Related Commentary subscale and .58 to .87 for the Positive Appearance-Related Commentary subscale. Coefficient alphas were .95 for the Negative Appearance-Related Commentary subscale and .90 for the Positive Appearance-Related Commentary subscale.

Supporting construct and convergent validity, the Negative and Positive Appearance-Related Commentary subscales were each significantly ($p < .01$) positively correlated with

Herbozo and Thompson's (2006) Verbal Commentary on Physical Appearance Scale, including the full scale ($r_s = .22, .41$, respectively) and its three subscales: Positive General Appearance ($r_s = .23, .39$, respectively), Negative Weight and Shape ($r_s = .26, .34$, respectively), and Positive Weight and Shape ($r_s = .24, .39$, respectively). In addition, discriminate validity was supported by no significant relationships between the Negative and Positive Appearance-Related Commentary subscales and the Feminist Perspectives Scale femscore (FPS; Henley et al., 1998; $r_s = .05, .03, p_s > .01$).

Feminist Beliefs. The FPS (Henley et al., 1998) was used to measure feminist beliefs. This measure includes 78 items assessing a broad range of attitudes and behaviors related to feminism. Because we were interested in participants' beliefs rather than behaviors we did not include the 18-item feminist behavior subscale. For this study, the Femscore was used (a composite score which includes all the items from the Liberal, Radical, Socialist, Cultural, and Women of Color subscales). Mean scores were used, with higher scores representing more feminist beliefs. Sample items include, "The government is responsible for making sure that all women receive an equal chance at education and employment" and "The workplace is organized around men's physical, economic, and sexual oppression of women." Responses for each item were rated on a 7-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. Reported alpha for the FemScore was .91. The FemScore has also demonstrated good 2-week ($r = .91$) and 4-week ($r = .86$) test-retest reliability and validity, as indicated by significant correlations with self-reported feminism, political orientation, and completion of women's studies courses (Henley et al., 1998). Alpha for the current sample was .94.

Chapter 3: Results

Preliminary Analyses and Descriptive Data

Of the 521 participants who were included in the study, some had missing data. Thirty-two participants left the self-objectification measure blank, most likely because they did not know how to use the ranking function in the online survey. Because this measure was a dependent variable and these participants did fill out the rest of the survey measures we chose to keep them in the analyses to increase power. Thus, all analyses using self-objectification are based on a sample size of 492, while all other analyses are based on the full ($n = 524$) sample. Analysis of the patterns of missing data (not including the self-objectification items) revealed that 58% of the items were not missing data for any case, 86% of participants had no missing data, and no item had 1% or more of missing values. Given the very small amount of missing data, we used available case analysis procedures to address missing data points. When dealing with low-level item-level missingness, available case analysis is preferred over mean substitution because the latter can produce inflation of correlation coefficients among items (Parent, 2013).

Examination of absolute values for skewness and kurtosis for each variable indicated sufficient normality, except for negative appearance related commentary, which had large positive skewness and kurtosis. Negative appearance related commentary was subsequently transformed using the inverse and this resulted in acceptable values for skewness and kurtosis (Weston & Gore, 2006). Six multivariate outliers were observed (Mahalanobis distance $p < .001$). Each of these outliers did not display a particular pattern in their responses (e.g., selecting “1” for all item level responses). Thus, we retained these outliers because we could not see any justifiable reason to remove them. Furthermore, none of these cases had a Cook’s distance greater than 1, indicating that they did not have a significant bearing on the overall model (Field, 2013).

Descriptive statistics and bivariate correlations among all study variables are shown in Table 2. At the bivariate level, higher rates of Instagram use were significantly positively correlated with self-objectification ($r = .20$) and body surveillance ($r = .25$). Because body surveillance was related to body mass index (BMI), we included BMI as a covariate in our subsequent analyses predicting body surveillance. When controlling for BMI, a partial correlation between Instagram use and body surveillance was found ($r = .26$). Examination of multicollinearity indexes for all analyses indicated that multicollinearity was not a problem (i.e., variance inflation factors < 10 ; Field, 2013).

Mediation Analyses

We used the PROCESS SPSS macro (Hayes, 2013; Model 4) to test the mediation model described in Hypothesis 1. Based on Preacher and Hayes's (2008) suggestion, we used bootstrapping analyses with 1,000 bootstrapping resamples to produce 95% confidence intervals for the indirect effect, because it does not assume normality in the distribution of the mediated effect and can be applied with confidence to smaller samples (cf. Mallinckrodt, Abraham, Wei, & Russell, 2006; Preacher & Hayes, 2008). If the confidence interval does not contain zero, one can conclude that mediation is significant and meaningful (Preacher & Hayes, 2008). Two multiple mediation models were conducted, one predicting self-objectification and the other predicting body surveillance, after controlling for BMI.

