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**Idealized Female Beauty, Social Comparisons, and Awareness Intervention Material:
Evidence for Preventive Effects in Young Women**

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Abstract

Previous research indicates that exposure to the idealized thin media standard of female beauty can contribute to body dissatisfaction, negative self-perception, depressed mood, and disordered eating. Importantly, studies have revealed that social comparison processes underlie this negative media effect: Women routinely compare themselves with the encountered mass-mediated thin ideals which, in turn, elicits negative consequences. While there are a multitude of studies on this topic, little is known about how this negative effect can be counteracted. We tested whether watching an awareness intervention video highlighting the artificial nature of mass-mediated idealized female beauty reduces social comparison processes in a subsequent situation. As a replication of previous research, we found that exposure to the awareness intervention material reduced social comparison processes. As a supplement, analysis revealed that this effect was mediated through a change in the ideal self: Watching the awareness material elicited a more realistic perception of what specific body individuals ideally wanted to possess. This more realistic ideal-self standard, in turn, reduced social comparison processes.

Keywords: thin ideal, social comparisons, awareness, intervention, body image

Idealized Female Beauty, Social Comparisons, and Awareness Intervention Material: Evidence
for Preventive Effects in Young Women

Unhealthy dieting, excessive weight and shape concerns, and body dissatisfaction were identified as important risk factors associated with an increased probability of the onset, greater severity, and longer duration of health problems (World Health Organization [WHO], 2004). Especially girls and young women report substantial levels of body dissatisfaction (Levine & Smolak, 2002). This finding has raised serious concerns as body dissatisfaction is associated with negative self-perception, depressed mood, and disordered eating (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999).

The influence of the mass media has received special scholarly interest, because the mass media typically convey unrealistic images of female beauty (Levine & Harrison, 2009; Schemer, 2003). For example, over the years, the portrayal of the female body has become thinner, while in reality, the body mass index of women in Western societies has actually increased (Silverstein, Perdue, Peterson, & Kelly, 1986). Importantly, previous research has shown that exposure to the media's idealized standard of female beauty can increase body dissatisfaction (Grabe, Ward, & Hyde, 2008). Studies have also revealed that social comparison processes (Festinger, 1954) might underlie this negative media effect. The assumption is that women routinely compare themselves with the encountered mass-mediated thin ideals. Due to the fact that most portrayals of female bodies in the media display unattainable shapes for the average woman (Veldhuis, Konijn, & Seidell, 2014), social comparisons with idealized images of female beauty have been assumed to trigger negative consequences.

Consistent with the WHO guidelines on mental disorder prevention—mental disorder prevention targets those determinants that have a causal influence, predisposing individuals to

the onset of mental disorders (WHO, 2004)—, previous communication research has already tested whether media interventions can reduce detrimental social comparison processes to idealized images. These interventions involve an attempt to prevent the internalization of the thin ideal standard as an appearance ideal and reduce the frequency of social comparisons with idealized media models (Halliwell, Easun, & Harcourt, 2011; Posavac, Posavac, & Weigel, 2001).

In the present study, we tested whether watching an awareness video highlighting the artificial nature of mass-mediated female beauty reduces social comparison processes. We used an experimental design where participants watched an awareness video or did not. In a subsequent situation, they were presented with idealized models with artificially created idealized beauty. We measured whether or not watching the awareness material reduced social comparisons with the artificial models. The present study had two goals: First, we wanted to replicate previous research showing that exposure to awareness intervention material reduces social comparison processes. Although there is some evidence, this evidence rests on a thin pillar. We thus try to contribute toward clarifying these findings (Posavac et al., 2001, p. 337) by presenting additional evidence. Second, we follow the call by recent research mentioning that future studies should “evaluate the psychological processes” (Halliwell et al., 2011, p. 401) underlying this effect: We tested whether the awareness material’s effect on the reduction in social comparison processes is mediated through the altering of an individual’s appearance ideal. In fact, we hypothesized that watching the awareness material would elicit a more realistic perception of what specific body appearance individuals ideally wanted to possess.

Idealized Body Images and Their Effects

The public discussion on the negative effects of media portrayals on young women's self-perception draws from the fact that the media present rather unrealistic pictures of female beauty (see Levine & Harrison, 2009, for a review of content analyses). For example, the portrayal of the female body has become thinner over the last few decades, while in reality, the body mass index of women in Western societies has actually increased (Silverstein et al., 1986). At the same time, eating disorders such as anorexia or bulimia nervosa have increased as well (Polivy & Herman, 2002).

