

Social Approval, Social Comparison, and Digital Alteration on Instagram as Predictors of Image Fixation

Thomas R. Wagner^{1*}, Kiera Wolkins², and Aubree A. Herman³

¹Department of Communication, Xavier University, Cincinnati, OH, 45207

²School of Communication, Loyola University of Chicago, Chicago, IL, 60610

³Department of Communication, University of Kentucky, Lexington, KY, 40506

*Corresponding Author: wagnerT@xavier.edu, 513 295 4830

This study explored social approval, social comparison, and digital alteration on Instagram as predictors of image fixation (IF). IF is the extent to which a person is overly focused on how others perceive them with an emphasis on physical appearance (Richmond & McCroskey, 2004). An in-person survey (n = 161) measured Instagram behaviors directly related to social approval, social comparison, and digital alteration were significant predictors of image fixation. Consistent with previous research, social comparison was the

strongest predictor. Time spent on Instagram, editing photos, and selecting an image were positively correlated with IF. Implications for this research include a greater understanding and a call for further implications of a preoccupation with one's image and the damaging effects of social media use established in previous research including the potential for body dysmorphia and depression.

Keywords: image fixation, Instagram, social comparison, digital alteration

Today's social media experience is filled with a need for approval and a subsequent desire to communicate a favorable image of oneself. Social comparison (Festinger, 1954) is the process that explains this phenomenon. Meeus et al. (2019) explained that adolescents use social media to curate a favorable image at an age when self-presentation is explored. As the engagement with these behaviors increase, so may a preoccupation with one's image. Twenty years ago, Richmond and Valencic (2000) proposed image fixation (IF) as a construct. IF is rooted in the theoretical framework of social comparison theory. Some items in the measure explore social comparison behaviors directly. For example, "I am constantly comparing my body and face to my peers" (Richmond & McCroskey, 2004). IF is relevant today because several unhealthy outcomes have been associated with social media use and IF may exacerbate

the damaging effects of social media, including self-esteem challenges (Meeus et al., 2019), depression (Boers et al., 2019), and body dissatisfaction (Tiggeman et al., 2018). The term, “fixation” implies trying to control one’s environment and projected self (Richmond & McCroskey, 2004). A persona created for social media is often an inaccurate reflection of the true self (Chua & Chang, 2016; Tiggeman, & Anderberg, 2019). The goal of the current study is to understand how Instagram related behaviors predict IF.

Social media users are driven to project a particular image of themselves and multiple motives drive the creation of this image. The uses and gratifications paradigm explains why people consume media to fulfill personal needs (Palmgreen & Rayburn, 1979). Users’ psychological needs are often emotional in nature, however, gratifications sought from media are always goal-oriented and utility-driven (Sundar & Limperos, 2013). Utility-driven motives include seeking a return on time invested in a social media site. Gratifications sought on social media include the drive for popularity and affection (Dhir et al., 2017). Sundar and Limperos (2013) explained, “This means triangulating the traditional emphasis on purely social and psychological needs with technology-driven needs” (p. 521). Needs on social media include approval sought through engaging in extrinsically motivated performative behaviors. The extrinsic reward of validation outweighs the intrinsic motivation to use social media just for fun. Validation is achieved through social comparison, digital alteration, and social approval, often in the form of likes. IF is manifested through this user experience.

LITERATURE REVIEW

IF and Social Media

IF is the extent to which a person is overly focused on how others perceive them with an emphasis on physical appearance (Richmond & McCroskey, 2004). Richmond and Valencic (2000) originally conceptualized IF and proposed that as one’s focus on self-image increases, the ability to have healthy relationships decreases. Wrench and Knapp (2008) reported a positive relationship between IF and depression. Boers et al. (2019) reported a positive relationship between social media use and depression. Hamid et al. (2017) also found a positive relationship with Instagram use and neuroticism. What people view on social media can impact their body image and feelings of self-worth (Lewallen, 2016). Social media is a ubiquitous part of life where users engage in strategic image

management. The strong desire to project a favorable image to peers can lead to purposefully altering one's profile into something inaccurate (DeAndrea & Walther, 2011). Instagram behaviors related to and IF include social approval through likes, social comparison of other users, and digital alteration to curate the most favorable image possible. The relationship between these variables and IF is the central focus of the current study.