The results of our first mediation model predicting self-objectification are shown in Figure 3. The test of mediation using bootstrapping analyses revealed that both internalization of cultural standards of beauty (mean indirect [unstandardized] effect = .92; $SE = .32$, 95% CI [.410, 1.72], $\beta = .04$) and engaging in upward appearance comparison (mean indirect [unstandardized] effect = 1.72; $SE = .44$, 95% CI [.943, 2.69], $\beta = .08$) mediated the Instagram

usage and self-objectification links. Contrary to our hypothesis, no mediated effects were found for engaging in downward appearance comparison (mean indirect [unstandardized] effect = $-.02$; $SE = .14$, 95% CI $[-.320, .254]$, $\beta = -.00$), receiving positive appearance-related commentary (mean indirect [unstandardized] effect = $.14$; $SE = .34$, 95% CI $[-.504, .811]$, $\beta = .01$), and receiving negative appearance-related commentary (mean indirect [unstandardized] effect = $-.02$; $SE = .05$, 95% CI $[-.291, .036]$, $\beta = -.00$). Finally, the variables in the model accounted for 25% of the variance in self-objectification scores.

The results of our second mediation model predicting body surveillance, while controlling for BMI, are shown in Figure 4. The test of mediation using bootstrapping analyses revealed that both internalization of cultural standards of beauty (mean indirect [unstandardized] effect = $.05$; $SE = .02$, 95% CI $[.025, .096]$, $\beta = .04$) and engaging in upward appearance comparison (mean indirect [unstandardized] effect = $.22$; $SE = .04$, 95% CI $[.145, .317]$, $\beta = .14$) mediated the Instagram usage and body surveillance links. Contrary to our hypothesis, no mediated effects were found for engaging in downward appearance comparison (mean indirect [unstandardized] effect = $-.00$; $SE = .01$, 95% CI $[-.021, .014]$, $\beta = -.00$), receiving positive appearance-related commentary (mean indirect [unstandardized] effect = $.01$; $SE = .02$, 95% CI $[-.037, .051]$, $\beta = .00$), and receiving negative appearance-related commentary (mean indirect [unstandardized] effect = $-.00$; $SE = .00$, 95% CI $[-.011, .005]$, $\beta = .00$). Finally, the variables in the model accounted for 48% of the variance in body surveillance scores.

Moderator and Moderated Mediation Analyses

We again used PROCESS (Model 8) to conduct hierarchical multiple regression analyses for the moderation models (hypotheses 2 and 3) and bootstrap analysis, using 1,000 bootstrap samples, for the moderated mediation model (hypothesis 4). Prior to analysis, predictor and

interaction measures were mean centered (i.e., put into deviation units by subtracting their sample means to produce revised sample means of zero).

For the moderation models, the predictor (Instagram usage) and the proposed moderator variables (feminist beliefs) were entered at Step 1. Next, the interaction terms (Instagram usage X feminist beliefs) were entered at Step 2. Evidence for a moderator effect is noted at Step 2 by a statistically significant increment in R^2 and beta weight. Again, two separate analyses/models were conducted, one predicting self-objectification and the other predicting body surveillance. For the moderated mediation models, Instagram usage was entered as the predictor variable; internalization of cultural standards of beauty and appearance comparison were entered simultaneously as multiple mediators; feminist beliefs was entered as the moderator variable; and self-objectification and body surveillance were entered as the criterion/outcome variables (see Figure 2).

Results of the moderated analyses are shown in Tables 3 and 4. Contrary to Hypothesis 2, results indicated that feminist beliefs did not moderate the direct relationship between Instagram usage and self-objectification. However, consistent with Hypothesis 2, feminist beliefs did moderate the Instagram usage and body surveillance link ($\beta = -.10$; $\Delta R^2 = .01$, significant $\Delta F p < .01$). To interpret this statistically significant moderation effect we used Hayes's (2013) SPSS PROCESS macro (Model 1). In examining the interaction, we controlled for the effects of BMI and the main effects not included in the significant interaction in the regression model. In addition, we used 1,000 bootstrap samples in order to compute 95% bias-corrected and accelerated confidence intervals. Results revealed that Instagram usage predicted body surveillance for women with low (+1 SD ; $B = .29$, $t = 3.94$, $p < .001$, 95% CI [.147, .439]) and

mean ($B = .13$, $t = 2.59$, $p < .01$, 95% CI [.033, .236]) levels of feminist beliefs, but not high (-1 SD; $B = -.025$; $t = -.36$, $p > .05$, 95% CI [-.163, .113]) levels (see Figure 5).

Contrary to Hypothesis 3, feminist beliefs did not moderate the links between Instagram usage and internalization of cultural standards of beauty or rates of upward and downward appearance comparison. Contrary to Hypothesis 4, results using 1,000 bootstrap samples for the moderated mediation analyses revealed no support for the associated conditional indirect effects of Instagram usage on self-objectification through internalization of cultural standards of beauty (Index of Moderation Mediation = .328, SE [boot] = .33, 95% CI [-.250, 1.15]), upward appearance comparison (Index of Moderation Mediation = .055, SE [boot] = .47, 95% CI [-.842, 1.03}), and downward appearance comparison (Index of Moderation Mediation = -.007, SE [boot] = .08, 95% CI [-.224, .118]). Similarly, results revealed no support for the associated conditional indirect effect of Instagram usage on body surveillance through internalization of cultural standards of beauty (Index of Moderation Mediation = .020, SE [boot] = .02, 95% CI [-.011, .064]), upward appearance comparison (Index of Moderation Mediation = -.024, SE [boot] = .057, 95% CI [-.013, .081]), and downward appearance comparison (Index of Moderation Mediation = -.000, SE [boot] = .00, 95% CI [-.012, .006]).

