The Relationship between Health- and Fitness-Related Social Media Use and Consumers' Disordered Eating

By Vivienne Schünemeyer and Gianfranco Walsh

Health-related services shared through social media are enjoying considerable growth, particularly among young people, yet they have potentially detrimental outcomes for consumer well-being. This research undertakes an examination of literature pertaining to health-related social media use in an effort to explore its relationship with disordered eating in particular. In line with objectification theory, Study 1 affirms that viewing images and videos posted on health-related social media is positively associated with the level of people's disordered eating. Furthermore, Study 2 clarifies that this relationship is mediated, as expected, by social physique anxiety, and it also is unexpectedly moderated by general social media use. That is, the relationship between viewing health-related images and videos and disordered eating is stronger among consumers who exhibit low and medium social media use rather than those with high social media use. The implications of these findings are relevant for both health-related service research and public policy.

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1. Introduction

Social media are integral to consumers' lives (Fardouly et al. 2017; Hennig-Thurau et al. 2013; Kumar et al. 2016). Originally conceived of as a communication platform, their scope has expanded into various application areas, including health-related services offered by social media apps that promise physical and health benefits and tactics for achieving a healthy lifestyle. Insofar as such services improve consumers' lives and well-being outcomes, they can be transformative (Rosenbaum et al. 2017); for example, #fitspiration, one of many such hashtags on Instagram, seeks to inspire people to embrace healthier lifestyles by showing images and videos of athletic people (Tiggemann and Zaccardo 2016). Other health-related fitness apps (e.g., FitnessPal, Gymondo, mySugr) offer tips for following a healthy diet, exercising at home, or dealing with chronic diseases (e.g., diabetes), with multiple self-management approaches; in other words, they facilitate self-improvement (Wolf et al. 2020).

Accordingly, psychological, marketing and services research frequently highlights how social media might enhance people's well-being (e.g., Felix et al. 2017; Hennig-Thurau et al. 2010; Kozinets et al. 2011). For example, social media use promotes the information exchange between consumers or consumers and companies, which opens up new opportunities for the consumer to share product experiences and to choose better products (Hennig-Thurau et al. 2010). Addionally, the information exchange in social media can impact social change and may lead to a sustainable consumption lifestyle (Kozinets et al. 2011). However, findings in other fields show that social media use can evoke serious mental and physical health concerns. Social media use involves active behaviors such as posting status updates or direct exchanges with other users, groups or entities (e.g., companies) and more passive behaviors, typically in the form of viewing social media content. In terms of negative effects of social media use, past research has shown that time spent on social media relates positively to body dissatisfaction and a drive for thinness among young women (Fardouly and Vartanian 2015), self-objectification and body surveillance (Vandenbosch and Eggermont 2016), body image concerns (e.g., Fardouly and Vartanian 2015; Tiggemann and Slater 2013; 2014), negative

moods (Fardouly et al. 2015), and eating issues (Mabe et al. 2014; Smith et al. 2013; Tiggemann and Miller 2010; Wilksch et al. 2020). Disordered eating, defined as severe disturbances in a person's eating behaviors and related thoughts and emotions (American Psychatric Association 2013; 2019), is a particularly worrisome behavioral outcome, due to its impacts on people's activities (Klump et al. 2009) and frequent correlation with depression (Maser et al. 1995). In our work, we focus on health- and fitness-related social media use and challenge their purported health-promoting effects by considering users' eating disorders as focal outcome.

In research that seeks to elucidate the eating-related consequences of social media use, Mabe and colleagues (2014) show that the duration of Facebook use is associated with eating disorders, and Smith et al. (2013, p. 235) determine that maladaptive social media use, "defined as the tendency to seek negative social evaluations and/or engage in social comparisons", can lead to bulimia and episodes of overeating. Another stream of research focuses on the detrimental implications of fitness-related social media content, such as on Pinterest (Lewallen and Behm-Morawitz 2016) or Instagram (Fardouly et al. 2017), and reveals that increased viewing of fitness images is associated with weight-loss behavior and body image concerns among women. However, these studies do not test whether such concerns also translate into disordered eating. Even among research that has established empirical links between health- and fitness-related social media use and disordered eating or other detrimental outcomes (see *Tab. A1* in the Appendix for a comprehensive but not exhaustive summary), we note some limitations. First, with a few notable exceptions (e.g., Griffiths et al. 2018), most studies focus on female consumers, though men may be body conscious, too (e.g., Calogero 2009; Daniel and Bridges 2010; Tiggemann and Kuring 2004), so generalizability concerns remain. Second, scarce research considers the effect of social media content that relates to health and fitness. That is, and again with a few exceptions (e.g., Cohen et al. 2018; Lewallen and Behm-Morawitz 2016), the link between viewing images or videos posted on health-related social media and disordered eating remains underresearched. Third, the current literature mainly focuses on certain platforms which carry health-related content, particularly Instagram (e.g., Fardouly et al. 2017; Tiggemann and Zaccardo 2015; 2016), and is often qualitative in nature (e.g., Carrotte et al. 2017; Easton et al. 2018) thus also raising generalizability concerns. Fourth, as our literature review reveals, the boundary conditions of this relationship (i.e., mediators and moderators) remain unclear. Thus even though extant studies offer important insights into the negative effects of social media use, they do not specify the mechanism and boundary conditions by which social media-based health services might evoke unintended and negative consequences, such as disordered eating.