Social Approval and Image Fixation

Social media users regularly evaluate their appearance (Butkowski et al., 2019) and value is determined by peer comparisons (Choukas-Bradley et al., 2019). Engagement on social media platforms has a significant negative influence on body image (Stronge et al., 2015). Richmond and McCroskey (2004) created the IF questionnaire to measure a preoccupation with appearance and several items in the measure reflect a negative body image such as, "several times each week, I feel I look fat" and "I berate myself about my general physical appearance." The ease with which Instagram users receive positive and negative feedback about their appearance, compounded with the need for approval are likely to be related to higher rates of IF. Instagram users seek validation through 'likes' or comments on a posted image (Tiggeman & Anderberg, 2019).

A need for social approval can develop into attention seeking behavior, (Sung et al., 2016) that pursues validation through "likes" and positive comments by peers (Butkowski et al., 2019). To achieve approval, people curate positive self-presentation on social media. This behavior originates in the offline tendency to present oneself favorably to new acquaintances (DeAndrea & Walther, 2011). The need for approval can lead users to "perform" self-presentation that receives positive feedback from peers. Meeus et al. (2019) explained this relationship with self-determination theory (Deci & Ryan, 1985) which identifies intrinsic and extrinsic motivations for human behavior. Social media users are extrinsically motivated to create a persona that is rewarded with approval. This reward changes motivation, from using social media for fun, to deliberately crafting posts to elicit the most positive responses. Self-esteem diminishes as one becomes reliant on the reward of approval (Meeus et al., 2019). This extrinsic motivation to gain approval, based on appearance, is consistent with IF.

H1: A need for approval on Instagram, manifested through a preoccupation with appearance, likes, and other users' comments, is positively correlated to IF.

Social Comparison and Dissatisfaction with Appearance

IF includes social comparison on physical attractiveness (Richmond & McCroskey, 2004) as reflected in these items from the IF measure, "I am constantly comparing my body and face to my peers" and the reverse coded item "I would not trade bodies with one of my friends." Frequent social comparison often leads to a dissatisfaction and fixation with one's image. Stronge et al. (2015) reported a negative relationship between Facebook use and body satisfaction, mediated by social comparison. Hendrickse et al. (2017) reported this same relationship on Instagram. In an experimental study, Paulson (2020) found that when men were exposed to idealized male images on Instagram the result was a significant reduction in appearance satisfaction. Body surveillance tendencies mediate the relationship between feedback investment and drive for thinness, as well as body dissatisfaction (Butkowski et al., 2019). Social media experiences facilitate greater social comparison than daily face-to-face life, through numerous opportunities to make self-presentational choices (Stronge et al., 2015).

H2: Social comparison behaviors on Instagram and image fixation will be positively correlated.

Digital Alteration

People modify their appearance with photo editing on social media to create an idealized image (Lamp et al., 2019; Shen et al., 2019). Gorgan et al. (2018) explained, "Women conformed to expected body norms by editing and manipulating their selfies to present what they felt was a socially acceptable image of their bodies and faces in the online world, constructing an ideal (manipulated) body online" (p. 29). Tiggeman and Zinoviev (2019) found higher facial dissatisfaction from women who viewed edited photos of other women. Paulson (2020), explained how edited photos impact men, "people may filter, manipulate, and edit their photographs to present their ideal self. This may contribute to the discrepancies felt by users when they compare their body or life to those posted on Instagram" (p. 77). Dissatisfaction with appearance is a primary aspect of IF. Repeated exposure to manipulated images on social media, resulting in increased facial and body dissatisfaction, is consistent IF. The IF questionnaire (Richmond et al., 2008)

contains physical alteration items including, “I would like to have cosmetic surgery” and “I change clothes constantly in order to get the “right” look.” IF on social media could result in photo editing rather than cosmetic surgery.

H3: Digital alteration will be positively correlated with IF.

RQ1: What is the relationship between time spent editing photos on Instagram and IF?

