

Size, Food, and Sensuality: Predictors of Network Engagement in Weight-Inclusive Instagram Communities

Frances J. Griffith*, Rachel A. Redondo, and Eileen Diggins

Department of Psychology, Bowling Green State University, Bowling Green, OH

*Corresponding Author: fgriffi@bgsu.edu, 419-581-9599

Weight-inclusive communities have flourished on social media where members combat conventional media representations of beauty and health that perpetuate weight bias and stigma. In the current study, we examined posted images and text, including image captions, within Instagram's weight-inclusive communities using image-based content analysis and text-based latent semantic analysis (LSA). Predictive modeling was also used to determine which weight-inclusive posts received more engagement from their online network, increasing these users' potential as community influencers and advocates. Posted images often showed fully clothed, higher-weight women and were lower in objectification than aspirational fitness images in previous social media studies. Post text

reflected themes of self-acceptance, celebrating food and eating, and the daily lives of higher-weight people. Almost every image category predicted variance in the composition of posts' text as measured by the LSA ordination. Whether an image contained food, exercise equipment, and people, especially higher-weight women, predicted its popularity among network members. The most popular images included higher-weight women in underwear or swimwear, raising questions about the interrelationship among body acceptance, objectification, and empowerment in weight-inclusive communities online.

Keywords: weight-inclusive, body positive, Instagram, social network engagement, content analysis, latent semantic analysis

Weight bias, or stigmatization and negative stereotypes based on body size, is prevalent in the US and perpetuated by the media and healthcare providers (Cohen & Shikora, 2020). Discrimination based on weight can lead to internalized stigma, depression, anxiety, and dysfunctional eating among higher-weight people (Cohen & Shikora, 2020). To counteract weight bias and discrimination, social media sites are continually growing as advocacy venues for people of higher weight and are important spaces for community-building among other marginalized groups (Lee & Cho, 2019; Oh et al., 2014). Despite this, social media use has also been linked to harmful social comparisons and body dissatisfaction (De Vries et al., 2016; Fardouly & Vartanian, 2016). The “fitspiration” (“fitness” and

“inspiration”) movement exemplifies these problematic trends with images glorifying thinness, high levels of exercise, and sexualization that can result in psychological distress and disordered eating (Raggatt et al., 2018). Given these potential negative effects of social media on body image, weight-inclusive communities promoting body positivity or body neutrality online are an important case of a marginalized group counteracting thin ideals promoted on social media.

Understanding predictors of network engagement with weight-inclusive social media posts could help identify features of posts and accounts with the potential to leverage advocacy efforts and offset predominant media ideals. The current study adds to the limited research on social network engagement with weight-inclusive posts on social media by examining content of weight-inclusive posts on Instagram, including imagery and text, and predictors of responses to these posts. Qualitative content analysis was used to characterize features of images in posts, and latent semantic analysis with hierarchical clustering was used to identify predominant themes in the text of image captions.

LITERATURE REVIEW

Social Media and Marginalized Communities

Social media enables members of marginalized communities to connect by decreasing the barriers of physical distance and social stigmatization. Over 75% of adults in the US use social media, most visiting them daily (Edison Research, 2019; Smith & Anderson, 2018). The photo-based platform Instagram claims one billion monthly users and 500 million daily users (Omnicores, 2019), among whom are 35% of US adults (Smith & Anderson, 2018). Across different sites, hashtags marking the content of a post, such as #bbw (big, beautiful woman), represent a decision on the user’s part to be searchable by that hashtag and potentially claim membership in an online community (Highfield & Leaver, 2014).

Members of marginalized communities can connect with one another and access social resources on social media. For example, people experiencing mental illness are using social media at rates approaching that of the general population, and their online social networks can provide shared coping strategies and treatment information, decreased isolation, and increased hope (Naslund et al., 2014; 2016). Among people with

physical disabilities, social media use may be associated with increased social support, predicting improved psychological disposition (Lee & Cho, 2019). In addition to people with mental health challenges, social media is important for the social networking of people marginalized due to race, education level (Gonzales, 2017), sexual orientation (Chong et al., 2015), and country of origin (Coddington & Mountz, 2014; Saha & Karpinski, 2016).

Beyond its facilitation of community connections among marginalized peoples, social media can also provide a platform for advocacy efforts within and outside of these online communities. Photo-based platforms like Instagram capitalize on the immediacy of camera phones, resulting in publicly shared images of everyday life, from outfit choices to daily meals (Feuston & Piper, 2019). This portrayal of banal, common activities and daily struggles on the part of marginalized groups in the US, such as people of higher weight, can challenge stigmatizing perceptions of abnormality or otherness. The particular social media format could influence the ways in which users can engage in advocacy and create new narratives about themselves and their communities online (Duguay, 2016). For instance, Instagram, with a tradition of users posting picturesque, filtered imagery, may encourage conformity to aesthetics or conventional imagery by advocates within marginalized communities, whereas video-based platforms like Vine may allow for more personal, narrative expression (Duguay, 2016).