This observation has stimulated a large body of research investigating whether exposure to idealized media images has negative consequences (Levine & Harrison, 2009). In an important study, Groez, Levine, and Murnen (2002) conducted a meta-analysis on 25 experimental studies investigating the effect of thin media portrayals on young women. The analysis revealed a small, but significant negative effect, showing that body image was significantly more negative after watching thin media images. However, there are also studies that found no (Holmstrom, 2004; Martin & Kennedy, 1993) or even positive effects of these media portrayals on young women (Halliwell, Dittmar, & Howe, 2005). Joshi, Herman, and Polivy (2004) for example showed effects of thin-body advertisements only on self-esteem, but not on the self-image of their participants. One reason for this result could be the fact that idealized media images do not affect the actual self, but the ideal self of young women. The idea is that exposure to thin media ideals shapes young women's perceptions of how they want to look. Several studies provide supporting empirical evidence for that claim. These studies found correlations between exposure and the internalization of the thin-body ideal (Thompson & Heinberg, 1999; Thompson & Stice, 2001).

When discussing the effects of media images on recipients, the terms "idealized" or "unrealistic" are often used. It refers to the fact that most of the images about beauty that we see

in the media are digitally modified in order to look flawless. As Blake (2015) noted, media portrayals of women are “digitally manipulated art products” (p. 208). Digital editing is not only common in advertisements or on magazine covers, but has increasingly been used for private pictures in social networks as well (Wheeler, 2002). This raises the question as to whether recipients are aware of the artificial nature of most media images. Importantly, especially young women seem to accept media portrayals as a valid source for assessing beauty standards (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). Based on these findings, it is important to note that when we talk about comparisons with media images, this often means comparison with unrealistic portrayals of beauty.

Social Comparison Processes

As already noted, research has revealed that social comparison processes underlie negative media effects on body satisfaction and related outcomes (Festinger, 1954; Posavac, Posavac, & Posavac, 1998). The assumption is that women routinely compare themselves with the encountered mass-mediated thin ideals, which elicits negative consequences. For a thorough understanding of the social comparison process, a discussion of what parts of the self can be affected by the mass-mediated thin ideal is necessary.

There are different domains of the self that people hold beliefs about (Higgins, 1987, 1989). Higgins divides the individual self-concept into three parts: The *actual self* represents how an individual currently perceives him-/herself on a certain dimension (e.g., her body image). Conversely, the *ideal self* contains the features that people ideally want to possess and thus try to aspire to. Finally, the *ought self* describes attributes that individuals believe they should possess due to societal standards (“sense of duty”, Higgins, 1987, p. 321). Self-discrepancy occurs when inconsistencies between these perceptions arise, which is experienced as unpleasant by the

individual: In accordance with cognitive dissonance (Festinger, 1965) and balance theory (Heider, 1958), people are motivated to reduce self-discrepancies. Most of the time, individuals try to push their actual self in the direction of their ideal or ought self (Higgins, 1989).

One major way to alter perceptions about the different domains of the self is through comparison with other individuals. Social comparison theory originally suggested that people compare themselves with others for the motive of self-evaluation (Festinger, 1954; Hakemiller, 1966): If people want to evaluate their abilities or assess how to behave adequately in social situations, they turn to others for orientation (Gibbons, Blanton, Gerrard, Buunk, & Eggleston, 2000). A second motive that was already suggested by Festinger (1954) was self-improvement, which is mostly driven by self-discrepancy: If, for example, a woman rates herself as moderately thin, but has a very skinny ideal in mind, it is likely that she will develop a need for self-improvement on that dimension. In order to gain insight into how to become better, people compare themselves with others who are better off; in other words, they engage in upward comparisons.

The motives of self-evaluation and self-improvement trigger a search for valid information (Gibbons et al., 2000; Taylor, Wayment & Carillo, 1996; Wood, Taylor, & Lichtman, 1985), since people want to accurately assess how they are or how they can become better. When comparing oneself with idealized media images, this idea of gathering valid information for the self is compromised, since these images do not provide realistic beauty standards (Veldhuis et al., 2014).