To address these issues, we conduct two studies of social media uses. Unlike studies that consider general Internet or social media use (e.g., Fardouly et al. 2015b; Fardouly and Vartanian 2015; Tiggemann and Miller 2010; Wilksch et al. 2020), our focus is specifically on consumers' viewing behaviors, related to health and fitness images or videos posted on social media. With Study 1, we establish a baseline relationship between viewing such images and disordered eating levels, using a mixed-gender sample. Then in Study 2, we reveal how social physique anxiety and social media use influence this relationship. Our findings offer both theoretical and practical insights: Theoretically, we draw on objectification theory, confirm a mediating role of social physique anxiety, and offer predictions about the differential effects (moderated by social media use) of viewing behavior on disordered eating. Practically, health care practitioners can use our findings to develop interventions to limit disordered eating and its associated costs.

2. Background and hypotheses

Our conceptual model builds on self-objectification theory (Fredrickson and Roberts 1997) to explain consumers' disordered eating as an outcome of their viewing of images or videos posted on health-related social media (*Fig. 1*). Hereafter, we refer to both still images and videos as 'images', for fluency. The model also incorporates consumers' social media use as a moderator and social physique anxiety as a mediator. Self-objectification theory posits that that societal objectification of

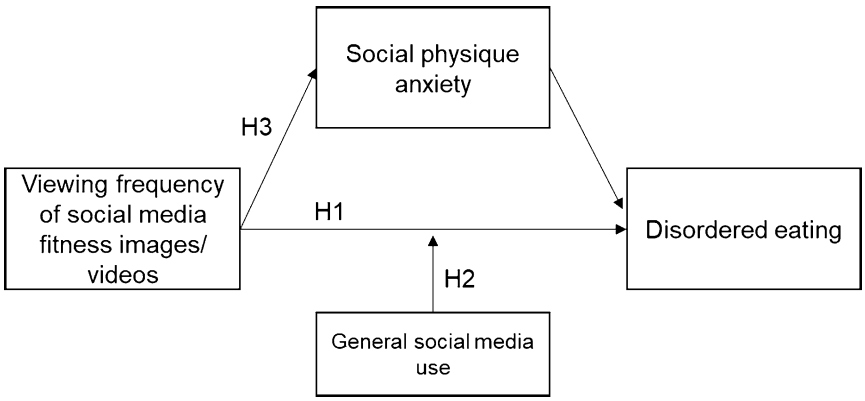


Fig. 1: Research model

consumers, and especially women, causes people to internalize and adopt an outsider view, treating themselves "as an object to be looked at and evaluated" (Fredrickson and Roberts 1997, p. 177). Through such self-objectification, consumers view their body as separate from their person or as a representation of their selves. Both self-objectification and the ensuing focus on appearance tend to be associated with decreased well-being and disordered eating (Fardouly et al. 2017; Fredrickson and Roberts 1997).

Social media are relevant to growing areas of everyday life, such that consumers can inform themselves, share and exchange knowledge, solicit services, and participate in various activities, including health- and fitness-related ones (Heinonen 2011; Leak et al. 2014; Rote et al. 2015; Vaterlaus et al. 2015; von Mohrenfels and Klapper 2014). Yet this increasing relevance of social media in consumers' lives also creates concerns about their impact on consumers' mental and physical health. As the studies listed in the Appendix reveal, general social media use may affect consumers' body perceptions and other psychological or behavioral outcomes, including negative moods, body dissatisfaction, and harmful eating behaviors (e.g., Cohen et al. 2018; Fardouly et al. 2015a; Mabe et al. 2014). These negative effects may even be exacerbated by the fact that some social media sites promote misleading health- and fitness-related information (Dedrick et al. 2020).