Chapter 4: Discussion

The current study extends previous research by exploring how and when the use of Instagram, an image-based social networking site, relates to self-objectification and body surveillance among young adult women. Our first hypothesis was partially supported. Internalization of cultural standards of beauty and engaging in upward appearance comparison mediated the relationship between Instagram usage and both body surveillance and self-objectification. That is, increased Instagram usage was shown to be associated with greater internalization of cultural standards of beauty and higher rates of upward appearance comparison, which in turn were related to increased levels of both self-objectification and body surveillance. These findings are consistent with past studies that have demonstrated the mediating roles that internalization and upward appearance comparison play in the relations between Facebook and self-objectification/body surveillance (Vandernbosch & Eggermoot, 2012; Fardouly & Vartanian, 2015), while extending it to the image-based social networking site, Instagram. Additionally, these results further illuminate how one's contact with the idealized images found on social media sites may relate to women internalizing messages about how they should look and making comparisons between themselves and images that perpetuate cultural standards of beauty. Further, it seems that these online experiences could be dictating how women view and monitor their bodies.

Contrary to our hypothesis, engaging in downward appearance comparison did not mediate the relationship between Instagram usage and self-objectification or body surveillance. This result extends previous research and provides evidence that engaging in upward appearance comparison is what specifically relates to adopting an observer's perspective on one's body. It is possible that engaging in downward appearance comparisons simply does not activate the appearance anxiety and body shame so often associated with self-objectification and body

surveillance (for a review, see Moradi & Huang, 2008). Additionally, if women are making downward appearance comparisons, they may feel more positively about the way they look. Consequently, they may spend less time thinking about and examining their bodies due to the assessment that they are more successfully living up to societal standards of attractiveness.

Although receiving positive appearance commentary was positively associated with Instagram use, it was not related to self-objectification or body surveillance, and did not mediate the links between Instagram usage and these two outcomes. This finding was unexpected given past research that has supported the link between online appearance commentary and higher rates of self-objectification in young adult women (Calogero et al., 2009; Slater & Tiggemann, 2015). With regard to receiving positive appearance commentary, it is possible that similar processes to that of making downward appearance commentary are present. That is, receiving positive appearance commentary may not elicit appearance anxiety and body shame while simultaneously contributing to positive assessments and possibly increased confidence about one's body and attractiveness. Thus, these individuals may spend less time focusing and fixating on their bodies and how they appear to others. Additionally, receiving negative appearance commentary was not related to Instagram use, self-objectification or body surveillance, and did not mediate the links between Instagram usage and self-objectification or body surveillance. When examining Table 1, it appears that most participants never received negative appearance commentary in the first place. Therefore, it may be that negative appearance commentary is not really an issue when using Instagram or that the restricted range of scores underestimated the relations among variables theoretically linked to this construct.

Partially supporting Hypothesis 2, results from the moderation analyses indicated that the direct effect of Instagram usage on body surveillance was contingent on feminist beliefs, such

that this relationship was only significant among women with low feminist beliefs or at the mean of feminist beliefs. This finding suggests that feminist beliefs play a buffering or protective role; whereas, low feminist beliefs play an intensifying role. This finding is consistent with past research demonstrating that when women were faced with upward social comparisons, only those who possessed lower levels of feminist beliefs engaged in higher rates of body checking (Myers et al. 2012). Feminism offers women alternative ways to view the messages our culture sends about beauty, which in turn allows women the ability to reframe the negative thoughts they might have about their bodies (Rubin, Nemeroff, & Russo, 2004). With regard to the current study, it is possible that feminist beliefs provided women with the tools necessary to identify and challenge their internalized messages about beauty, as well as their thoughts about how they “measure up” to women on Instagram, enough to buffer some of the maladaptive behavioral consequences that so often accompany these thoughts (i.e., body surveillance).

Contrary to Hypothesis 2, feminist beliefs did not moderate the relationship between Instagram usage and self-objectification. This result was unexpected, as feminist beliefs significantly moderated the link between Instagram usage and body surveillance. However, given that self-objectification is a cognitive process and body surveillance is more of a behavioral process, it is possible that feminist beliefs only protect individuals from the more behavioral manifestations of body image concerns. Consistent with this idea, past research has shown that upon making upward appearance comparisons, women experienced greater body dissatisfaction regardless of level of feminist beliefs (Myers et al., 2012). Additionally, although feminism has been shown to increase women’s abilities to recognize and contest cultural messages about how their bodies should look, this knowledge has not been shown to completely

inhibit negative appearance-based judgments or encourage a more radical shift in the cognitive ways women regard their physical selves (Rubin et al., 2004).

