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Abstract

Women's responses to 'thin ideal' media pending their level of general self-determination (GSD) were examined. High and low GSD women (N = 99) viewed a 'thin physique salient' (TPS) video or a 'thin physique non-salient' (TPNS) video. Following exposure to the TPS video, perceptions of pressure from the media to be thin, body dissatisfaction, and concerns over quantity of food were greater for low but not high GSD women. However, high GSD women reported greater concerns over the quality of food they eat following exposure to the TPNS video. Prevention efforts aimed at enhancing GSD are discussed.

Keywords

media, body image, self-determination

Results from numerous studies indicate that brief exposure to manipulated media images of thin, beautiful female models has a detrimental effect on women's body image and eating-related concerns. A recent meta-analysis of 47 laboratory experiments concluded that girls and women report greater dissatisfaction with their appearance following exposure to 'thin ideal' media (d = -.35) (Want, 2009). However, a growing and extensive body of literature indicates that not all women respond to 'thin ideal' media in the same manner. For example, the Want (2009) meta-analysis documented larger effect sizes among women with 'pre-existing' appearance concerns (d = -.52) compared to women without such concerns (d = -.16). Individual studies have

also shown that the detrimental impact of exposure to thin female media models may be limited to women who report greater internalization of sociocultural beliefs surrounding thinness and obesity (e.g. Dittmar and Howard, 2004), who are prone to social comparison (Dittmar and Howard, 2004), have an appearance-based schema (Hargreaves and Tiggemann, 2002), and who self-objectify (Monro and Huon, 2005).

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Collectively, these factors advance knowledge on individual differences in terms of women's vulnerabilities. However, little is known on potential positive traits which may protect women from sociocultural pressures of thinness and specifically from those extolled in the media (Cash, 2005; Steck et al., 2004). Correlational research has found support for some factors such as a nonconformist attitude (Twamley and Davis, 1999), the endorsement of feminist beliefs (Murnen and Smolak, 2009), self-esteem (Fingeret and Gleaves, 2004), and self-concept clarity (Vartanian, 2009). Together these factors suggest that individual responses to cultural prescriptions of female attractiveness and dieting may reflect underlying differences in self and identity-related content and processes (Polivy and Herman, 2007; Stein and Corte, 2003). A promising self-related variable is general self-determination which has recently been incorporated in an adapted version of the sociocultural model of disordered eating (Pelletier and Dion, 2007; Pelletier et al., 2004a).

Self-Determination Theory

According to Self-Determination Theory (Deci and Ryan, 1985b, 2002) people engage in their various behaviors and activities for different reasons. Deci and Ryan (1985b) postulate the existence of six styles of behavior regulation ordered along a continuum of perceived autonomy or self-determination, thought to reflect the degree to which the motive to act has been increasingly internalized and integrated into the self. From the least self-determined to the most self-determined style of behavior regulation they include: amotivation; external regulation; introjected regulation; identified regulation; integrated regulation; and intrinsic regulation. Each of these behavior regulations can be combined into a self-determination index indicative of individual differences in relative self-determination underlying a particular set of behaviors or activities. High selfdetermination scores reflect greater endorsement of behavior by the self and are thus hypothesized to result in healthier functioning compared to low self-determination scores.

In the present study, self-determination is assessed at the dispositional level which refers to a person's enduring motivational orientation toward his/her everyday activities. At this level of generality, high self-determination reflects a sense of self that is integrated, unified, and non-contingent. Behaviors are experienced as authentic, reflective, and freely chosen because they are initiated and enacted by the self (Ryan, 1993). Conversely, low self-determination is hypothesized to reflect a more compartmentalized and disintegrated sense of self. Behaviors are experienced as controlling and pressured because while they are initiated by the person they are not self-endorsed. The beneficial role of high general self-determination on health and well-being-related outcomes has been demonstrated in the domains of education (Amiot et al., 2008), sports (Vallerand et al., 2006), work (Blanchard et al., 2009), and more recently in the domain of women's body image and eating behaviors.

Self-Determination Theory and body image

In a recent set of papers, Pelletier and colleagues hypothesized that individual differences in general self-determination may account for women's varying responses to a societal climate emphasizing thinness as the standard of female attractiveness (Pelletier & Dion, 2007; Pelletier et al., 2004a). According to the sociocultural model of disordered eating (Stice, 1994, 2001), perceptions of pressure to have a thin body from various social agents (e.g. media, parents, peers, partners) (e.g. Hesse-Biber et al., 2006) promote an internalization of stereotypical beliefs surrounding the 'thin ideal' (e.g. Stice et al., 1994). Given the extremity of this ideal, body dissatisfaction becomes the common experience for most women (e.g. Keel et al., 2007) and in turn fuels dysfunctional eating attitudes and behaviors (e.g. bulimic symptoms) through two central pathways: dieting and negative affect (Stice, 1994, 2002; Stice and Shaw, 2002).