However, relatively little research within this domain explicitly emphasizes social media sites that promote health and fitness goals, despite their strong potential effects on consumer behavior. For example, "fitspiration" sites aim to inspire consumers to adopt healthy lifestyles (Fardouly et al. 2017), and "thinspiration" sites offer imagery encouraging consumers to be thin (Talbot et al. 2017), both of which may contribute to body-related concerns and disordered eating. In particular, consumers might perceive that disordered eating is a means to lose weight and conform with societally established beauty standards. According to Lewallen and Behm-Morawitz (2016), people who follow more fitness boards on Pinterest are more likely to report intentions to engage in extreme weight-loss behavior. Following fitspiration sites means consumers get exposed to thin beauty ideals and weight loss behaviors, both of which can bring about eating disorders (Ghaznavi and Taylor 2015).

In content analyses of thinspiration and fitspiration websites, researchers find that most content is strongly appearance-related and frequently includes idealized, sexually objectified images that promote thinness, weight loss, and even disordered eating (Boepple et al. 2016; Ghaznavi and Taylor 2015). Therefore, we anticipate that health- and fitness-related social media use, in the form of viewing fitness images, may be linked to disordered eating.

H1: Viewing fitness images on social media is positively associated with disordered eating.

Even if consumers use social media mainly to engage with others and available content (Hajli and Sims 2015), which does not necessarily involve viewing health- and fitness-related content, such general uses still might expose consumers to societal body ideals and thereby evoke body-related concerns (Saiphoo and Vahedi 2019). A case in point is social media advertising, which in recent years continued to grow with worldwide projected spendings of more than $98 billion in 2020 (Statista 2020). Such advertisements, like traditional and other forms of electronic advertising, reinforce beauty ideals by showing idealized images of the female and male body. We expect such general exposure to strengthen the hypothesized link between viewing fitness images on social media and disordered eating. In support of this claim, we note that prior research has established that the frequency of social media use is related to several negative mental and physical consequences (Tiggemann and Miller 2010; Tiggemann and Slater 2013). Time spent on social media is associated with both the internalization of cultural beauty ideals and negative body-related outcomes, such as self-objectification and disordered eating (Cohen et al. 2018; Mabe et al. 2014). In particular, consumers who spend more time on social media are exposed to cultural beauty ideal standards more often, so they may internalize them and start to objectify their bodies. On this point, Fredrickson and Roberts (1997) argue that individuals can be exposed to contexts and information sources that either protect them from, or exacerbate, the negative repercussions of objectification. Accordingly, we would expect that high levels of general social media use brings about stronger self-objectification through frequent exposure to idealized body images. Stronger self-objectification in turn should strengthen the positive relationship between viewing social media fitness images and disordered eating. Consistent with this reasoning, Fardouly et al. (2017) show that greater overall Instagram use is associated with higher levels of self-objectification, mediated by internalization of societal beauty ideals, and Tiggemann and Slater (2014) indicate that Internet exposure leads to greater internalization of thin ideals, which result in more dieting behavior. If greater social media use leads to a higher level of internalization of cultural beauty ideals and comparisons with others (e.g., Chua and Chang 2016), we would predict an enhanced relationship between the frequency of viewing fitness images and disordered eating.

H2: The relationship between viewing fitness images on social media and disordered eating is moderated by the frequency of social media use, such that relationship is stronger for consumers with higher vs. lower social media usage.

Health- and fitness-related social media also encourage permanent comparisons of the self to others that the consumer aspires to emulate. The idealistic, rarely attainable beauty ideal they establish also encourages consumers to try to conform or emulate the looks and behaviors exhibited on health- and fitness-related social media sites (Ma-

be et al. 2014). If consumers internalize an unrealistic beauty ideal from social media, they also might come to believe their appearance is more important (to others and themselves) than other personal characteristics. Knowing that other people are judging their bodies also may make consumers anxious that they are failing to conform to societal expectations. Such social physique anxiety, or the perception that other people are judging one's body, may bring about feelings of distress and a desire to alter the physical self (Hart et al. 1989; Koyuncu et al. 2010). In scarce past research, this anxiety appears to be associated with disordered eating (e.g., Hart et al. 2008; Levinson et al. 2013); that is, a fear of others' negative evaluations might contribute to disordered eating behavior. Thus, we predict a mediating effect of social physique anxiety:

H3: Social physique anxiety mediates the relationship between viewing fitness images on social media and disordered eating, such that viewing is positively linked to social physique anxiety, which then is positively associated with disordered eating.

3. Empirical studies

3.1. Study 1

With Study 1, we test for a direct relationship between viewing fitness images on social media and disordered eating, while controlling for variables that may affect this relationship.