With the motive of self-evaluation, Festinger (1954) assumed that people would behave rationally, insofar as they would interpret social information gathered through comparisons rather objectively in order to accurately assess their abilities and opinions. Some authors argued,

however, that in certain situations, the need for a positive (in contrast to an accurate) self-evaluation could predominate (Hakmiller, 1996; Wills, 1981). This further comparison motive has been called self-enhancement. Studies in this context showed that people engage in downward comparisons when their self-esteem is threatened (Hakemiller, 1966). Yet, because most media portrayals of female bodies promote unattainable shapes for the average woman (Veldhuis et al., 2014), these comparison processes are most likely *upward* in nature. Consequently, related research focuses on upward and to some extent lateral (same-level) comparisons (Tiggemann, 2014).

While early research conceptualized social comparison as a rather goal-oriented strategy to fulfill these motives, later research showed that people also compare themselves with others when the comparison is of no diagnostic value for the task at hand; social comparisons occur spontaneously without an accompanying intention to start (Gilbert, Giesler, & Morris, 1995). Consistently, Mussweiler, Rüter, and Epstude (2005) argued that the multitude of social information encountered in everyday life (e.g., media portrayals) is almost automatically evaluated by relating it to the self.

Awareness Intervention Material

As discussed, there is a large body of research that points to the fact that comparing oneself with idealized media beauty images can have negative consequences on individuals. As it seems unlikely that media's depiction of unrealistic beauty images will change any time soon, it is important to investigate strategies to counteract these negative effects. One possible strategy is to raise awareness of the fact that these images are unrealistic: Though it is widely acknowledged that professional media images as well as celebrities' private snapshots are digitally tampered with, studies show that people are surprisingly incapable of detecting such distortions (Farid &

Bravo, 2010). Considering the large body of research on the detrimental effects of idealized media images on young women, there are surprisingly few studies that have investigated the benefits of awareness material in reducing dysfunctional social comparisons.

In a seminal study, Posavac and colleagues (2001) tested the consequences of three interventions that were designed to prevent women from experiencing body image disturbance when exposed to idealized female beauty. These three interventions had the goal of leading women to see idealized female beauty as unrealistic and dissimilar to others. Exposure to these intervention materials should render idealized female beauty images as inappropriate comparison targets. The first intervention video highlighted the artificial nature of a model's beauty, which is typically enhanced through a variety of techniques such as professional make-up, hair styling, lighting, and photographic effects such as airbrushing. The second intervention presented the argument that most women are genetically predisposed to be heavier than fashion models. The third intervention used a combination of the arguments presented in the first and the second intervention. Analyses indicated that all three interventions decreased the likelihood of social comparisons.

In a further important study, Halliwell and colleagues (2011) investigated whether a short intervention message could reduce detrimental exposure effects among adolescent girls. This study used a brief video intervention identifying the artificial nature of media images. The authors used a short advertising clip that was produced by *Dove*. As the authors noted, this intervention video was comparable with the "artificial beauty" intervention in the study by Posavac and colleagues (2001). The clip displayed the alteration that goes into creating an idealized body image. The intervention spot focused on alterations to a model's face. It showed how facial dimensions can be digitally altered. This intervention video was shown to half of the

participants immediately before they viewed idealized models in a subsequent situation.

Analyses indicated that watching the intervention video reduced social comparisons with the idealized models.

Although not targeted directly at the social comparison process, Park, McSweeney, and Yun (2009) tested the effects of public service announcements (i.e., sponsored by a nonprofit organization) and alignment ads (i.e., where a commercial brand sponsors a social cause and a nonprofit organization related to the cause). The researchers were able to show that the public service announcement emphasizing the genetic diversity of body types improved women's body satisfaction. However, it did not influence the "ideal female body norm" (i.e., the ideal self). The alignment ad was a variation of the public service announcement. The public service announcement and the alignment ad shared the same layout and text. The only difference was the source of the message. Exposure to the alignment ad elicited a similar effect on body satisfaction. Importantly, the alignment ad influenced the ideal self as well, meaning that women reported a larger (i.e., more realistic) body type as the ideal after exposure.