Weight Inclusion on Social Media

Despite increased connectivity and advocacy for marginalized groups on social media sites, some research has consistently linked social media to body dissatisfaction in both adolescent boys and girls (De Vries et al., 2016; Fardouly & Vartanian, 2016). The format of Instagram and other photo-based platforms may result in some users, especially young women, comparing their appearance to others and attempting to conform to beauty standards in selfies (Baker et al., 2019). “Fitspiration” is an Instagram hashtag associated with idealized athletic body types (Simpson & Mazzeo, 2017). Although the fitspiration movement was created to promote health, it is still linked to the promotion of thinness (Baker et al., 2019; Boepple et al., 2016). Instagram fitspiration posts often feature sexually objectifying images, operationalized by reduced clothing and showing only part of people (Deighton-Smith & Bell, 2018). Boepple et al. (2016) found that 84.78% of

fitspiration websites contained sexually objectifying imagery and 33.33% had sexually objectifying text. Exposure to fitspiration images can result in decreased state body satisfaction and increased negative mood over time (Benton & Karazsia, 2015; Prichard et al., 2018; Robinson et al., 2017), higher risk for disordered eating and compulsive exercise (Holland & Tiggemann, 2017), and higher psychological distress than comparison groups (Raggatt et al., 2018).

In reaction to aspirational movements like fitspiration, weight-inclusive advocacy and the body positivity and body neutrality movements have also flourished on social media (Lewis et al., 2011). Members of weight-inclusive communities combat weight stigmatization through personal empowerment, advocacy for people of all sizes and weights, and new conceptualizations of fatness (Dickins et al., 2011). The body positive movement encourages people of higher weight to accept their bodies and their lifestyle without shame (Afful & Ricciardelli, 2015; Lewis et al., 2011). Furthermore, the weight-inclusive Health at Every Size® (HAES) movement has been linked with more improvements in physical and psychological health in higher-weight individuals than weight-loss promotion (Tylka et al., 2014). Webb et al. (2017) compared #fatspiration posts to #healthateverysize posts ($N = 400$), and found that both encouraged body acceptance, and this was even more pervasive in fatspiration content. Cohen et al. (2019) used qualitative coding to assess the image and text content of 640 posts from 32 popular body positive Instagram accounts. They found that images showed mostly women with a variety of body sizes, and that text themes related to positive body image were twice as prevalent (80.15%) as appearance-related themes (41.09%). In addition, dissenting comments from bystanders in the presence of weight-based cyberbullying may result in more positive comments and perceptions from other online community members (Anderson et al., 2014).

The Current Study

Despite these emergent findings on body positive social media posts and comments, little research has examined patterns of engagement of online communities with weight-inclusive posts. Also, only one existing study (Santarossa et al., 2016) was found that used quantitative text analyses to summarize text content of any body image-related posts. This research is important to determine the most popular and engaging advocacy initiatives in weight-inclusive communities that may most effectively combat weight bias

online. Using mixed methods of qualitative content analysis, quantitative text analysis, and predictive modeling, the current study examined predictors of network engagement in weight-inclusive Instagram communities and the content of these posts. Our research questions were:

- 1) What are the predominant themes in the images and text of weight-inclusive posts?
- 2) How does social network engagement with weight-inclusive posts, including likes and comments, vary as a function of imagery content?

Characterizing the content of engaging, popular weight-inclusive posts can inform online advocacy seeking to counteract the harmful effects of weight bias in popular media.

METHODS

Data Collection

We collected publicly accessible Instagram posts tagged #fatspiration ($N = 800$). The first group of posts dated from October 1, 2017, onward until 400 posts were accrued in midwinter 2018 and the second group of posts dated from April 1, 2018, onward until another 400 were accrued in midsummer 2018. These two collection periods captured the weeks leading up to winter and summer 2018, respectively, to capture posts from multiple clothing seasons. Posts with videos were excluded, and only the first of multiple images was included in analyses. The Institutional Review Board (IRB) of Bowling Green State University determined that the research study was exempt from review because all posts collected were public.

Data Analysis

To characterize predominant themes in the images and text of weight-inclusive posts, we used qualitative content analysis and quantitative latent semantic analysis (LSA). Then, we used predictive modeling to determine which features of posts resulted in the most engagement among online community members.

Fatspiration Images. Image coding categories were based on previous content analyses of fitspiration imagery (Boepple et al., 2016; Tiggemann & Zaccardo, 2018). We coded each image for the presence or absence of a person or people; exercise equipment, settings, or clothing; food or drinks; and words in or on images. General categories were

not mutually exclusive. If the image included a person, additional codes were assigned for: presenting gender (male, female, or nonbinary/undetermined), adiposity (thin, average weight, or higher-weight), body type (muscular or not), body proportion shown (less than 25%, 25-50%, or 50-100%), and clothing amount (fully covered, moderately covered, underwear/swimwear, or naked). Based on previous research (Baker et al., 2019; Boepple et al., 2016), clothing amount and body proportion shown were an operationalization of sexual objectification in imagery.

Posts were divided into three subsets and assigned to three coders. Each subset was subsequently passed to another coder to assess for rater biases. We performed pairwise correlation analyses on the codes between the two raters for each image and derived Cohen's kappa coefficients as an index of inter-rater reliability. We also compared subsets of posts by season using Chi-squared goodness of fit tests.