3.1.1. Method

To test our prediction that viewing fitness images on social media can lead to disordered eating, we employ UniPark software to conduct an online survey. Graduate research assistants recruited a sample of 119 German participants (mean age = 23.87 years, SD = 4.01; 45 [37.8 %] male, 74 [62.2 %] female) who were mainly students (52.1 %); they answered questions about their demographics, weight, and height (to calculate their body mass index [BMI], defined as a person's weight in kilograms divided by his or her height in meters squared). The mean BMI for both the female (22.77, SD = 3.90, range = 16.16–40.40) and male (23.58, SD = 3.67, range = 17.92–34.68) participants fall within normal weight ranges (WHO 2019).

Viewing social media fitness images/videos. We asked the participants to indicate how often, on an average day, they viewed social media fitness images. Participants indicated their viewing frequency on a 7-point scale (1 = *never* to 7 = *very frequently*).

Disordered eating. We took five items from the eating disorder examination-questionnaire (EDE-Q; Allen et al. 2011). The self-reported measure contains items that reflect the wish to lose weight ("I am preoccupied with the desire to be thinner"), feelings of guilt after overeating ("I feel extremely guilty after overeating"), and fear of gaining weight ("I am terrified of gaining weight"). We anchored these disordered eating items on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*); the measure achieves good reliability (Cronbach's α = .89).

3.1.2. Results

To examine *H1*, we conducted an ordinary least square regression. In this analysis, we logarithmized the independent viewing variable to correct a skewed distribution. In the regression results, viewing social media fitness images is positively associated with disordered eating (b = 1.31, p < .05), in support of our prediction that consumers who view fitness-related content on social media are more likely to develop some form of disordered eating (*H1*). Noting the gender differences that arise with regard to disordered eating (Striegel-Moore et al. 2009) and their prevalence during adolescence and early adulthood (Woodside and Garfinkel 1992), we include gender (b = 1.30, p < .01) and age (b = -.01, p > .05) as control variables. [1] The results indicate that that 22 % of the variance (F = 12.14, p < .01) is explained by the hypothesized predictor.

3.2. Study 2

With Study 2, we test for moderation (*H2*) and mediation (*H3*) of the relationship between viewing fitness images on social media and disordered eating.

3.2.1 Method

The procedure of Study 2 is similar to that for Study 1, in that we collected data through an online survey, and the participants were recruited by graduate research assistants. The final sample consists of 215 German participants (mean age = 24.63 years, SD = 5.15; 91 [42.3 %] male, 124 [57.7 %] female), the majority of which (56.7 %) are students. The mean BMI for both men and women again reflect normal weight values ($BMI_{Mean\ Men}$ = 24.51, SD = 4.59, range = 17.92–50.93, $BMI_{Mean\ Women}$ = 22.43, SD = 3.87, range = 15.76–40.40). For both viewing social media fitness images and disordered eating, we used the same measures from Study 1. The disordered eating measure again showed good reliability (Cronbach's α = .91).

Moderator. To assess general social media use, we asked about the duration of time participants spend on average on social media each day. Participants considered a list of the most used social media applications (e.g., Facebook, Instagram) and had to mark any applications they used regularly. Then they indicated how long, on average (in full minutes), they spend on one of the applications, randomly selected from the previously marked list. Noting the wide range of answers (min = 1 minutes, max = 240 minutes), we logarithmized this variable of general social media use.

Mediator. To assess social physique anxiety, we used the Social Physique Anxiety Scale (SPAS) developed by

	Social physique anxiety (mediator)	Disordered eating (dependent variable)
Independent variable		
SMFI/VF	1.22**	2.31*
Moderator		
GSMU		.44
Interaction		
SMFI/VF × GSMU		-1.19
Mediator		
Social physique anxiety		.59**
Control variables		
gender	1.03**	.86**
age	-.04	.01
BMI	.06**	.04
R^2	.20	.51
N	215	215

Notes: Unstandardized beta values. SMFI/VF = social media fitness images/videos frequency, GSMU = general social media use. *$p < .05$; **$p < .01$.