However, there is also evidence in the opposite-effect direction. Harrison and Hefner (2014) found what they called a boomerang effect of retouching awareness. Original unretouched photographs were manipulated by a professional to produce a retouched version of the stimulus. Adolescents were randomly allocated to watch the unretouched or retouched images. In one additional condition, the retouched images were explicitly labeled as such. Analyses indicated that objectified body consciousness increased and physical self-esteem decreased among male and female adolescents in the retouched-aware condition only. Although this study did not investigate social comparison processes, it provides evidence that awareness material might fail to produce the intended effects (see also Bissell, 2006).

Taken together, the bulk of empirical evidence supports the hypothesis of a reduction in social comparison processes. Nevertheless, the evidence is mixed. Therefore, the first goal of the present study was to replicate the basic beneficial effect of awareness material exposure to idealized images on social comparisons.

Hypothesis 1: Exposure to awareness intervention material will reduce social comparisons in a subsequent exposure situation.

Underlying Mechanism

As Park and colleagues (2009) noted, what “has rarely been researched is the process occurring between exposure to thin images and the social comparison” (p. 679). The present study contributes to this lack of knowledge by testing the underlying mechanism of the effect specified in hypothesis 1.

As already noted, intervention treatments used in previous research involve an attempt to prevent the internalization of the thin ideal standard as an appearance ideal in order to reduce the frequency of social comparisons with idealized media models (Halliwell et al., 2011; Posavac et al., 2001). This notion points to the appearance ideal (i.e., the ideal self) as a mediator variable: Awareness intervention material such as the spot used by Posavac et al. (2001) and Halliwell et al. (2011) has been assumed to debunk the artificial character of beauty portrayals. With that, it should enhance recipients’ understanding that media portrayals do not reflect a realistic, attainable ideal beauty image. A more realistic ideal-self-perception, in turn, should make social comparisons with idealized images less likely, because it helps recipients to infer that these images do not present valid social information for comparison. Although this assumption is (at least implicitly) mentioned in prominent research papers (see above), it remains to be tested empirically. Based on this reasoning, we formulated our second hypothesis:

Hypothesis 2: Ideal-self-perception mediates the awareness material's effect on social comparisons: Exposure to awareness material elicits a more realistic, attainable ideal beauty image, which in turn makes social comparisons less likely in a subsequent exposure situation.

Method

We conducted an experiment to test the consequences of watching awareness intervention material on social comparison processes and the underlying mechanism. Participants watched either an awareness video or a control video. Afterwards, we measured whether or not they engaged in social comparison processes in a subsequent media exposure situation.

Participants

A total of 184 women participated in the web-based experiment. The participants ranged in age from 18 to 33 ($M = 22.06$, $SD = 2.75$). Most participants were college students (82.6%) and showed a "normal range" body mass index ($M = 21.19$, $SD = 2.24$) according to the WHO classification.

Experimental Manipulation

Participants allocated to the awareness group ($n = 95$) watched an awareness video. Similar to the intervention spot used by Halliwell and colleagues (2011), we used a short video clip in which the idealized nature of mass-mediated beauty standards was unmasked. Although the spot used by Halliwell and colleagues focused on a model's face, our "Body Evolution" spot (created by the same director, who also created the "Dove Evolution" spot used by Halliwell et al.) used in the present study focused on the whole body. Our intervention spot had over 40,000,000 views on YouTube (July 2015) and has been massively shared on social network sites such as Facebook. This fact contributes to the external validity of the target intervention video.

The awareness material vividly shows how real female beauty changes due to modern techniques such as clever lighting, make-up, and digital manipulation. During the video, a young woman with average beauty changes into a magazine model with ravishing beauty. The focus of the awareness spot lay on the whole body of the woman. The spot used time-lapse and did not use verbal comments of the motion picture being shown.

Participants allocated to the control group ($n = 89$) watched a video about the origin of the planet Earth. Consistent with the awareness video, the control spot had a similar length and professional appearance, no verbal comments, and also used time-lapse. Beauty or related concepts were not mentioned in the control spot.

Procedure

Participants watched one of the two video spots first. After watching the video, the domains of the self were measured. Next, all participants were shown a total of six pictures of female models. Although the specific content of these pictures varied to increase generalizability (face and body images, normally dressed models and models in sexy underwear, different hair and eye color, different eye gaze), all models represented the Western ideal with ravishing, artificially created beauty. We introduced this part of the study by noting that “we will now show you a few images.” We asked our participants to “look closely” at the images because “afterwards” we would be interested in their “opinion.” After this, social comparisons were measured. This order of data collection is consistent with the causal claims made in the theory section (i.e., the ideal self as a mediator). The questionnaire also included standard demographic variables measured at the end.