Fatspiration Text. We used latent semantic analysis (LSA; Wild, 2015) in the programming language R (R Core Team, 2013) to perform a singular value decomposition on the Instagram post authors' text captions. LSA ordines post documents and words into high-dimensional vector spaces based on their relatedness. We performed a hierarchical clustering analysis using the LSA ordination of words in posts to determine thematic word clusters frequently occurring together. We then read and reviewed posts containing thematic word groups, named these themes, and found the percentage of posts containing each theme. We also used multivariate correlation analyses to assess whether ordinated post text varied with image type (Oksanen et al., 2018).

Community Response. LSA and hierarchical clustering analysis were also used to classify themes in comments on weight-inclusive posts. Then, we used analysis of variance (ANOVA) to determine whether the number of "notes" (total likes plus comments) varied as a function of image content categories, both general and person-specific. Coded categories from the content analysis were entered into the linear model as predictors with the number of notes as the outcome variable.

Table 1
#Fatspiration Image Content

All Images (N= 770)			
	Count	%	Paired Kappa ^a
People	313	40.7	.96, .99, .99
Food	401	52.1	.91, .95, .95
Exercise	74	9.6	.81, .83, .95
Words	254	33.0	.77, .83, .93
Other	15	2.0	
Images with People (n = 313)			
Gender			.84, 1, 1
Female	265	84.7	
Male	43	13.7	
Nonbinary	5	1.6	
Adiposity			.73, .85, .87
Higher-weight	214	68.4	
Average	96	30.7	
Thin	3	1.0	
Body Type			.6, .71, .72
Not Muscular	271	86.6	
Muscular	42	13.4	
Body Proportion			.84, .85, .86
0-25%	49	15.7	
25-50%	69	22.0	
50-100%	195	62.3	
Clothing Amount			.47, .66, .81
Full	171	54.6	
Moderate	87	27.8	
Underwear	47	15.0	
Naked	8	2.6	

Notes. Images were divided into three subsets with two out of three total coders assigned to each subset.

^aCohen's kappa coefficients are based on the paired inter-rater reliability between each pair of coders for each of three image subsets.

RESULTS

Fatspiration Images

A total of 770 out of 800 scraped fatspiration posts met inclusion criteria. Of these, 379 posts were from fall/winter and 391 were from spring/summer. Food was the most common general image variable, found in 52.1% of posts (see Table 1). People appeared in 40.7% of the posts. Among images containing people, those presenting as women were

more common, found in 84.7% of these images. The majority (68.4%) were higher-weight and not muscular (86.6%). Most people (62.3%) were coded as having 50-100% of their body in the image frame and were fully clothed (54.6%). Only the presence of words in the image was significantly related to season in Chi-squared tests whereby there was a higher percentage of summer posts with words.

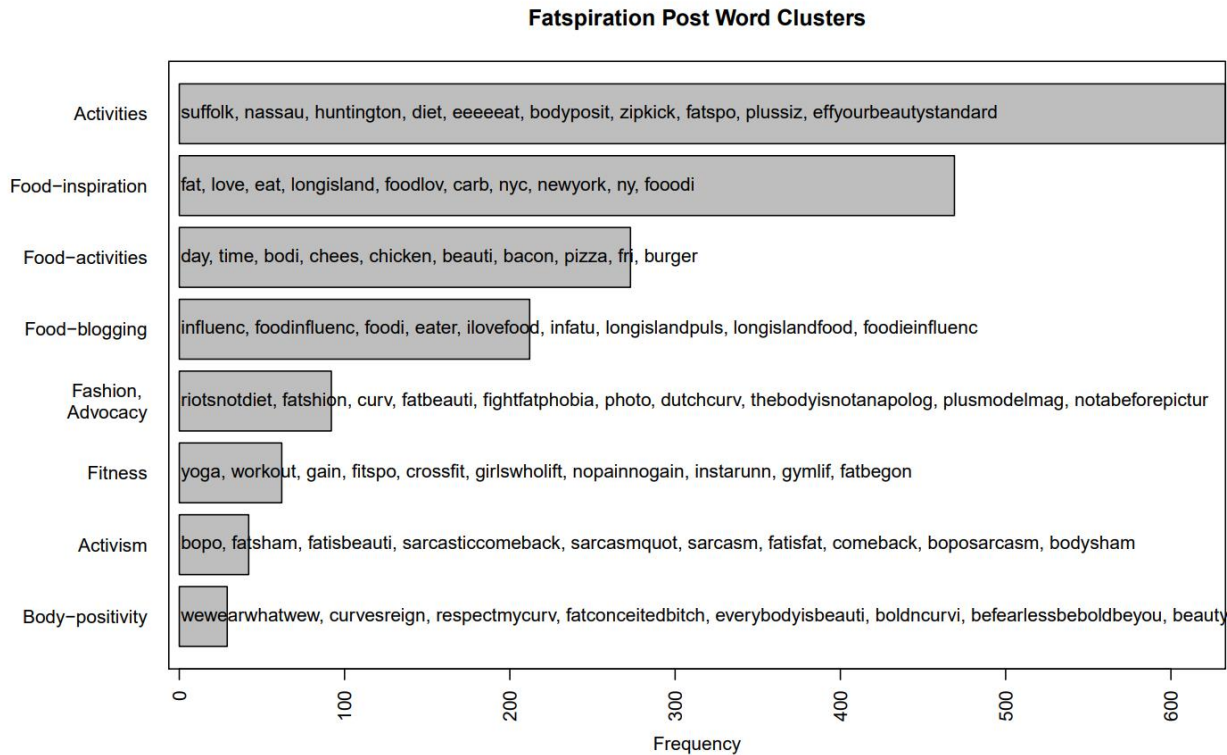


Figure 1. Frequency of word clusters from Instagram post captions ($N = 800$). Word clusters were derived from the latent semantic analysis ordination of Instagram post captions and hierarchical clustering analysis of words based on co-occurrence.