METHODS

Participants

Participants were 161 undergraduate students from a medium-sized Midwestern university. An Instagram account was required for participation. Age ranged from 18-37 ($M = 20.73$, $SD = 2.05$) with 103 females (64%) and 58 males. Participants self-identified as White (83%), African American (8%), Asian (3%), Hispanic (2%), Native American (1%), and multi-ethnic (3%).

Procedure

Participants voluntarily completed an Institutional Review Board approved paper survey during the last 15 minutes of class. Classes included communication, education, film, health administration, math, political science, and social work. Snacks were provided for all participants as a thank you.

Measures

Image Fixation Questionnaire

Richmond et al.’s (2008) 20-item Image Fixation Questionnaire (IFQ) utilized 7-point Likert scaling. The IFQ measures the extent to which a person is overly focused on how others perceive them with an emphasis on physical appearance preoccupation with personal appearance. The scale was reliable ($\alpha = .88$). Wrench and Knapp (2008) reported an almost identical reliability ($\alpha = .89$).

Appearance-Related Social Media Consciousness

Appearance-related social media consciousness (ASMC) measures one’s awareness of their appearance on social media (Choukas-Bradley et al., 2019). This 4-item measure uses 7-point Likert scaling and had excellent reliability ($\alpha = .92$). The ASMC was useful to test for concurrent validity with the IFQ and were strongly correlated ($r(161) = .65$, $p < .001$).

Social Approval

Previous research emphasized the primary form of seeking social validation on Instagram is through likes and positive comments by peers (Butkowski et al., 2019). Three questions measured social approval using 7-point Likert scaling: 1. I delete photos that do not get enough likes; 2. I check for likes constantly; and 3. I am very sensitive to other's comments on my posts about my general appearance. The scale had acceptable reliability ($\alpha = .71$).

Social Comparison

Body surveillance, feedback, and body dissatisfaction are associated with the social comparison (Butkowski et al., 2019; Hendrickse et al., 2017). Six questions measured social comparison using 7-point Likert scaling: 1. I am aware of which of my peers are more popular on social media; 2. I get jealous when my friends receive more "likes" on a photo than I do; 3. I will not take a photo unless I am satisfied with my appearance; 4. I will not post a photo unless I am satisfied with my appearance; 5. I compare my physical appearance to my friends; and 6. I am constantly comparing my pictures to those of my peers. The scale had good reliability ($\alpha = .80$).

Digital Alteration

Photo editing to create an idealized image on social media is common (Lamp et al., 2019; Shen et al., 2019). Users engage in this practice more often when dissatisfied with their appearance (Tiggeman & Zinoviev, 2019). Four questions measured digital alteration using 7-point Likert scaling: 1. I edit my photos to make my physical appearance more appealing; 2. I use angles to hide the parts of my body that I don't like; 3. I spend a significant amount of time editing my photos; and 4. I spend a significant amount of time picking the best photo to post. The scale had acceptable reliability ($\alpha = .76$). Additionally, participants reported minutes per day spent editing posts ($M = 4.91$, $SD = 7.03$) and selecting an image ($M = 12.45$, $SD = 12.69$).

Instagram Usage

Participants, on average, spent 73.3 minutes a day on Instagram ($SD = 66.77$) with a range from 2 to 600 minutes. Total social media time, averaged 172.24 minutes a day ($SD = 112.61$) with 3.57 average platforms ($SD = 1.25$). Participants averaged 6.45 years on Instagram ($SD = 1.81$) with an average starting age of 14.46 ($SD = 2.56$).

RESULTS

Regression analyses were used to test the Hypotheses. Social approval, social comparison, and digital alteration were tested as predictors of IF. Overall, Instagram behaviors significant predicted IF scores. The model explained a moderate portion of the variance in IF scores, $R^2 = .47$, $F(3, 157) = 46.86$, $p < .001$. Specifically, social comparison was the only significant predictor, $b = .62$, $t(161) = 6.31$, $p < .001$. Social approval and digital alteration were not statistically significant predictors in this model, yet, the variables were significantly correlated with each other (see Table 1). VIF scores and the level of intercorrelations did not indicate an issue with multicollinearity. Regression analyses were conducted again, this time removing social comparison. This two-predictor model was significant, $R^2 = .33$, $F(2, 158) = 40.37$, $p < .001$. Social approval and digital alteration were significant predictors of IF (social approval: $b = .38$, $t(161) = 4.67$, $p < .001$; digital alteration: $b = .26$, $t(161) = 3.19$, $p < .01$). Thus, in the first model, social comparison accounted for the greatest amount of the variance in IF scores and adding additional variables did not explain significantly more variance.