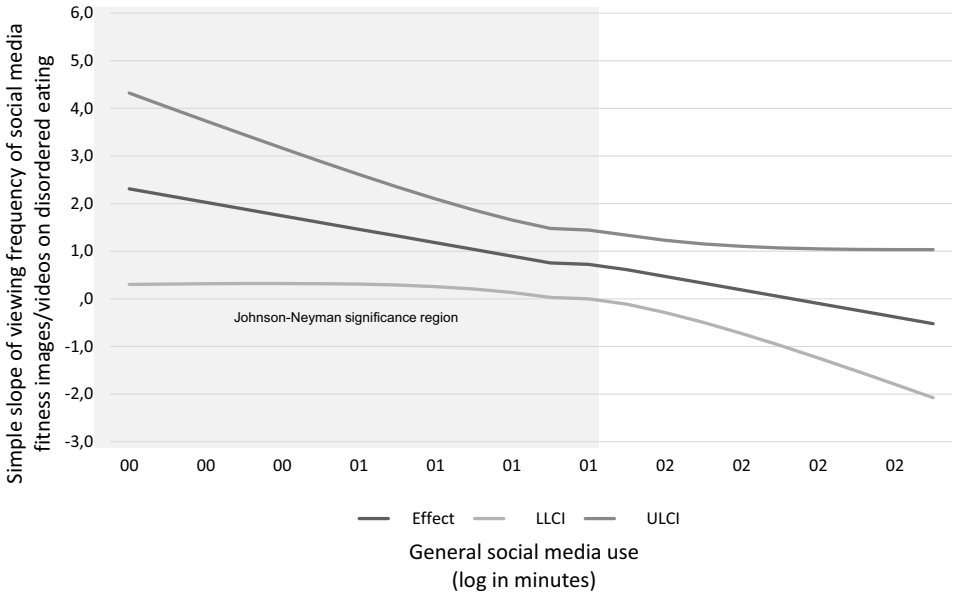
Tab. 1: Regression results (Study 2)

Hart, Leary, and Rejeski (1989). This trait measure determines the anxiety people feel when they believe their physique is being evaluated by others (Martin et al. 1997). From the SPAS, we obtained the five highest loading items in Martin et al.'s (1997) study (items 4, 6, 7, 9, and 12; e.g., "In the presence of others, I feel apprehensive about my physique/figure" and "It would make me uncomfortable to know others were evaluating my physique/figure"). Participants indicated their agreement with each item on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). We chose items with standardized factor loadings above .7 (items 4, 6, 7, 9, and 12). The Cronbach's α value of .90 indicated its good reliability.

3.2.2. Results

To test *H2* and *H3*, we used SPSS (Version 25) macro PROCESS model 5. The main advantage of PROCESS over standard regression analysis is that it can test mediation and moderation effects simultaneously (Hayes 2018). The model that contained the independent variables, viewing social media fitness images and general social media use, tested *H2*; the model with viewing social media fitness images and social physique anxiety provided the test of *H3* (see *Tab. 1*). In the analysis, we included gender, age and BMI as control variables. We also confirm the significant and positive effect of viewing social media fitness images on disordered eating, as in Study 1.

In *H2*, we predicted that consumers who score high on general social media use exhibit a stronger relationship between viewing social media fitness images and disordered eating, but the results instead suggest no significant effect of the interaction of SMFI/VF × GSMU on disordered eating (b = -1.91, n.s.). With a Johnson-Ney-



Notes: Black solid lines indicate the conditional effects of viewing social media fitness images/videos at different levels of general social media use (simple slopes). The grey lines frame the 95 % confidence interval. The slope estimates are significant in the shaded areas.

Fig. 2: Interaction results and regions of significance

Variables	*Effect (SE)*	*t*	*p*	*BootLLCI*	*BootULCI*
SMFI → Disordered eating	*2.31(1.02)*	*2.27*	*.02*	*.30*	*4.32*
SMFI → Social physique anxiety → Disordered eating	*.72(.25)*	-	-	*.28*	*1.28*

Tab. 2: Direct and indirect effects from the relationship between the IV Viewing frequency of social media fitness images/videos, the DV Disordered eating, and the mediator social physique anxiety (Study 2)

Note: n = 215. The table reports unstandardized regression coefficients. SE = standard error, BootLLCI = lower-level bootstrap confidence interval, BootULCI = upper-level bootstrap confidence interval. The 95 % confidence intervals were created using 5,000 bootstrap samples; confidence intervals that do not contain 0 indicate significant effects.

man technique however, we identify both significant and nonsignificant areas for low and medium levels of general social media use, with significant slopes of the effect of viewing social media fitness images on disordered eating. In contrast, those slopes are not significant for high levels of general social media use (see *Fig. 2*). Contrary to our prediction, the moderating effect is stronger for consumers with low and medium, not high, social media usage (*Fig. 2*). Thus, we must reject *H2*. [2]

To clarify why consumers might develop disordered eating habits after viewing fitness-related social media content, we examined the potential mediating role of social physique anxiety. In this mediation analysis, viewing fitness images on social media is positively associated with social physique anxiety (see *Tab. 1*), which in turn is positively associated with disordered eating, in support of *H3*. Our results show a significant indirect effect on disordered eating through social physique anxiety (see *Tab. 2*). We posit that social physique anxiety arises after viewing fitness-related content because consumers notice that their appearance does not correspond with the beauty ideal that their viewing behaviors cause them to internalize. The resulting sense that their physiques are being judged negatively by others may lead to disordered eating.