Measures

Social comparisons. Immediately after exposure to the images, participants were asked on a 7-point scale ranging from *I totally disagree* (coded as 1) to *I totally agree* (coded as 7) about their agreement with two statements in an attempt to measure social comparison processes occurring during the watching of the six pictures (“While watching the females in the pictures, I was wondering about how I could improve my appearance,” “While watching the females in the pictures, I thought about what I could do to look as good”; $M = 3.07$, $SD = 1.82$, $\alpha = .89$). As these items imply that participants compared themselves to others from which they thought that they are more beautiful than they are, we can call this kind of comparison as “upward.” Furthermore, we focused on the motivational aspect of these comparisons as they can be an indicator for whether recipients accept the media image as a valid comparison standard (Gibbons et al., 2000; Taylor, Wayment & Carillo, 1996; Wood, Taylor, & Lichtman, 1985).

Domains of the self. We collected data for three domains of the self (Higgins, 1989). To visualize different body images, we used a scale (see Davis, 1985) showing a row of nine female figures, representing nine different somatotypes from ectomorphic (thin) to mesomorphic (normal) to endomorphic (obese). Participants were presented with the visualizations of the nine body images ranging from very thin (coded as 1) to very obese (coded as 9). We asked them to indicate the answer to three questions used to measure the actual, ideal, and ought domain of the self. This is a standard procedure that has already been used in previous research (e.g., Park et al., 2009).

Actual. “Which image corresponds to your own body?” ($M = 4.00$, $SD = 1.06$).

Ideal. “Which image characterizes your desired body?” ($M = 3.05$, $SD = 0.77$).

Ought. “Which body do you think most females try to have?” ($M = 2.65$, $SD = 0.93$).

Although our theoretical arguments highlight the importance of the ideal self, we included the other two self domains, since research has shown that all three domains are responsible for the need to compare oneself with other individuals. The advantage of a differentiation of the different domains of the self has been noted in previous research (Park et al., 2009, p. 694).

Statistical Analysis

We used PROCESS to test the predicted parallel multiple mediator model (Hayes, 2013), where the antecedent experimental condition (i.e., watching the awareness video or not) was modeled as influencing consequent social comparisons directly as well as indirectly through the three domains of the self (ideal, actual, ought). A visual depiction of the model is provided in the Results section (Figure 1). We report unstandardized regression coefficients, as recommended by Hayes (2013).

Results

Randomization Check

We tested for potential differences (using t-tests and cross-tab analyses) on age, education/college student, height, weight, body mass index, and nationality. There were no differences between the experimental conditions (all p 's > .34).

Effects on Social Comparisons

Hypothesis 1 predicted that watching an awareness video would reduce social comparisons. We used the total effect of the experimental condition (0 = control, 1 = awareness material) on social comparisons to test this hypothesis. Consistent with the hypothesis, watching the awareness spot decreased social comparisons, $Coeff = -0.706$, $SE = 0.264$, 95% CI [-1.227, -0.185], $t = -2.675$, $p = .008$. This analysis supports hypothesis 1.

Ideal Self as a Mediator

Hypothesis 2 predicted that the ideal self mediated the awareness material's effect on social comparisons. Exposure to the awareness intervention material was hypothesized to influence the ideal self, which, in turn, should make social comparisons less likely. Consistent with this prediction, awareness material exposure influenced the ideal self, $Coeff = 0.312$, $SE = 0.112$, 95% CI [0.092, 0.533], $t = 2.800$, $p = .006$. The positive sign of the coefficient indicated that individuals watching the awareness video chose a higher number on the ideal-self scale (i.e., a larger, more realistic body type). Ideal self, in turn, decreased social comparisons, $Coeff = -0.945$, $SE = 0.210$, 95% CI [-1.359, -0.530], $t = -4.496$, $p < .001$. This finding indicated that a more realistic ideal-self-perception reduced social comparisons with the idealized models. Importantly, the indirect effect was significant using bootstrap confidence intervals, $Coeff = -0.295$, $SE = 0.123$, 95% CI [-0.595, -0.097]. This supports hypothesis 2.