Contrary to hypotheses 3 and 4, feminist beliefs did not moderate the direct relationship between Instagram usage and internalization of cultural standards of beauty, rates of upward appearance comparison, rates of downward comparison, and accordingly, did not moderate any of the associated conditional indirect effects in predicting both self-objectification and body surveillance. Again, it is possible that feminist beliefs only act as a protective factor against the more behavioral displays associated with body image disturbance. Unfortunately, exposure to idealized images is extremely pervasive in our culture. Feminism does offer a way to cope with and question these images, but is not enough to counteract these ever-present aesthetic standards from becoming internalized, informing women's concepts of beauty, and making appearance-based comparisons (Rubin et al., 2004). Additionally, past research has shown that feminist beliefs do not moderate the links between social influence and the internalization of the thin ideal (Myers & Crowther, 2007). These results were theorized to be due to the fact that feminism focuses very little on how friends and family members might model and promote the thin-ideal, which makes it more difficult to critically examine these types of social messages (as opposed to media messages, which feminism focuses on quite strongly). Given the social nature of Instagram, it is possible that women – even those with high levels of feminist beliefs – do not assess the messages they receive on the site with the same criticism that they might apply to a fashion magazine or advertisement. Consequently, they might not be as protected from internalizing the messages that promote unrealistic beauty standards and encourage appearance-based judgments.

Limitations and Future Directions

One significant limitation of the current study includes the utilization of convenience sampling. Due to recruiting college students enrolled in psychology courses at a southern and predominately White university, our sample was limited by age and educational status. Additionally, there was a lack of diversity with regard to sexual orientation and racial/ethnic identity. Consequently, generalizability of our study is limited. Our theorized moderated mediation model should be tested with sexual minority women, women of color, non-college educated women, and older adult women to explore whether or not similar links exist among the variables.

Another limitation of our study was the use of self-report measures. It is possible that participants responded in socially desirable ways, which could have impacted or skewed our results. Additionally, it is possible that participants did not accurately remember rates of positive and negative photo commentary or had different definitions of what constitutes a positive or negative remark. Future studies may wish to employ experimental designs or incorporate personal access to participants' social media pages in order to obtain less subjective information.

The correlational and cross-sectional nature of our research design prohibits us from establishing direction and causality among the current study's constructs. As a result, alternate models must be considered. For example, it is possible that women with pre-existing self-objectification or body surveillance are more active on Instagram (i.e., post photographs) because they are more likely to regard themselves as objects to be looked at and evaluated. This pattern of behavior online may then reinforce an already internalized objectifying gaze and strengthen self-objectification and increase body surveillance. Similarly, women who already possess more intense internalization of cultural standards of beauty or more regularly engage in

appearance comparisons might demonstrate higher rates of Instagram use because it offers so many opportunities to observe and compare themselves with idealized images. Recent longitudinal research found that internalization and body surveillance prospectively predicted increased Facebook engagement (i.e., number of friends on Facebook) among a sample of adolescent girls (Tiggemann & Slater, 2017). However, another longitudinal study found that self-objectification and body surveillance did not significantly predict social networking use (i.e., how often they visit social networking sites) among a sample of adolescent boys and girls (Vandenbosch & Eggermont, 2016). Additional longitudinal and experimental research is needed to better detect and understand the links between these various factors and provide support for potential causal relationships between Instagram usage, internalization of cultural standards of beauty, engaging in appearance comparisons, self-objectification, and body surveillance.

Future research should also consider and explore other potential mediators (e.g., body shame, appearance anxiety) and moderators (e.g., resilience, traditional gender role adherence, attachment style) among the Instagram use and self-objectification/body surveillance links. Research is also needed to determine what types of intervention strategies (e.g., media literacy groups, mindfulness techniques) might reduce the strength of the relationships among these factors.

Practice Implications

Given self-objectification and body surveillance's significant links to poorer indices of mental health, the current study's results have applicable implications to counseling psychologists and other mental health professionals. Social networking sites are an extremely pervasive form of media, especially among young adults. Clinicians must remain aware of how engaging with social media might be affecting their clients and their psychosocial health. Our

findings revealed a significant direct link between Instagram usage and body surveillance among a population of young adult women. However, our moderation analysis indicated that high levels of feminist beliefs buffer this effect. While it is not necessary or ethical for psychologists to impel clients to adopt a feminist identity, it might be beneficial for clinicians to explore client empowerment, internalized sexism, and how these concepts might be impacting the clients' overall psychosocial health. Clinicians may also wish to provide clients with psychoeducation about how increased use of sites like Instagram may impact views women have of their bodies and open up a dialogue surrounding these issues.