Table 1. Means, Standard Deviations, and Correlations

	<i>M</i>	<i>SD</i>	<i>VIF</i>	1	2	3	4	5	6	7
1. Image Fixation	3.25	.93								
2. ASMC	4.02	1.44	2.89	.65***						
3. Social Approval	3.13	1.52	2.55	.54***	.67***					
4. Social Comparison	3.95	1.28	2.86	.68***	.76***	.76***				
5. Digital Alteration	3.11	1.41	1.88	.49***	.66***	.61***	.66***			
6. Time on Instagram	73.03	66.77	1.12	.20**	.26***	.26***	.26***	.26***		
7. Time Editing Posts	4.91	7.03	1.97	.18**	.33***	.29***	.31***	.59***	.15*	
8. Time Selecting an Image	12.45	12.69	1.66	.28***	.44***	.34***	.38***	.45***	.25**	.55**

Note: VIF values are all well under 5 and thus multicollinearity of the predictors was not an issue with this data. (Belsley, Kuh, & Welsch, 1980). Time was operationalized as minutes per day.

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Hypothesis 1 predicted that approval on Instagram, manifested through a preoccupation with likes and other users' comments, would predict IF. Hypothesis 2 predicted a positive correlation between social comparison behaviors on Instagram and image fixation. Hypothesis 3 predicted a positive correlation between digital alteration and IF. Based on the results from correlation analysis (Table 1), all hypotheses were supported. The analysis of the data indicated significant, strong, positive correlations for Hypothesis 1 and 2 and a significant, moderate, positive correlation for Hypothesis 3.

Research Question 1 explored the relationship between time spent editing photos on Instagram and IF. Correlation analyses indicated small, significant, positive correlations (Table 1) for both minutes per day spent editing posts and selecting an image.

DISCUSSION

This study explored the relationship between social approval, social comparison, and digital alteration on Instagram and IF. The data substantiated that these behaviors were significantly correlated with IF and accounted for a large amount of the variance in IF. Additionally, time spent on Instagram, editing photos, and selecting photos was explored and these variables had a small correlation with IF.

There is a clear connection between IF and Instagram behaviors.

On Instagram, only the most exciting moments or best pictures of people's lives are deemed worthy of sharing (Tiggeman & Anderberg, 2019). Users carefully assemble an idealized self-presentation and control posts through editing software to manipulate their natural appearance. Digital alteration items relate to this behavior including editing photos to increase appeal and time spent editing photos. This increased ability to self-edit, and observe the altered images of others, leads people to hold themselves to higher physical standards (Tiggeman & Zinoviev, 2019). The rise of unrealistic appearance expectations set by influencers can damage one's self-image. If unable to reach the unrealistic levels of attractiveness constantly seen online, the burden imposed by social comparison can contribute to mental health issues (White et al., 2006; Boers et al., 2019). Wrench and Knapp (2008) reported a positive relationship between IF and depression. Boers et al. (2019) reported a positive relationship between social media use and depression in adolescents mediated by upward social comparison. The IF data was normally distributed. Thus, there is a range of the degree to which people experience IF on

Instagram. Of particular concern are people with higher ratings. Due to social comparison tendencies, those who are highly image fixated experience dissatisfaction with appearance and concerns with online approval. Behaviors associated with IF are related to intense social media use and, thus, IF is likely associated with depression in adolescents. IF may help explain the relationship between social media use and depression. Future research should explore this connection directly.