Fatspiration Text

We noted eight distinct word clusters that commonly co-occurred across post authors' text captions (see Figure 1). Text captions containing common words in each theme were read and named based on a predominant theme within these posts. We named the most common word cluster, occurring in 68.6% of sampled posts, "Activities." These posts chronicled the daily activities, including socialization and shopping, of mostly higher-weight individuals touting body positivity. Next most common, in 60.9% of all posts, were words related to the theme of "Food-inspiration," or text glorifying images of delicious-looking food, both healthy and unhealthy. Our multivariate correlation analyses fitting image variables to the post authors' text ordination (LSA axes) revealed that all

general image categories (people, food, exercise, and words) significantly explained variation in the text ($p < 0.001$; see Table 2). Food was the general image category that accounted for the most variation in text caption word composition ($r^2 = 30\%$). Analyzing only posts containing a person, we found that gender, adiposity, body type, and clothing amount also explained variation in the text based on the LSA ordination ($p < 0.001$).

Table 2
Multivariate Correlation Analysis: Image Variables fit to Text Ordination

All Images ($N = 770$)		
Image Category	df	r^2
People	1	.23***
Food	1	.30***
Exercise	1	.02***
Words	1	.06***
Images with People ($n = 313$)		
Gender	2	.06***
Adiposity	2	.15***
Body Type	1	.05***
Body Proportion	2	.01
Clothed Amount	3	.11***

Notes. Image variables rated by three coders were fit as factors to the ordination of documents from the latent semantic analysis.

* $p < .05$, ** $p < .01$, *** $p < .001$

Community Response

We noted four distinct word clusters across comments on fatspiration posts. After reading posts containing words from each cluster, the most common cluster, found in the comments of 75.9% of the posts, was termed “Beauty-appreciation.” These comments often consisted of compliments to the subjects of photographs, most often women, but also food. Second-most common were word clusters with a predominant theme of “Food-cravings” in 58.4% of posts’ comments. In the comments on these posts, online community members indicated that they also liked a certain food or wanted to try it.

Table 3 ANOVA: Network Engagement or “Notes”

All Images (<i>N</i> = 770)		
	<i>df</i>	<i>F</i>
Main Effects		
People	1	27.11***
Food	1	5.55*
Exercise	1	9.03**
Words	1	3.02
Interactions		
People: Food	1	16.66***
People: Exercise	1	3.90*
Food: Exercise	1	0.06
People: Words	1	17.30***
People: Food: Exercise	1	1.16
People: Food: Words	1	3.14
People: Exercise: Words	1	0.02
Food: Exercise: Words	1	0.11
Images with People (<i>n</i> = 313)		
Main Effects^a		
Gender	2	11.23***
Adiposity	2	5.06**
Clothed Amount	3	8.17***
Body Type	1	0.00
Body Proportion	2	5.91**
Tukey's Multiple Comparisons of Means		
	Δ	95% CI
Gender		
(Male) - (Female)	= -98.69***	-150.54 - -46.85
(Nonbinary) - (Female)	= -106.17	-248.51 - 36.17
(Nonbinary) - (Male)	= -7.48	-156.47 - 141.51
Adiposity		
(Higher-weight) - (Average)	= 40.53*	1.80 - 79.27
(Thin) - (Average)	= -92.48	-277.35 - 92.40
(Thin) - (Higher-weight)	= -133.01	-316.34 - 50.31
Clothing Amount		
(Moderate) - (Full)	= 29.41	-16.13 - 74.96
(Naked) - (Full)	= 38.57	-86.54 - 163.68
(Underwear) - (Full)	= 106.16***	49.20 - 163.12
(Naked) - (Moderate)	= 9.15	-118.62 - 136.93
(Underwear) - (Moderate)	= 76.75**	14.14 - 139.36
(Underwear) - (Naked)	= 67.59	-64.68 - 199.87
Body Type		
(Not) - (Muscular)	= 0.41	-43.28 - 44.10
Body Proportion		
(25-50%) - (0-25%)	= 46.38	-12.53 - 105.29
(50-100%) - (0-25%)	= 69.78**	19.40 - 120.17
(50-100%) - (25-50%)	= 23.40	-20.77 - 67.57

^a There were no significant interaction effects for the images with people.

p* < .05, *p* < .01, ****p* < .001

As displayed in Table 3, the ANOVA indicated that the presence of a person in an image had a main effect on an Instagram post's number of notes received ($F(1,755) = 27.11, p < .001$) as did exercise equipment or clothing ($F(1,755) = 9.03, p < .01$) and food

($F(1,755) = 5.55, p < .05$). There was also an interaction effect between the presence of people and food in images on the number of notes ($F(1,755) = 16.66, p < .001$) as illustrated in Figure 2, between people and words ($F(1,755) = 17.3, p < .001$), and people and exercise equipment ($F(1,755) = 3.9, p = 0.05$). Within posts containing images of people, females received 98.69 more notes on average than men ($p < .001$). People coded as higher-weight received 40.53 more notes on average than those of average weight ($p < .05$). People wearing underwear had a mean number of notes 106.16 higher than those fully clothed ($p < .001$) and 76.75 notes higher than moderately clothed people ($p < .01$) as illustrated in Figure 3. Finally, those images showing most of the pictured person had 69.78 more notes on average than posts showing 0-25% ($p < .01$).