Additionally, the current study found significant relationships between Instagram use and the internalization of cultural standards of beauty and engaging in upward appearance comparisons, which in turn related to higher rates of self-objectification and body surveillance. Based on these findings, it seems imperative that clinicians and clients be aware of what messages various forms of media (including social media) are sending and the impact they could be having on clients' evaluations of their bodies, appearance, and overall worth. Clinicians may wish to consider developing or adopting a media literacy group to educate clients on how best to analyze and evaluate what ideals various forms of media are perpetuating, as well as identify ways to protect oneself from internalizing problematic and harmful media messages.

In addition to these types of insight-building efforts, clinicians must also consider what additional coping skills may protect clients from continuing to internalize third-party perspectives on their physical selves. Engaging in activities related to mindfulness (e.g., practicing self-compassion, yoga) has been shown to be associated with lower body surveillance (Liss & Erchull, 2015) and self-objectification (Daubenmeir, 2005; Impett, Daubenmeir, & Hirschman, 2006). As such, clinicians may wish to encourage clients to engage in daily

mindfulness practices, specifically those that increase self-compassion, encourage present awareness, and ultimately, promote a stronger and more self-determined relationship with one's body.

Conclusion

Our study extends and supports objectification theory by demonstrating that use of an image based social networking site is linked to more self-objectification and body surveillance. In addition, it provides support for the explanatory roles of internalization of cultural standards of beauty and upward appearance comparisons in these links. Furthermore, it supports the role that feminist beliefs play in disrupting the Instagram use → body surveillance links. Our findings are some of the first to identify what specific variables mediate and moderate the links between social media usage and self-objectification and body surveillance in women and highlight the importance of developing a more thorough awareness of how this salient form of media may be impacting female users.

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Appendix

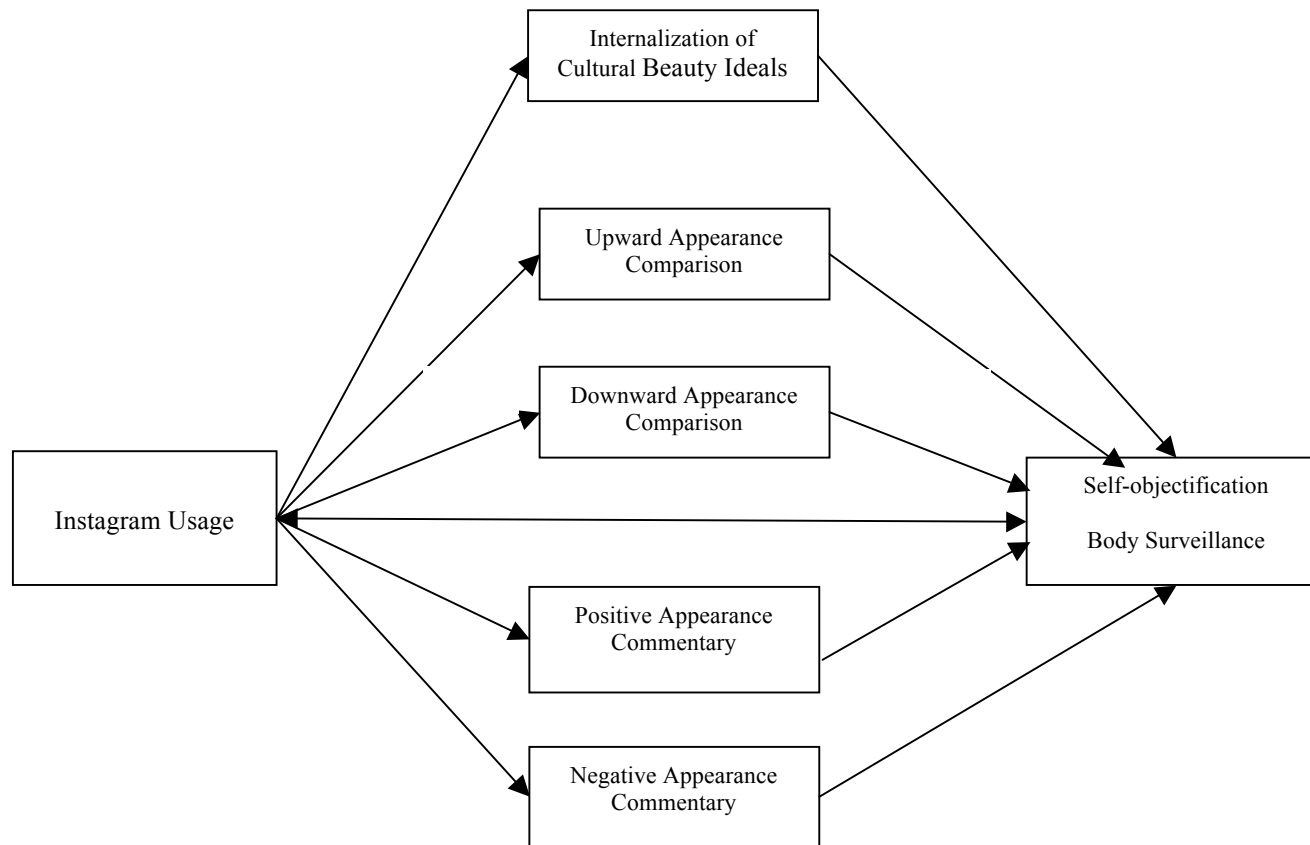


Figure 1. Hypothesized Mediation Model.