Importantly, the direct effect of awareness material exposure on social comparison failed to achieve significance, $Coeff = -0.413$, $SE = 0.253$, 95% CI [-0.912, 0.086], $t = -1.634$, $p = .104$. This indicates that watching the awareness material reduced social comparisons indirectly through a more realistic conception of the ideal self. Figure 1 presents a visual depiction of the results.¹

Additional Analysis

We also included the actual and ought self into the model. Watching the awareness material did not significantly influence actual self, $Coeff = 0.174$, $SE = 0.156$, 95% CI [-0.133, 0.481], $t = 1.119$, $p = .265$, nor did it influence ought self, $Coeff = 0.219$, $SE = 0.136$, 95% CI [-0.051, 0.488], $t = 1.603$, $p = .111$. However, actual self, $Coeff = 0.433$, $SE = 0.152$, 95% CI [0.133, 0.734], $t = 2.845$, $p = .005$, as well as ought self, $Coeff = -0.336$, $SE = 0.144$, 95% CI

$[-0.621, -0.052]$, $t = -2.333$, $p = .021$, influenced social comparisons. This indicated that the higher the value on actual self (i.e., the heavier the perceived actual body shape) and the lower the value on ought self (i.e., the thinner the perceived ideal that is held by other women), the more individuals engaged in upward social comparisons. Due to the absence of significant exposure effects on actual and ought self, it comes as no surprise that the indirect effects through actual self, $Coeff = 0.075$, $SE = 0.075$, 95% CI $[-0.044, 0.245]$, and ought self, $Coeff = -0.074$, $SE = 0.056$, 95% CI $[-0.228, 0.007]$ failed to achieve significance.²

Discussion

Exposure to the idealized thin media standard of female beauty can have detrimental consequences, for example, on body dissatisfaction, negative self-perception, depressed mood, and disordered eating. Research has theorized that social comparison processes underlie this negative media effect. The assumption has been that women routinely compare themselves with idealized images which, in turn, elicits negative consequences. We tested whether watching an awareness intervention video highlighting the artificial nature of idealized female beauty would reduce social comparison processes in a subsequent situation when encountering other unknown idealized models. As a replication of previous research (Posavac et al. 2001; Halliwell et al., 2011), we found that exposure to awareness material indeed reduced the motivational aspects of upward social comparisons with idealized beauty images. Importantly, we predicted and found that this effect was mediated through an alteration of the ideal self: Watching the awareness material elicited a more realistic perception of what specific body women ideally wanted to possess, which in turn reduced social comparisons.

Since Park and colleagues (2009) noted the wording of their “ideal female-body size measurement” as a limitation of their study, we included the three domains of self (Higgins,

1989) into our analysis. They argued that future studies would benefit greatly from considering this issue. Following Park et al.'s recommendation, we measured the actual, ideal, and ought self as separate dimensions of the self-concept, which allowed us to disentangle the effects of these different domains. We found that watching awareness material only had an effect on the ideal self, but not on the actual and ought self. The non-existing influence on the actual self is quite plausible: Watching a video that debunks the artificial creation of media beauties does not necessarily change how women perceive their own bodies—yet, it influences what body they find desirable.

The absence of an effect on the ought self is interesting: It seems that while participants allow themselves to be influenced regarding how they perceive desirable beauty, they do not concede this (positive) effect to other women. Stated differently, awareness material was an effective way to alter young women's perceptions of what beauty standard they *personally* wanted to aspire to, but awareness material was not capable of changing what young women felt *others* wanted to aspire to. As awareness videos can be seen as educational content and thus as desirable persuasive media messages, the finding of the different effects on the ideal and ought self has a high correspondence with a phenomenon that has been termed the *first-person effect* (Golan & Day, 2008): When a media message is assessed as positive or desirable, people tend to estimate that it has a greater influence on themselves than it does on others. A self-enhancement bias has often been noted to be (at least partly) responsible for this perception bias (Perloff, 2009): There is a human tendency to perceive the self in a positive way or at least as being better than other people. Due to the fact that it might have been perceived as positive to be personally influenced by the awareness material, the ideal self might have been more elastic to influences than the ought self was (i.e., the effect on others' beauty standards).