DISCUSSION

The purpose of the current study was to identify themes in the images and text of weight-inclusive posts and to predict patterns of engagement with posts. Our findings are pertinent to advocates on Instagram that seek to combat weight bias and stereotypes. Through our image-based content analysis, we found that most fatspiration posts showed women of higher weight and involved less sexual objectification than fitspiration posts, as evidenced by showing the whole person and more clothing. The Instagram post authors' text captions involved themes of self-acceptance as opposed to motivation to change. The five most common thematic word clusters focused on the celebration of food or people, mostly higher-weight women. Post images bolder in body positivity, featuring higher-weight individuals in more revealing clothing, received significantly more notes.

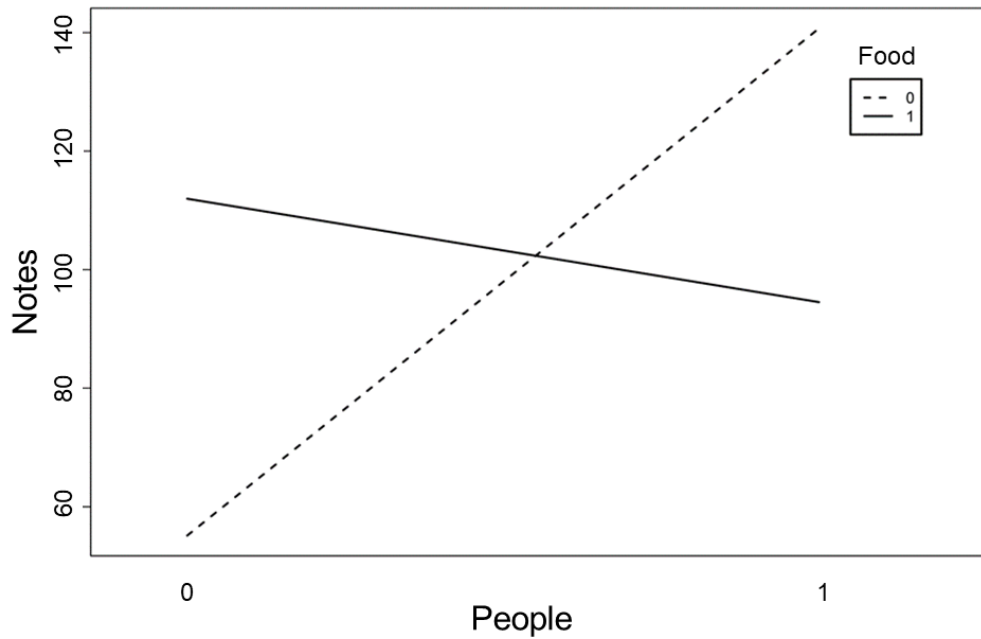


Figure 2. Plot of the interaction effect between the presence of food and the presence of a person(people) in an Instagram image on notes received by that post ($N = 770$).

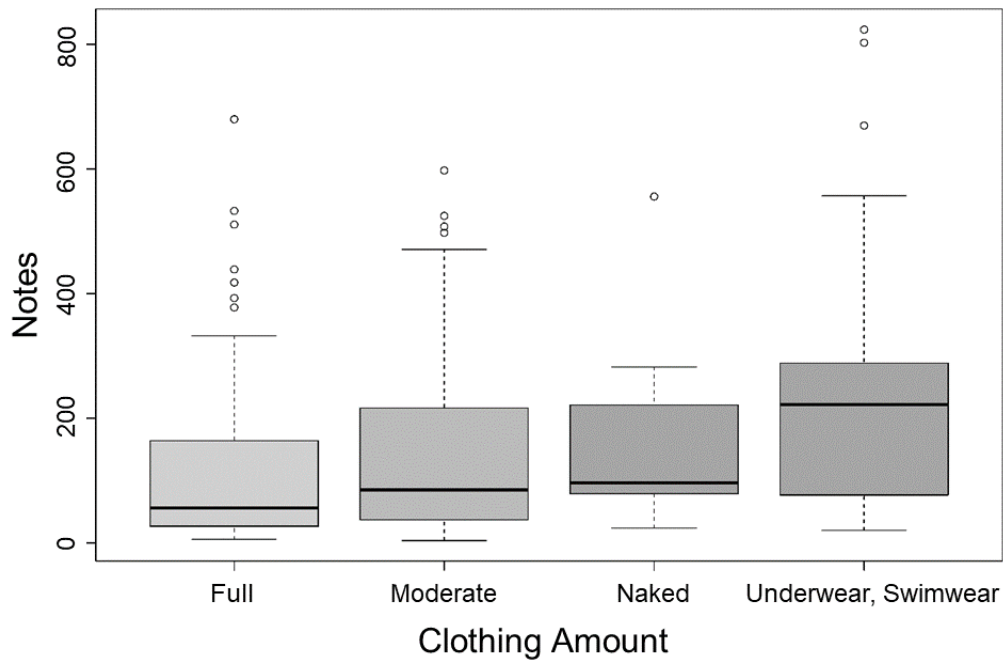


Figure 3. Box plot of the main effects of clothing amount in an Instagram image containing a person(people) on notes received by that post ($n = 313$).