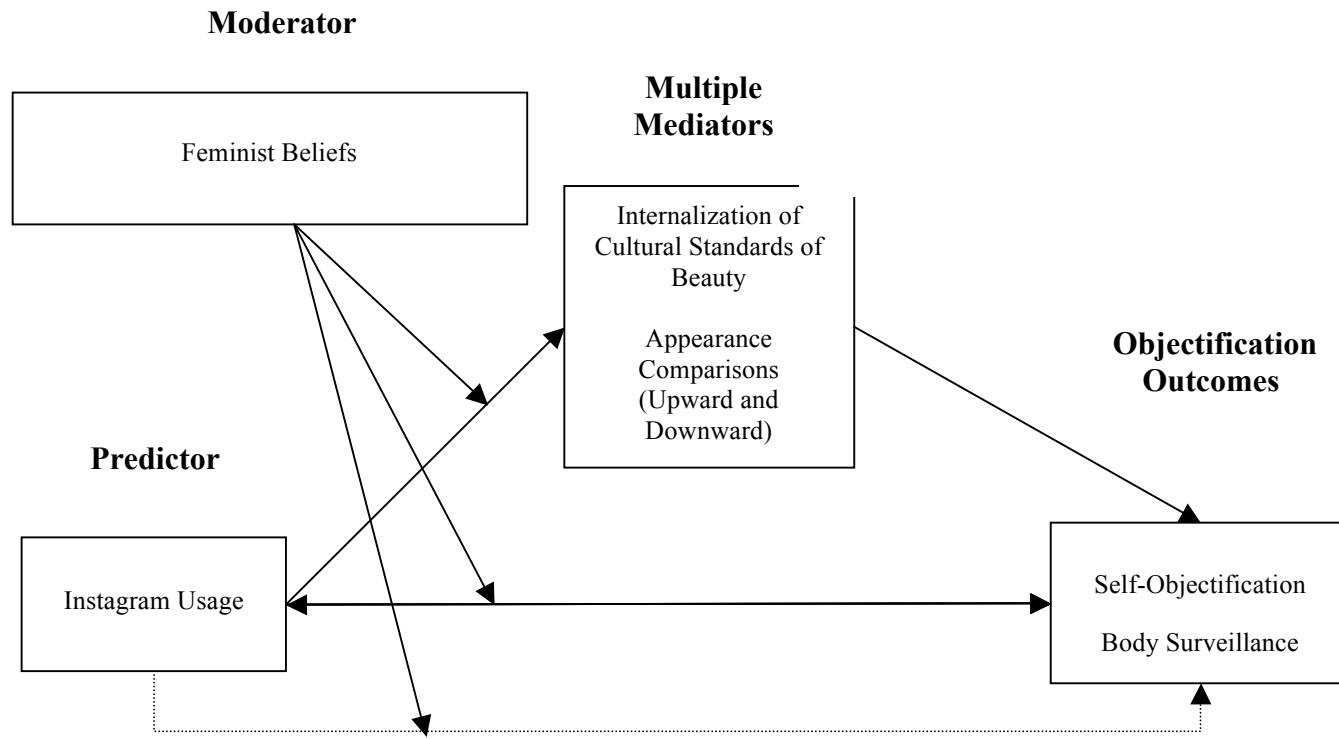


Figure 2. Hypothesized Moderated Mediation Model

Figure 4. Path model of direct and indirect relations of variables of interest predicting body surveillance. BMI = body mass index. Values reflect standardized coefficients; $n = 524$; * $p < .05$; ** $p < .01$.