In an adapted version of the sociocultural model of disordered eating, general selfdetermination emerged as a negative predictor of perceptions of sociocultural pressures of thinness, internalization of sociocultural beliefs surrounding thinness and obesity, and bulimic symptoms (Pelletier et al., 2004a). Moreover, the inclusion of general self-determination to the model weakened the relationships among the variables suggesting that general self-determination may serve a protective function. This motivational model was further substantiated and extended to include the regulation of eating behaviors (Pelletier and Dion, 2007) whereby general selfdetermination was differentially associated with an autonomous and a controlled regulation of eating behaviors predicting in turn qualitatively different eating habits (e.g. healthy eating and dysfunctional eating). The present study will test the buffering role of general self-determination against a manipulated and important source of sociocultural pressures of thinness, namely media depictions of the 'thin ideal' whereby a negative relationship is anticipated between general selfdetermination and perceptions of pressure from the media to be thin.

Overview of the present study

The primary aim of the present research is to investigate the protective role of general selfdetermination against the negative impact of 'thin-ideal' media exposure on the correlates of women's body image preoccupations. A secondary aim is to examine women's differential concerns over the food they eat as a result of exposure and as a function of their level of general self-determination. In addition to the anticipated adverse main effects of video exposure (e.g. Want, 2009) and positive main effects of general self-determination (Pelletier et al., 2004 a), high general self-determination was hypothesized to mitigate the impact of 'thin ideal' media exposure on women's body image preoccupations and differential eating concerns evidenced by fewer perceptions of pressure from the media to be thin, less internalization of sociocultural

beliefs surrounding thinness and obesity, less body dissatisfaction, less negative affect, less concern over quantity of food, and more concern over quality of food.

Method

Design

The present study employed a between-subjects post-test only 2 x 2 factorial design. The independent variables were video condition (TPS, TPNS) and level of general self-determination (high, low). The outcomes included: perceptions of pressure from the media to be thin; internalization of sociocultural beliefs surrounding thinness and obesity; body dissatisfaction; negative affect; concern over quantity of food; and concern over quality of food.

Participants

The sample was comprised of 99 female undergraduate students with a mean age of 20.52 (SD = 2.64) years. The majority was Caucasian and most participants majored in psychology (75.8%). Participants' self-reported weight (lbs) and height (feet and inches) were used to calculate their body mass index which ranged from 15.91 to 32.23 (M = 21.86, SD = 2.95) and used as a covariate in subsequent analyses. Finally, most of the participants (n = 69) were recruited from an Integrated System of Participation in Research and received course credit for their participation while the remaining (n = 30)were recruited on a volunteer basis and were not compensated. Participants were equivalent on age, BMI, and level of general self-determination across recruitment samples, F(3, 93) = 2.02, p = .12.

Experimental stimuli

Two videos were created for this laboratory experiment: a 'thin physique salient' (TPS) video and a 'thin physique non-salient' (TPNS) video. Each video featured advertisements and

portions of television programs and movies that were spliced together in order to create a continuous stimulus of four minutes in duration. Both videos featured images of beautiful, slim female models. However, the TPS video was designed to portray the societal 'thin ideal' standard of female attractiveness while the TPNS video was designed as a comparable control. The female models in the TPS video wore fitted clothing which revealed their thin physique. The song 'Unbelievable' by the pop band EMF was dubbed over the original soundtrack. By contrast, the female models in the TPNS video wore loose clothing and were depicted laughing, talking, or engaged in some activity (e.g. yoga); their thin physique was not the focal point of the image. The song 'Don't Need You To Tell Me I'm Pretty' by Samantha Mumba was dubbed over the original soundtrack. The pop songs were selected in accordance with the content of each video. Both videos were created in a manner to replicate naturalistic television viewing at home.

Procedure

All participants completed a measure of general self-determination and self-reported height and weight during class time at the beginning of the semester, prior to their arrival to the laboratory. Equivalency on age, BMI, and level of general self-determination across video conditions was tested and supported, F(3, 89) = .46, p = .71. In order to minimize self-selection based on preexisting appearance concerns, all participants were under the guise that they were participating in a study on 'Media and Memory Retention'. Participants were randomly assigned to view either the TPS video or the TPNS video and were instructed to watch the video attentively as they would be queried on its contents later. Afterwards, participants had three minutes to complete a memory retention exercise in which they were instructed to list any number of thoughts they had related to the video. Following the thought listing task, participants completed measures of the dependent constructs of interest. At the end of the experiment, participants were thanked for their participation, debriefed, and queried on their suspicions as to the real goal of the study. No participants suspected the hypotheses being tested.