Fat Acceptance and Social Support

Our text-based findings hearken to previous research on the importance of social media for marginalized communities in the US (Chong et al., 2015; Lee & Cho, 2019; Naslund et al., 2014). Themes of post authors' text captions align with findings that fatspiration posts are likely to emphasize positivity and acceptance rather than a motivation for change (Webb et al., 2017). Themes of community members' comments on posts also reveal the nature of social support given in response to these body positive posts. The largest word cluster within online community comments was flattering of beauty in the image, and the second largest comment cluster focused on the desire of social network members to experience what the user was experiencing, stating, for example, that they also enjoy a certain type of food or activity. This parallels Naslund et al. (2014)'s description of social media comments decreasing the isolation of people experiencing mental illness, because other users shared experiences and feelings in common with the post authors. This social support may have the potential to improve psychological disposition and resilience in higher-weight individuals if trends from other online marginalized communities are also found within weight-inclusive communities (Chong et al., 2015; Lee & Cho, 2019).

Reconceptualizing Fatness

Our image-based content analysis showed the ways in which higher-weight individuals promote fat acceptance in weight-inclusive communities and challenge fat stigma in general among other online users. Many images reflected aspects of daily life, including fun, fashionable activities undertaken by people of higher weight and those who enjoy eating delicious food. Over half of images showed some type of food or meal (52.1%), often being eaten out at a restaurant. Also, most images with people included full clothing (54.6%), often drawing attention to a user's outfit choice for work or leisure. The images within our Instagram sample, therefore, primarily reflect the trend on this site of celebrating everyday life occurrences, which can be important in challenging the stigma of otherness or abnormality associated with marginalized groups (Feuston & Piper, 2019). Dickins et al. (2011) described the goal of the body positive movement to reconceptualize fatness and challenge old stereotypes, like laziness. Many of these images show active lifestyles on the part of higher-weight individuals, including work and leisure.

Although fatspiration posts contained less sexually objectifying imagery overall than fitspiration content measured in previous research (Baker et al., 2019; Simpson & Mazzeo, 2017), posts showing women in underwear did have higher engagement from online social networks on average. This indicates that, although posts depicting fully clothed people were more common, posts with scantily clad women were the most popular. Perhaps some level of objectification is inherent in media portrayals of a sexualized, attractive person, especially on a photo-based platform like Instagram that may encourage conformity to conventional depictions of beauty (Duguay, 2016). This minority of posts may exemplify another tactic to challenge old conceptualizations of fatness: sexualizing higher-weight women as an alternative to the predominant media images of sexualized, thin women. The current study did not assess the relative empowerment or motivation of Instagram post authors or image subjects, so it was difficult to determine whether images were intended to objectify, promote acceptance, or both.

Limitations and Directions for Future Research

Although the current study included significant results, it had several limitations. Post authors often commented in reply to others about their images; therefore, comment text was not totally independent from post authors' caption text. Instagram post authors can also delete negative comments at an unknown rate, so the full breadth of comment themes may be less positive than our results indicate. Food and drinks were not coded as healthy or unhealthy, nor were ethnicity and age of people coded. This coding might have further differentiated the content of fatspiration posts from the content of fitspiration posts found in other studies. Also, we did not account for individuals' number of posts, so the content of some very active users was weighted more heavily than the content of less frequent post authors in the sample, potentially resulting in autocorrelation and not meeting assumptions of independence of errors in our ANOVA. The dependent variable in our ANOVA, notes received, was also negatively skewed as is common in measures of social media engagement and, therefore, did not meet assumptions of normality.

Despite these limitations, the current study is an important addition to the extant literature on weight-inclusive communities on social media, including the features of posts that have the most potential to engage social networks and promote body positive or body neutral content. Our findings have implications for future research. Communicating with

the authors of fatspiration posts about their motives and their perception of community response could shed light on levels of objectification vs. empowerment in the body positive movement, especially with respect to more revealing imagery. We are also curious to investigate the impacts of viewing body positive content on body image and behavioral intentions, such as exercise and eating, in comparison to previous research on the effects of viewing fitspiration imagery.

CONCLUSION

The current study explored the image and text content of weight-inclusive posts on Instagram using image coding and latent semantic analysis. The text within posts' captions and comments reflected an environment of positivity, acceptance, and shared experiences and feelings in this weight-inclusive online community. Most images showed daily activities of higher-weight people and food lovers, including meals out, wearing fashionable clothing, and going to work or parties. These portrayals of everyday, active, and interesting lives of higher-weight people may be one way these marginalized community members challenge weight bias. Weight-inclusive images of people were less objectifying overall than previous studies of fitspiration imagery; however, our analysis of network engagement with posts and their relative popularity raised questions about the interrelationship among body acceptance, objectification, and empowerment. The minority of especially popular posts in our sample portraying higher weight women in less clothing represents new, sexualized conceptualizations of fatness in popular media. In future work, it is important to disentangle motives of empowerment and sexualization in body positive imagery online to inform advocacy efforts and combat weight bias. Despite remaining questions, the current study reveals how social media can help develop and maintain inclusive online communities otherwise difficult in person. Online weight-inclusive advocacy has the potential to offset the harmful effects of online social comparison associated with body dissatisfaction.