Limitations

Instagram users' ability to accurately rate their Instagram behaviors may be challenged by social desirability bias, thus impacting the accuracy of self-report data. DeAndrea and Walther (2011) explained, "the potential for people to explain their own online behavior in a decidedly different manner than their relational partner" (p. 821). Future research should explore a method similar to DeAndrea and Walter where ratings of one's Instagram behaviors are also made by peers. Also, some items from the IF may not translate well into a social media context. For example, the item "I am not sensitive to other people's comments about my general appearance" may not fit this context because peers normally do not post about each other's appearance unless the comment is positive. Additional variables need to be tested with IF including self-esteem and additional measures of social comparison orientation

Future Research

The goal of this study was achieved in understanding IF on social media. Social media researchers need to learn more about the specific behaviors and psychological correlates to IF. These behaviors can be damaging, and, upon identification, should be addressed. Participants in the current study, on average, began using Instagram at 14.46 years old. For teenagers, identification and understanding of IF on social media could help create a healthier self-image and reduce the risk of body dysmorphia. This is consistent with previous research findings that body dissatisfaction is higher for Facebook users compared to non-users (Stronge et al., 2015). Future research should test IF in multiple contexts and populations with relevant outcomes to determine the risks of maladjustment due to social media use. The items used to measure social comparison, social approval, and digital alteration were developed from themes from previous social media research findings. This study helped to bring those themes together in a comprehensive construct to

understand individual IF tendencies and potential related outcomes including body dysmorphia and depression.

References

- Baker, N., Ferszt, G., & Breines, J. G. (2019). A qualitative study exploring female college students' Instagram use and body image. *Cyberpsychology, Behavior, and Social Networking, 22*, 277-282. doi: 10.1089/cyber.2018.0420
- Belsley, D. A., Kuh, E., & Welsch, R. E. (1980). Regression diagnostics: Identifying influential data and sources of collinearity. Hoboken, New Jersey: Wiley. doi:10.1002/0471725153
- Boers, E., Afzali, M. H., Newton, N., & Conrod, P. (2019). Association of screen time and depression in adolescence. *JAMA Pediatr., 173*(9), 853-859. doi:10.1001/jamapediatrics.2019.4920
- Butkowski, C. P., Dixon, T. L., & Weeks, K. (2019). Body surveillance on Instagram: Examining the role of selfie feedback investment in young adult women's body image concerns. *Sex Roles: A Journal of Research, 81*(5-6), 385-397. doi: 10.1007/s11199-018-0993-6
- Choukas-Bradley, S., Nesi, J., Widman, L., Higgins, M. K. (2019). Camera-ready: Young women's appearance-related social media consciousness. *Psychology of Popular Media Culture, 8*, 473-481. doi: 10.1037/ppm/0000196
- Chua, T. H. H., & Chang, L. (2016). Follow me and like my beautiful selfies: Singapore teenage girls' engagement in self-presentation and peer comparison on social media. *Computers in Human Behavior, 55*, 190-197. doi: 10.1016/j.chb.2015.09.011
- DeAndrea, D. C., & Walther, J. B. (2011). Attributions for inconsistencies between online and offline self-presentations. *Communication Research, 38*(6), 805-825. doi: 10.1177/0093650210385340
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum. doi: 10.1007/978-1-4899-2271-7
- Dhir, A., Chen, G. M., Chen, S. (2017). Why do we tag photographs on Facebook? Proposing a new gratifications scale. *New Media & Society, 19*(4), 502-521. doi: 10.1177/1461444815611062
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*(2): 117-140.
- Gorgan, S., Rothery, L., Cole, J., & Hall, M. (2018). Posting selfies and body image in young adult women: The selfie paradox. *The Journal of Social Media in Society, 7*, 15-36.
- Hamid, N. A., Ishak, M. S., & Yazam, S. S. N. M. (2017). Facebook, YouTube and Instagram: Exploring their effects on undergraduate students' personality traits. *The Journal of Social Media in Society, 4*, 138-165.
- Hendrickse, J., Arpan, L.M., Clayton, R. B., & Ridgway, J. L. (2017). Instagram and college women's body image: Investigating the roles of appearance-related comparisons and intrasexual competition appearance-related comparisons and intrasexual competition. *Computers in Human Behavior, 74*, 92-100. doi: 10.1016/j.chnb.2017.04.027