4. Discussion, implications, and future research

With this research, we have sought to elucidate the mechanisms by which viewing health-related images on social media affects consumers' disordered eating. Drawing on self-objectification theory and a conceptual model, we uncover both direct and indirect relationships.

4.1. Theoretical implications

Transformative service research generally supports the notion that services can enhance consumers' lives and well-being (e.g., Anderson et al. 2013; Rosenbaum et al. 2017). Our goal is not to refute or affirm that notion, but our findings shed some new light on the potentially detrimental effects of transformative services. In particular, we extend psychological and service research by focusing on the potential negative effects of transformative services on consumers and by examining some contingencies of these effects. With a demographically diverse sample of social media users, we show in two studies that viewing fitness images on social media directly affects disordered eating. This baseline effect is consistent with objectification theory, which predicts that people know they are being evaluated on their physical characteristics and therefore "generally wish to be perceived as attractive, or at least not as unattractive" (Hart et al. 1989, p. 96). Through socialization, people learn that physical attractiveness is associated with social and economic benefits (e.g., popularity, competence, positive personality traits), attributed to the person's self (Dion et al. 1972; Fredrickson and Roberts 1997). Therefore, they even might feel inferior if they perceive that their physical self does not correspond with cultural beauty ideals and may attempt to improve their physique, perhaps through harmful behaviors (Hart et al. 1989).

In addition to the unmediated effect, we observe an indirect effect through social physique anxiety, suggesting that viewing such images brings about anxiety related to the body, which leads to disordered eating. This finding implies that different causal pathways may exist between viewing fitness images and disordered eating.

Yet in contrast with our prediction in *H2*, the relationship between viewing fitness images and disordered eating actually is stronger among consumers who exhibit lower general social media usage, not those with higher levels. This surprising finding deserves further consideration; it might imply that heavy social media users see a vast range of content, including "normal-looking" people and bodies. Being exposed to more content then might make heavy users less susceptible to anxieties that result from seeing exaggerated beauty standards. However, consumers who exhibit lower levels of social media usage in general are exposed to a similar beauty ideal. These consumers may be particularly vulnerable to the development of eating disorders because their limited general social media usage prevents them from being exposed to portrayals of more realistic body images.

4.2. Managerial implications

Our results suggest efforts geared toward reducing the negative effects of health- and fitness-related social media use should focus on consumers who use social media less frequently. These consumers can be easily identified; when they view fitness images, the content should be accompanied by cautionary messages (e.g., "Remem-

ber, many body images you see are not real"). Framed messages or other interventions may make consumers less likely to internalize and seek to emulate the beauty and body standards they encounter on social media.

Our core finding of direct and indirect effects of viewing fitness images on disordered eating also has notable implications for consumer welfare and public policy. The outcome variable disordered eating is associated with considerable healthcare costs (Stuhldreher et al. 2012), so public policy makers likely want to consider demand- or supply-side measures to reduce the negative effects of using social media-provided health- and fitness-related services. Demand-side approaches might include consumer education, designed to make consumers less susceptible to the unrealistic beauty and body ideals that pervade social media. Supply-side measures could include tighter regulations over who can contribute which kinds of health- and fitness-related content, especially images depicting perfect bodies. The data for this study were collected in Germany; our results suggest that German lawmakers might consider a French-style approach to the issue of social media-induced eating problems. That is, since 2017, French law has stipulated that private individuals or commercial entities using photos of models must post a warning if the photos have been retouched (e.g., airbrushed, digitally altered) (Daldorph 2017). Alternatively, public policy makers might work with social media platforms to encourage them to adjust their search algorithms and content (Abroms 2019). For example, consumers conducting health- and fitness-related searches on social media arguably should be directed to pages that contain realistic body images. Finally, we believe the importance of our findings will increase as consumers continue to embrace health- and fitness-related social media. Due to the current corona virus pandemic, governments around the world have ordered gyms and amateur sports facilities to close, which will likely lead to an increase in both home fitness and use of health- and fitness-related social media.