It is important to note that the notion of a first-person effect is limited in the present study, because we measured *actual* media effects on the ideal and ought self. We did not rely on (the discrepancy between) the *perceived* influence on others and the self, as it would have been necessary to have undertaken a first-person effect study. Nevertheless, the investigation of the role that this phenomenon might play in the investigated process would be a good starting point for future research.

Limitations

As with all studies, the present study has some limitations. First, we used a convenience sample of young women. Most participants were college students and showed a “normal range” body mass index according to the WHO classification. Although we think that the basic mechanism revealed in the present study would be detectable using a more representative sample as well, future research should replicate our findings with a more representative sample of young women. Related to this limitation, we did not investigate the effects of awareness material in adolescents. This would be a good starting point for future research as well.

Second, the present study focused on the study of the ideal self as a mediator. Future research should additionally investigate other factors moderating the influence of awareness material exposure. Several moderating factors have been identified for the effect of media images on individuals’ self-perceptions such as self-esteem (Schemer, 2007) or perceived attainability (Joshi et al., 2004).

Third, although the use of an experimental design allowed us to conclude that watching the awareness video had a causal effect on the ideal self and social comparisons, the causality between the ideal self and social comparisons cannot be proven. This problem occurs on a regular basis when investigating mediation models in experiments (see Hayes, 2013). We were

aware of this problem prior to the data collection. This was the reason why we collected data for the ideal self before collecting the data for social comparisons. This is consistent with our causal claims. Furthermore, we are not able to rule out the possibility that the assessment of the three dimensions of the self before the assessment of social comparisons influenced the scores of the social comparisons measure. Although order effects can be problematic in the social comparisons context (e.g., Häfner et al., 2008), the results are consistent with our theoretical predictions. Nevertheless, future research should investigate the role of order of data collection.

Fourth, our social comparisons measure has some limitations: We focused on a subsequent *media exposure* situation. Unfortunately, we are not able to test whether or not watching the awareness video reduces social comparison processes *outside* the media exposure context (i.e., with real people in everyday life). Future research should elaborate on this potential consequence. Furthermore, the items we used (e.g., “During watching the females on the pictures, I thought about what I can do to look as good.”) imply upward comparison processes and do not provide a measure of “pure” social comparisons (e.g., “I compared myself with the females on the pictures”). Although the latter is of importance as well, we relied on “upward”-items due to the following reason: Most media portrayals promote unattainable shapes for the average woman (Veldhuis et al., 2014). As already noted, these comparison processes are most likely upward in nature. Consequently, previous research (and the present study) focused on upward comparisons (Tiggemann, 2014). Furthermore, we focused on the motivational aspect of these comparisons as an indicator for whether the idealized image is accepted as valid comparison standard. For further research on the topic, it would be interesting to look further into the consequences of upward comparisons (e.g., feelings like envy or frustration).

Conclusions

Research has found that young women report substantial levels of body dissatisfaction (Levine & Smolak, 2002). This finding has raised serious concerns, as body dissatisfaction correlates with other negative outcomes such as negative self-perception, depressed mood, and disordered eating (Thompson et al., 1999). As the media portray artificially created idealized depictions of female bodies, research investigating the role of the mass media in this regard is important. Exposure to idealized standards of female beauty can be deemed as a risk factor associated with an increased probability of the onset, greater severity, and longer duration of health problems (see WHO, 2004). A targeted research effort into the possible preventive effects of media content is thus of high relevance. It has long been suggested (but it has also long remained untested) that the mass media, often regarded as one of several causes of public health problems, could contribute to prevention and intervention. Thus, a thorough understanding of the processes leading to beneficial effects is necessary in order to develop and improve the effectivity and efficiency of intervention campaigns.

Modern media environments provide a good opportunity to disseminate awareness material to a great number of individuals. For example, the spot we used in the present study had over 40 million views on YouTube (July 2015) and has been massively shared on social network sites such as Facebook. The goal of intervention campaigns in new, digital media environments is that awareness material becomes popular through a viral process of sharing, typically through video sharing websites or social networking sites. Nevertheless, new media environments possess a disadvantage that they share with “traditional” media environments (e.g., television and magazines). Awareness material must compete against the torrent of images and statements that glorify the idealized Western beauty standard. The positive changes that the awareness

material elicited in the present study must be viewed in the context of this ambivalence in real media environments. More research is definitely needed: Does the number of Shares or Likes influence the strength of the awareness video's effect on social comparisons, probably through its influence on the ought self? Can exposure to awareness material encountered in new media environments (e.g., on social networking sites) reduce the detrimental effects of exposure to idealized beauty messages in "traditional" media environments? Can peer comments influence the awareness material's effectiveness (see Veldhuis et al., 2014, showing that peer feedback interacts with media exposure in guiding perceptions of what is considered an ideal body shape)? Answering these, and the related research questions, could contribute to the improvement of the effectivity and efficiency of intervention strategies.