- Lamp, S. J., Cugle, A., Silverman, A. L., Thomas, M. T., Liss, M., & Erchull, M. J. (2019). Picture perfect: The relationship between selfie behaviors, self-objectification, and depressive symptoms. *Sex Roles, 81*(11/12), 704-712. doi: 10.1007/s11199-019-01025-z
- Lewallen, J. (2016). When image isn't everything: The effects of Instagram frames on social comparison. *The Journal of Social Media in Society, 5*, 108-133.
- Meeus, A., Beullens, K., & Eggermont, S. (2019). Like me (please?): Connecting online self-presentation to pre- and early adolescents' self-esteem. *New Media & Society, 21*, 2386-2403. doi: 10.1177/1461448199847447
- Palmgreen, P., & Rayburn, J. D. (1979). Uses and gratifications and exposure to public television: A discrepancy approach. *Communication Research, 6*, 155-179. doi: 10.1177/009365027900600203
- Paulson, L. R. (2020). #gotmuscles? Instagram and body image in college men. *The Journal of Social Media in Society, 9*, 63-84.
- Richmond, V. P. & Valencic, K. M. (2000). *Image fixation measure*. [Paper presentation]. Eastern Communication Association Annual Convention 2000, Pittsburg, PA.
- Richmond, V. P., & McCroskey, J. C. (2004). *Nonverbal behavior in interpersonal relations* (5th Ed.). Boston, MA: Allyn & Bacon.
- Richmond, V. P., McCroskey, J. C., & Hickson, M. (2008). *Nonverbal behavior in interpersonal relations* (6th Ed.). Boston, MA: Allyn & Bacon.
- Shen, C., Kasra, M., Pan, W., Bassett, G. A., Malloch, Y., & O'Brien, J. F. (2019). Fake images: The effects of source, intermediary, and digital media literacy on contextual assessment of image credibility online. *New Media & Society, 21*(2), 438-463. doi:10.1177/1461444818799526
- Stronge, S., Greaves, L. M., Milojev, P., West-Newman, T., Barlow, F. K., Sibley, C.G. (2015). Facebook is linked to body dissatisfaction: Comparing users and non users. *Sex Roles: A Journal of Research, 73*(5-6), 200-213. doi: 10.1007/s11199-015-0517-6
- Sundar, S. S. & Limperos, A. M. (2013). Uses and grats 2.0: New gratifications for new media. *Journal of Broadcasting & Electronic Media, 57*(4), 504-525. doi: 10.1080/08838151.2013.845827
- Sung, Y., Lee, J. A., Kim, E., & Choi, S.M. (2016). Why we post selfies: Understanding motivations for posting pictures of oneself. *Personality and Individual Differences, 97*, 260-265. doi: 10.1016/j.paid.2016.03.032
- Tiggeman, M., & Anderberg, I. (2019). Social media is not real: The effect of 'Instagram vs reality' images on women's social comparison and body image. *New Media & Society, 1*-17. doi: 10.1177/1461444819888720
- Tiggeman, M., Hayden, S., Brown, Z., & Veldhuis, J. (2018). The effect of Instagram "likes" on women's social comparison and body dissatisfaction. *Elsevier, 28*, 90-97. doi: 10.1016/j.bodyim.2018.07.002
- Tiggeman, M., & Zinoviev, K. (2019) The effect of #enhancement-free Instagram images and hashtags on women's body image. *Body Image, 31*, 131-138. doi: 10.1016/j.bodyim.2019.09.004
- White, J. B., Langer, E. J., Yariv, L., & Welch, J. C. (2006). Frequent social comparisons and destructive emotions and behaviors: The dark side of social comparisons. *Journal of Adult Development, 13*(1), 36-44. doi: 10.1007/s10804-006-9005-0

Wrench, J. S. & Knapp, J. L. (2008). The effects of body image perceptions and sociocommunicative orientations on self-esteem, depression, and identification and involvement in the gay community. *Journal of Homosexuality*, 55, 471-503. doi: 10.1080/00918360802345289

Funding and Acknowledgements

The authors declare no funding sources or conflicts of interest.