4.3. Limitations and future research

This research includes some limitations that offer opportunities for further research. First, we collected data for our two studies with the help of graduate student research assistants, who sought social media users from one country, Germany. Young social media users represent an important target group; Germany is a critical market for social media platforms. However, continued studies still should use more representative samples and consider the effects of social media use in other countries. Such efforts might be particularly relevant in countries with a higher prevalence of disordered eating, such as Belgium and France (Preti et al. 2009), or in non-European countries.

Second, our study focussed on social media users' consumption of health- and fitness-related social media and its relationship with disordered eating. However, this more passive consumption experience, in some cases, may coincide with more active social media behavior, such as posting images of one's own body. Butkowski et al. (2019) report that social media users who seek audience responses to their posted body pictures are more likely to engage in disordered eating. Further research could investigate if our findings hold for social media users who exhibit this kind of active-passive social media behavior.

Third, our primary research goal was to establish the effect of viewing fitness images or videos on social media on disordered eating, so we tested a parsimonious model in Study 2, with only one mediator and one moderator. Continued research should expand our approach with less parsimonious models that include additional contingencies. Such models might enhance understanding of the mechanisms by which viewing fitness images or videos on social media leads to negative consumer well-being outcomes, especially disordered eating. Because disordered eating is an important variable in its own right future research could also relate it to the use of fitness wearables (Wolf et al. 2020) and health and fitness images from non-social media contexts (e.g., TV programs, fitness magazines).

Notes

[1] Because the variable BMI has no direct effect on the dependent variable ($b = .04$, $p > .05$), we did not include BMI as a control variable.

[2] Because of the theoretical possibility that the independent variable is predicted by the moderator variable, we assessed the correlation between them; the two variables were found to be uncorrelated ($r = .06$, $p > .05$).

Appendix

Authors	Sample/procedure	Media considered	Health-related consequences considered	Findings	Mediator(s) considered	Moderator(s) considered
Tiggemann and Miller 2010	*n* = 156 female high school students; paper-pen-questionnaire	Magazine, television, internet exposure (YouTube, MySpace, Facebook, Google, NineMSN)	Drive for thinness, weight satisfaction	Internet appearance exposure positively affects drive for thinness and weight dissatisfaction.	Yes (internalization of thin ideals, appearance comparison)	No
Smith et al. 2013	*n* = 232 college females; online survey	Maladaptive Facebook use (tendency to seek negative social evaluations or engage in social comparisons)	Bulimic symptoms and over-eating episodes	Maladaptive Facebook use positively affects bulimic symptoms and episodes of over-eating.	Yes (body dissatisfaction, bulimic: partially; over-eating episodes: fully)	No
Tiggemann and Slater 2013	*n* = 1,087 high school girls; questionnaire	Internet exposure, social networking sites (MySpace, Facebook), Facebook users/non-users	Body image concerns (internalization of the thin ideal, body surveillance, drive for thinness)	Internet exposure and social networking sites (MySpace and Facebook) positively affect all indicators of body image concerns. Facebook users have higher levels of all indicators of body image concern than Facebook non-users.	No	No
Ferguson et al. 2014	*n* = 237 girls; paper-and-pencil survey, follow-up telephone interview	Social media use, television exposure, peer competition, BMI	Eating disorder symptoms, body image dissatisfaction, life satisfaction	Social media use does not affect eating disorders. Peer competition positively affects body dissatisfaction and eating disorders.	Yes (peer competition; no effect)	No
Hummel and Smith 2014	*n* = 185 undergraduate students (78% female); online survey	Facebook feedback seeking	Disordered eating attitudes	Facebook feedback seeking positively affects disordered eating attitudes over time.	No	Yes (Facebook status and comment coding)
Mabe et al. 2014	*n* = 960 young women; self-report survey	Facebook use, internet use (Facebook vs. alternate internet site)	Disordered eating and disordered eating attitudes and feelings (weight/shape preoccupation, state anxiety, urge to exercise)	Facebook use positively affects disordered eating, the maintenance of weight/shape concerns, and state anxiety compared with an alternate internet activity. Internet use in general positively affects urge to exercise.	No	No
Meier and Gray 2014	*n* = 103 middle and high school females; paper-and-pen questionnaire	Total internet use, total Facebook use, Facebook appearance exposure (photo-based activities)	Internalization of thin ideal, appearance comparison, weight satisfaction, drive for thinness, self-objectification	Facebook appearance exposure positively affects internalization of the thin ideal, self-objectification, and drive for thinness and negatively affects weight satisfaction.	No	No
Cohen and Blaszczynski 2015	*n* = 193 female first-year university students; online survey	Appearance comparison	Eating disorder risk, body image dissatisfaction change	Facebook use positively affects eating disorder risk and baseline body image dissatisfaction. Appearance comparison influences change in body image dissatisfaction for those exposed to Facebook but not conventional media.	No	Yes (type of exposure (Facebook use/convention-al media))
Fardouly and Vartanian 2015	*n* = 227 female university students; online study	Facebook usage	Body image concerns (body dissatisfaction, drive for thinness)	Facebook usage positively affects drive for thinness, mediated by appearance comparisons in general.	Yes (appearance comparisons in general, comparisons with target groups [family members, close friends, distant peers, celebrities])	No
Walker et al. 2015	*n* = 128 college-aged women; online survey	Facebook intensity (time spent on Facebook, number of Facebook friends, integration of Facebook into daily life), online physical appearance comparison, online fat talk	Disordered eating	Facebook intensity negatively affects disordered eating; this effect is positively affected by online physical appearance comparisons. Online physical appearance comparisons and online fat talk positively affect disordered eating.	Yes (online physical appearance comparison, online fat talk)	No