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Footnotes

¹ In addition, we tested whether the use of body mass index as a covariate substantially changes the reported findings. We re-run the PROCESS analysis and additionally added body mass index as a covariate. The findings do not lead to different interpretations.

² One can question whether the ideal self per se or the discrepancy between ideal and actual self is the better predictor for social comparison processes. We re-ran the whole PROCESS analysis (as reported in the results section) with a difference score (actual self–ideal self). Importantly, the experimental treatment did not influence the difference score and the indirect effect failed to achieve significance. This additional analysis supports our approach focusing on the ideal self per se and can be obtained upon request.

Table 1

Means and Standard Deviations for Scores on the Actual Self, Ideal Self, Ought Self, and Social Comparisons as a Function of Experimental Condition

Awareness Treatment		Actual Self	Ideal Self	Ought Self	Social Comparisons
Control (<i>n</i> = 89)	<i>M</i>	3.91	2.89	2.54	3.43
	<i>SD</i>	1.05	0.71	1.06	2.00
Treated (<i>n</i> = 95)	<i>M</i>	4.08	3.20	2.76	2.73
	<i>SD</i>	1.06	0.77	0.93	1.57

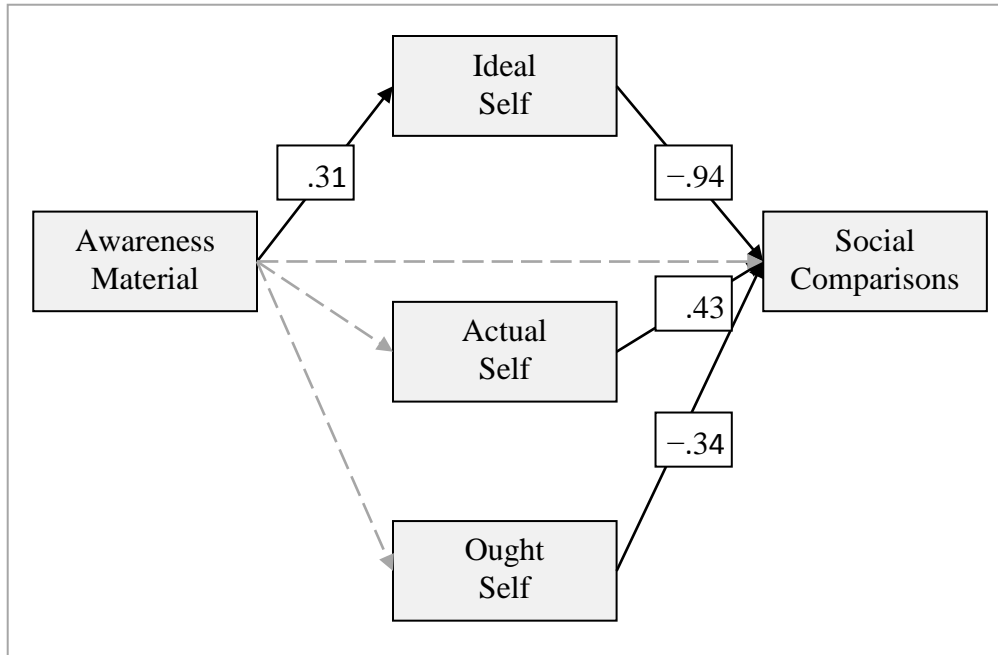


Figure 1. Effects of awareness material exposure (0 = control video, 1 = awareness video) on social comparisons in a subsequent media exposure situation through three dimensions of the self (ideal, actual, ought). The ideal self mediated the awareness materials' effect on social comparisons: Watching the awareness video elicited a more realistic perception of what specific body individuals ideally wanted to possess, which in turn reduced social comparison processes. Black solid arrows indicate significant effects. Grey dashed arrows indicate non-significant effects. The figure presents unstandardized regression coefficients.