References

- Afful, A.A., & Ricciardelli, R. (2015). Shaping the online fat acceptance movement: Talking about body image and beauty standards. *Journal of Gender Studies, 24*(4), 453-472. <https://doi.org/10.1080/09589236.2015.1028523>
- Anderson, J., Bresnahan, M., & Musatics, C. (2014). Combating weight-based cyberbullying on Facebook with the dissenter effect. *Cyberpsychology, Behavior, and Social Networking, 17*(5), 281-286. <https://doi.org/10.1089/cyber.2013.0370>
- 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*(4), 277-282. <https://doi.org/10.1089/cyber.2018.0420>
- Benton, C., & Karazsia, B.T. (2015). The effect of thin and muscular images on women's body satisfaction. *Body Image, 13*, 22-27. <https://doi.org/10.1016/j.bodyim.2014.11.001>
- Boepple, L., Ata, R.N., Rum, R., & Thompson, J.K. (2016). Strong is the new skinny: A content analysis of fitspiration websites. *Body Image, 17*, 132-135. <https://doi.org/10.1016/j.bodyim.2016.03.001>
- Chong, E.S., Zhang, Y., Mak, W.W., & Pang, I.H. (2015). Social media as social capital of LGB individuals in Hong Kong: Its relations with group membership, stigma, and mental well-being. *American Journal of Community Psychology, 55*(1-2), 228-238. <https://doi.org/10.1007/s10464-014-9699-2>
- Coddington, K., & Mountz, A. (2014). Countering isolation with the use of technology: How asylum-seeking detainees on islands in the Indian Ocean use social media to transcend their confinement. *Journal of the Indian Ocean Region, 10*(1), 97-112. <https://doi.org/10.1080/19480881.2014.896104>
- Cohen, R., Irwin, L., Newton-John, T., & Slater, A. (2019). #Bodypositivity: A content analysis of body positive accounts on Instagram. *Body Image, 29*, 47-57. <https://doi.org/10.1016/j.bodyim.2019.02.007>
- Cohen, R., & Shikora, S. (2020). Fighting weight bias and obesity stigma: A call for action. *Obesity Surgery, 30*, 1623-1624. <https://doi.org/10.1007/s11695-020-04525-0>
- De Vries, D.A., Peter, J., de Graaf, H., Nikken, P. (2016). Adolescents' social network site use, peer appearance-related feedback, and body dissatisfaction: Testing a mediation model. *Journal of Youth and Adolescence, 45*(1), 211-224. <https://doi.org/10.1007/s10964-015-0266-4>
- Deighton-Smith, N., & Bell, B.T. (2018). Objectifying fitness: A content and thematic analysis of #fitspiration images on social media. *Psychology of Popular Media Culture, 7*(4), 467-483.
- Dickins, M., Thomas, S.L., King, B., Lewis, S., & Holland, K. (2011). The role of the fatosphere in fat adults' responses to obesity stigma: A model of empowerment without a focus on weight loss. *Qualitative Health Research, 21*(12), 1679-1691. <https://doi.org/10.1177/1049732311417728>
- Duguay, S. (2016). Lesbian, gay, bisexual, trans, and queer visibility through selfies: Comparing platform mediators across Ruby Rose's Instagram and Vine presence. *Social Media + Society, 2*(2). <https://doi.org/10.1177/2056305116641975>
- Edison Research (2019). *The infinite dial 2018*. Retrieved from <https://www.statista.com/statistics/273476/percentage-of-us-population-with-a-social-network-profile/>