Notes: BMI = body mass index; SNS = social networking service.

Tab. A1: Synthesis of health-related social media use literature

Authors	Sample/procedure	Media considered	Health-related consequences considered	Findings	Mediator(s) considered	Moderator(s) considered
Lewallen and Behm-Morawitz 2016	*n* = 118 women; online survey	Fit pin boards, exercise motivations, endorsement of an ideal female body type	Extreme weight-loss behavior, social comparison	Fitness boards on Pinterest positively affect intentions to engage in extreme weight-loss behaviors. Endorsement of an ideal female body type (EIB) positively affects both social comparison and intentions to engage in extreme weight-loss behaviors; BMI moderates the EIB–weight loss relationship.	No	Yes (potential disordered eating behaviors, symptoms of anorexia nervosa, bulimia nervosa); no interaction for age or BMI
Cohen et al. 2017	*n* = 259 young women; online survey	SNS use (Facebook and Instagram), Facebook appearance exposure, Instagram accounts (health and fitness, celebrity, travel)	Body image concerns (appearance evaluation, thin-ideal internalization, appearance comparison, body surveillance, drive for thinness)	Appearance-focused SNS use positively affects body image concerns. Health and fitness accounts on Instagram positively affect thin-ideal internalization and drive for thinness. Celebrity accounts positively affect thin-ideal internalization and body surveillance.	No	No
Fardouly et al. 2017	*n* = 276 young women; online study	Instagram use	Drive for thinness, body dissatisfaction, self-objectification	Instagram use positively affects self-objectification but does not affect drive for thinness or body dissatisfaction (only mediated by internalization of societal beauty ideals and appearance comparisons to celebrities). Viewing fitspiration images on Instagram positively affects drive for thinness and body dissatisfaction but does not affect self-objectification.	Yes (internalization of the societal beauty ideal, appearance comparison tendency in general, appearance comparisons)	No
Hanna et al. 2017	*n* = 1,104 undergraduate women and men; paper-and-pencil survey	Facebook use (minutes, passive use, and active use)	Mental health (depression, anxiety), self-esteem, body shame	Facebook use negatively affects mental health and self-esteem and positively affects body shame, for both women and men.	Yes (social comparison)	No
Holland and Tiggemann 2017	*n* = 203 women; online survey	Posting fitspiration images	Disordered eating, compulsive exercise	Posting fitspiration images positively affects disordered eating and compulsive exercise.	No	No
Turner and Lefevre 2017	*n* = 680 females; online survey	Social media use	Orthorexia nervosa	Instagram use positively affects tendency toward orthorexia nervosa.	No	No
Cohen et al. 2018	*n* = 259 young women; online survey	General SNS usage (time spent), SNS selfie activity (selfie-taking, selfie-posting, photo investment, photo manipulation)	Disordered eating (bulimia), drive for thinness, body satisfaction	General SNS use and SNS photo activity (photo investment) positively affect bulimia symptomatology (significantly moderated) and body dissatisfaction (not significantly moderated).	No	Yes (self-objectification)
Mills et al. 2018	*n* = 110 female undergraduate students; labor experiment	Social media use (taking and uploading untouched/retouched selfies)	Mood (anxiety, depression, confidence) and body image (feelings of fatness, physical attractiveness, body size satisfaction)	Taking and posting selfies to social media positively affects anxiety and negatively affects confidence and physical attractiveness.	No	No

Notes: BMI = body mass index; SNS = social networking service.

Tab. A1: Synthesis of health-related social media use literature (cont.)

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Keywords

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