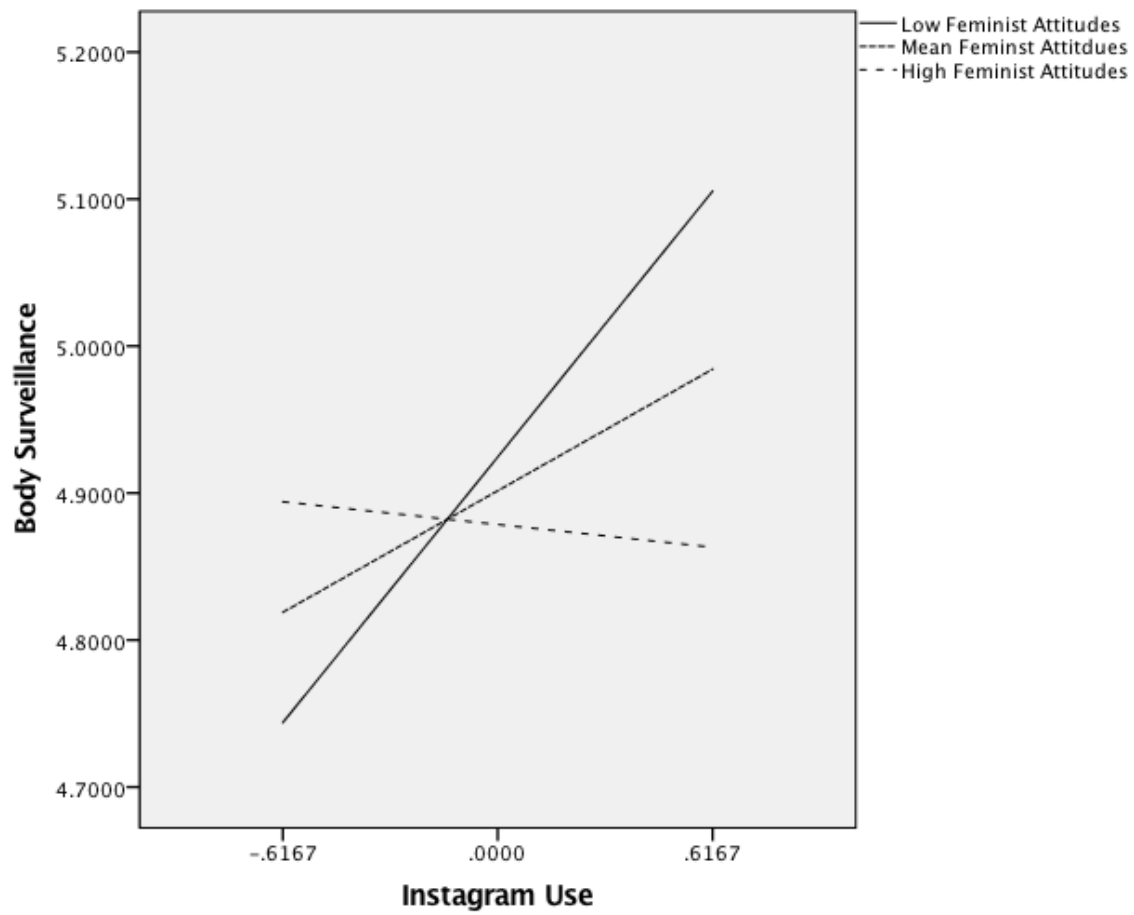


Figure 5. Interaction of Instagram use and feminist attitudes on body surveillance.

Table 1

Factor Analysis of the Social Networking Appearance-Related Commentary Scale

Item No.	Item	Loadings		h ²	Mean (SD)
		Factor 1	Factor 2		
12	How often do you receive negative about your physical features (e.g., “Bad hair day,” “You have a big nose,” “You have bad skin”) on Instagram?	.92	.01	.85	1.11 (.42)
11	How often do you receive comments like, “You’re ugly,” “You look gross,” “Hideous” on Instagram?	.88	.03	.77	1.11 (.45)
9	How often do other women post negative comments about how you look on Instagram?	.85	.04	.73	1.13 (.47)
10	How often do men post negative comments about how you look on Instagram?	.85	.06	.72	1.10 (.37)
14	How often do you receive negative comments about your style (e.g., “That outfit is awful,” “That top is not flattering,” “Your dress makes you look fat”) on Instagram?	.84	-.02	.71	1.12 (.46)
8	How often do people post negative comments about your appearance via Instagram?	.79	.08	.63	1.14 (.44)
13	How often do you receive negative comments about your body (e.g., “You need to hit the gym,” “You’re fat,” “Looks like you gained weight”) on Instagram?	.78	.02	.61	1.11 (.41)
4	How often do you receive comments like, “You look hot,” “You look beautiful,” “You look great” on Instagram?	-.04	.87	.76	3.00 (1.04)

Table 1 Continued

Item No.	Item	Loadings		h^2	Mean (<i>SD</i>)
		Factor 1	Factor 2		
1	How often do people post positive comments about your appearance via Instagram?	-.09	.83	.70	3.26 (.99)
2	How often do other women post positive comments about how you look on Instagram?	-.15	.83	.71	3.24 (1.00)
5	How often do you receive positive comments about your physical features (e.g., “Nice hair,” “Beautiful smile,” “Pretty eyes”) on Instagram?	.05	.78	.61	2.82 (1.05)
7	How often do you receive positive comments about your style (e.g., “Your outfit is so cute,” “That dress looks amazing on you,” “You look so good in those jeans”) on Instagram?	.04	.73	.54	2.82 (1.12)
6	How often do you receive positive comments about your body or body parts (e.g., “You’re in excellent shape,” “Nice legs,” “Your body is incredible”) on Instagram?	.19	.62	.42	2.08 (1.06)
3	How often do men post positive comments about how you look on Instagram?	.14	.58	.36	2.13 (.95)

Note. Factor 1 = Negative Appearance-Related Commentary; Factor 2 = Positive Appearance-Related Commentary. Each item was rated on a 5-point Likert scale from 1 (*Never*) to 5 (*Almost Always*).