- Fardouly, J., & Vartanian, L. R. (2016). Social media and body image concerns: Current research and future directions. *Current Opinion in Psychology, 9*, 1-5. <https://doi.org/10.1016/j.copsyc.2015.09.005>
- Feuston, J. L., & Piper, A. M. (2019). Everyday experiences: Small stories and mental illness on Instagram. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (pp. 1-14). <https://doi.org/10.1145/3290605.3300495>
- Gonzales, A. L. (2017). Disadvantaged minorities' use of the internet to expand their social networks. *Communication Research, 44*(4), 467-486. <https://doi.org/10.1177/0093650214565925>
- Highfield, T., & Leaver, T. (2014). A methodology for mapping Instagram hashtags. *First Monday, 20*(1), 1-11.
- Holland, G., & Tiggemann, M. (2017). 'Strong beats skinny every time': Disordered eating and compulsive exercise in women who post fitspiration on Instagram. *International Journal of Eating Disorders, 50*(1), 76-79. <https://doi.org/10.1002/eat.22559>
- Lee, H. E. & Cho, J. (2019). Social media use and well-being in people with physical disabilities: Influence of SNS and online community uses on social support, depression, and psychological disposition. *Health Communication, 34*, 1-10.
- Lewis, S., Thomas, S. L., Blood, R. W., Castle, D., Hyde, J., & Komesaroff, P. A. (2011). 'I'm searching for solutions': Why are obese individuals turning to the internet for help and support with 'being fat'? *Health Expectations: An International Journal of Public Participation in Health Care and Health Policy, 14*(9), 339-350. <https://doi.org/10.1080/10410236.2018.1455138>
- Naslund, J. A., Aschbrenner, K. A., & Bartels, S. J. (2016). How people with serious mental illness use smartphones, mobile apps, and social media. *Psychiatric Rehabilitation Journal, 39*(4), 364-367. <https://doi.org/10.1037/prj0000207>
- Naslund, J. A., Grande, S. W., Aschbrenner, K. A., & Elwyn, G. (2014). Naturally occurring peer support through social media: The experiences of individuals with severe mental illness using YouTube. *PLoS one, 9*(10). <https://doi.org/10.1371/journal.pone.0110171>
- Oh, H. J., Ozkaya, E., & LaRose, R. (2014). How does online social networking enhance life satisfaction? The relationships among online supportive interaction, affect, perceived social support, sense of community, and life satisfaction. *Computers in Human Behavior, 30*, 69-78. <https://doi.org/10.1016/j.chb.2013.07.053>
- Oksanen, J., Blanchet, F. G., Friendly, M., Kindt, R., Legendre, P., McGlenn, D., Minchin, P. R., O'Hara, R. B., Simpson, G. L., Solymos, P., Stevens, M. H. H., Szoecs, E., & Wagner, H. (2018). *Vegan: Community Ecology Package*. R package version 0.73.1 Retrieved from <https://cran.r-project.org/web/packages/vegan/vegan.pdf>
- Omnicores (2019). *Instagram by the numbers: Stats, demographics & fun facts*. Retrieved from <https://www.omnicoreagency.com/instagram-statistics/>
- Prichard, I., McLachlan, A.C., Lavis, T., & Tiggemann, M. (2018). The impact of different forms of #fitspiration imagery on body image, mood, and self-objectification among young women. *Sex Roles, 78*(11-12), 789-798. <https://doi.org/10.1007/s11199-017-0830-3>

- R Core Team (2013). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. Vienna, Austria. Retrieved from <http://www.R-project.org/>
- Raggatt, M., Wright, C.J.C., Carrotte, E., Jenkinson, R., Mulgrew, K., Prichard, I., & Lim, M.S.C. (2018). 'I aspire to look and feel healthy like the posts convey': Engagement with fitness inspiration on social media and perceptions of its influence on health and wellbeing. *BMC Public Health*, *18*(1), 1002. <https://doi.org/10.1186/s12889-018-5930-7>
- Robinson, L., Prichard, I., Nikolaidis, A., Drummond, C., Drummond, M., & Tiggemann, M. (2017). Idealised media images: The effect of fitspiration imagery on body satisfaction and exercise behaviour. *Body Image*, *22*, 65–71. <https://doi.org/10.1016/j.bodyim.2017.06.001>
- Santarossa, S., Coyne, P., Lisinski, C., Woodruff, S.J. (2016). #fitspo on Instagram: A mixed-methods approach using Netlytic and photo analysis, uncovering the online discussion and author/image characteristics. *Journal of Health Psychology*, *24*(3), 376–385. <https://doi.org/10.1177/1359105316676334>
- Saha, N., & Karpinski, A.C. (2016). The influence of social media on international students' global life satisfaction and academic performance. In Bista K, Foster C, eds. *Campus Support Services, Programs, and Policies for International Students*. Hershey, PA: IGI Global (pp. 57-76). <https://doi.org/10.4018/978-1-4666-9752-2.ch004>
- Simpson, C.C., & Mazzeo, S.E. (2017). Skinny is not enough: A content analysis of fitspiration on Pinterest. *Health Communication*, *32*(5), 560–567. <https://doi.org/10.1080/10410236.2016.1140273>
- Smith, A., & Anderson, M. (2018). *Social media use in 2018*. Pew Research Center. Retrieved from <http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/>
- Tiggemann, M., & Zaccardo, M. (2018). 'Strong is the new skinny': A content analysis of #fitspiration images on Instagram. *Journal of Health Psychology*, *23*(8), 1003–1011. <https://doi.org/10.1177/1359105316639436>
- Tylka, T.L., Annunziato, R.A., Burgard, D., Daniélsdóttir, S., Shuman, E., Davis, C., & Calogero, R.M. (2014). The weight-inclusive versus weight-normative approach to health: Evaluating the evidence for prioritizing well-being over weight loss. *Journal of Obesity*, *2014*, 1-18. <https://doi.org/10.1155/2014/983495>
- Webb, J.B., Vinoski, E.R., Bonar, A.S., Davies, A.E., & Etzel, L. (2017). Fat is fashionable and fit: A comparative content analysis of fatspiration and health at every size Instagram images. *Body Image*, *22*, 53-64. <https://doi.org/10.1016/j.bodyim.2017.05.003>
- Wild, F. (2015). *LSA: Latent Semantic Analysis*. R package version 0.73.1 Retrieved from <https://cran.r-project.org/web/packages/lssa/lssa.pdf>

Funding and Acknowledgements

The authors declare no funding sources or conflicts of interest. The authors would like to thank Daniel Griffith for his consultation with statistical analyses in the programming language R.