Table 2

Means, Standard Deviations, and Correlations for All Study Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Instagram Use	2.17	.62	---									
2. Internalization of Cultural Standards of Beauty	3.02	.90	.22**	---								
3. Upward Appearance Comparison	3.62	.79	.26**	.64**	---							
4. Downward Appearance Comparison	2.82	.90	.16**	.28**	.33*	---						
5. Positive Appearance-Related Commentary	2.77	.81	.39**	.06	.02	.09*	---					
6. Negative Appearance-Related Commentary	.94	.15	.05	-.08	.09	.03	-.07	---				
7. Feminist Beliefs	4.03	.75	-.02	.13**	.09*	.03	.03	-.07	---			
8. Body Mass Index	23.40	4.37	-.02	.10*	.02	.13**	-.17**	-.00	.03	---		
9. Self-Objectification	-2.07	13.48	.20**	.42**	.46**	.15**	.06	-.02	.00	.05	---	
10. Body Surveillance	4.90	.97	.25**	.53**	.66**	.24**	.05	.03	.06	.13**	.53**	---

Note. * $p < .05$; ** $p < .01$

Table 3

Test of Feminist Beliefs as a Moderator of the Instagram Usage-Mediator and Instagram Usage-Self-Objectification Links

Predictor variable	<i>B</i>	β	<i>t</i>	<i>R</i> ²	<i>F</i>	<i>df</i>
Criterion: Internalization of Cultural Standards of Beauty						
Instagram Usage	.31	.21	4.80*	.06	10.75*	3, 488
Feminist Beliefs	.16	.13	2.98*			
Instagram Use X Feminist Beliefs	.10	.05	1.17			
Criterion: Upward Appearance Comparison						
Instagram Usage	.32	.25	5.75*	.07	12.04*	3, 488
Feminist Beliefs	.09	.08	1.90			
Instagram Use X Feminist Beliefs	.01	.01	.14			
Criterion: Downward Appearance Comparison						
Instagram Usage	.21	.15	3.24*	.02	3.89*	3, 488
Feminist Beliefs	.01	.01	.25			
Instagram Use X Feminist Beliefs	.08	.04	.39			
Criterion: Self-objectification						
Internalization of Cultural Standards of Beauty	3.22	.22	4.12*	.25	26.77*	6, 485
Upward Appearance Comparison	5.30	.31	5.83*			
Downward Appearance Comparison	-.09	-.01	-.14			
Instagram Use	1.78	.08	1.98*			
Feminist Beliefs	-.94	-.05	-1.28			
Instagram Use X Feminist Beliefs	-1.56	-.05	-1.33			

Note. *B*, β and *t* reflects values from the final regression equation; *n* = 492. * *p* < .05.

Table 4

Test of Feminist Beliefs as a Moderator of the Instagram Usage-Mediator and Instagram Usage-Body Surveillance Links

Predictor variable	<i>B</i>	β	<i>t</i>	<i>R</i> ²	<i>F</i>	<i>df</i>
Criterion: Internalization of Cultural Standards of Beauty						
BMI	.02	.10	2.31*	.08	10.71*	4, 519
Instagram Usage	.32	.22	5.14*			
Feminist Beliefs	.16	.14	3.17*			
Instagram Use X Feminist Beliefs	.11	.06	1.30			
Criterion: Upward Appearance Comparison						
BMI	.00	.03	.58	.08	10.66*	4, 519
Instagram Usage	.34	.26	6.18*			
Feminist Beliefs	.10	.09	2.12*			
Instagram Use X Feminist Beliefs	-.04	-.02	-.51			
Criterion: Downward Appearance Comparison						
BMI	.03	.13	2.98*	.04	5.88*	4, 519
Instagram Usage	.23	.16	3.67*			
Feminist Beliefs	.05	.04	.87			
Instagram Use X Feminist Beliefs	.07	.04	.80			
Criterion: Body Surveillance						
BMI	.02	.11	3.30*	.49	69.67*	7, 516
Internalization of Cultural Standards of Beauty	.19	.17	4.11*			
Upward Appearance Comparison	.65	.53	12.46*			

Table 4 Continued

Predictor variable	<i>B</i>	β	<i>t</i>	<i>R</i> ²	<i>F</i>	<i>df</i>
Downward Appearance Comparison	-.01	-.01	-.14			
Instagram Use	.13	.09	2.59*			
Feminist Beliefs	-.03	-.02	-.74			
Instagram Use X Feminist Beliefs	-.21	-.10	-3.15*			

Note. *B*, β and *t* reflects values from the final regression equation; BMI = body mass index; *n* = 524; * *p* < .05

Vita

Chandra Erin Feltman was born and raised in southern Illinois. She attended Southern Illinois University Edwardsville, where she graduated *summa cum laude* with a BS in Psychology. She then earned her MA in Clinical Psychology from Eastern Illinois University. In 2012, Chandra entered the Counseling Psychology PhD program at the University of Tennessee. Her research interests primarily focus on feminist issues with a specific emphasis on sexual objectification. Clinically, she is extremely passionate about working with survivors of sexual assault and domestic violence. Chandra will graduate in August 2018 after the completion of a year-long clinical internship at The University of Tennessee Student Counseling Center.