Constructs and measures

General self-determination. The General Motivation Scale (GMS; Pelletier et al., 2005) was used to assess general self-determination. The GMS is comprised of six subscales of three items each that correspond to the six styles of behavior regulation proposed by Deci and Ryan (1985b). Participants rated the extent to which each of the 18 items corresponded to their reasons as to 'why they do things in general' [e.g. "... because they reflect the essence of who I am' (integrated regulation) and '... because I want to be viewed more positively by certain people' (external regulation)] on a scale from 1 (does not correspond to my reasons at all) to 7 (corresponds exactly to my reasons). Scores from each subscale were averaged across their respective three items (as ranged from .70 to .80). Individual differences in general self-determination were calculated using a self-determination index = +3*(intrinsic)+2*(integrated) +1*(identified) -1*(introjected)-2*(external) -3*(amotivation) (Ryan and Connell, 1989). Participants were blocked on general self-determination (GSD) at the median (Mdn = 9.33) to create groups of women who were either high (M = 17.14, SD = 4.90) or low (M = 3.47, SD = 3.41) in GSD.

Perceived pressures from the media to be thin. This construct was assessed with two items from the Perceived Sociocultural Pressures to Have a Thin Body Scale (Stice and Agras, 1998). These items were: 'I've perceived a strong message from the media (e.g. TV, magazines) to lose weight' and 'I've noticed a strong message from the media to have a thin body'. Responses were rated from 1 (do not agree at all) to 5 (strongly agree) and averaged together (TPS video: r = .60, TPNS video: r = .67).

Internalization of sociocultural beliefs surrounding thinness and obesity. This construct was assessed using Boyer's (1993) Internalization of Beliefs Surrounding Thinness and Obesity Scale (eight items). Sample items included: 'People who are thin are well liked' (thinness) and 'Deep down, those who are fat are not well adjusted' (obesity). Responses were rated from 1 (*do not agree at all*) to 7 (*strongly agree*) and averaged together (TPS video: $\alpha = .87$, TPNS video: $\alpha = .86$).

Body dissatisfaction. The Body Dissatisfaction subscale (nine items) of the Eating Disorder Inventory (Garner et al., 1983) was used to assess this construct. Participants rated their level of dissatisfaction from 1 (never) to 6 (always) with various parts of the body (e.g. hips, stomach, thighs, and buttocks). Responses were averaged together (TPS video: $\alpha = .94$, TPNS video: $\alpha = .95$).

Negative affect. The Negative Affect subscale of the International Positive and Negative Affect Schedule Short Form was used to assess negative affect (Thompson, 2007). Participants rated the extent to which they felt 'upset', 'hostile', 'ashamed', 'nervous', and 'afraid' on a scale from 1 (*very slightly or not at all*) to 5 (*extremely*). Responses were averaged together (TPS video: $\alpha = .76$, TPNS video: $\alpha = .80$).

Eating concerns. Differential eating concerns were assessed with the following items: 'To what extent are you concerned by the quantity of food you're eating?' and 'To what extent are you concerned by the quality of food you're eating?' Responses were rated from 1 (not at all concerned) to 7 (very concerned) (Pelletier et al., 2004b).

Results

Manipulation check

Those who viewed the TPS video were expected to generate more thoughts related to the models'

thinness (e.g. 'skinny', 'thin/thinness') and physical appearance (e.g. 'beauty/beautiful', 'perfect') in comparison to those who viewed the TPNS video. The perceived 'thin-ideal' content of the TPS video was supported whereby 48 references to the models' thinness were made in comparison to eight references in the TPNS video, $\chi^2(1, N = 56) = 28.57, p < .001$.

Main analyses

A 2 (GSD: high, low) x 2 (video: TPS, TPNS) MANCOVA was conducted on all six dependent variables with BMI as a covariate. Multivariate and univariate effects are reported in Table 1. BMI emerged as a significant multivariate covariate on two outcomes. Women with higher body mass indexes relative to women with lower body mass indexes reported less internalization of sociocultural beliefs surrounding thinness and obesity, r = -.27, p < .01 and greater body dissatisfaction, r = .35, p < .01. No multivariate main effect for video was found while a multivariate main effect emerged for level of GSD. Women with high GSD relative to women with low GSD reported less internalization of sociocultural beliefs surrounding thinness and obesity (M = 2.79, SE = .16 vs M = 3.34,SE = .16), less negative affect (M = .19, SE = .03vs M = .27, SE = .03), and greater concern over the quality of food they eat (M = 5.61, SE = .19)vs M = 4.77, SE = .19). Finally, a multivariate interaction effect emerged between level of GSD and video condition on four outcomes. Means, standard errors, and simple effects for all dependent variables across levels of general self-determination (GSD) and video conditions are displayed in Table 2.

First, low GSD women reported greater perceptions of pressure from the media to be thin following exposure to the TPS video compared to the TPNS video while high GSD women's ratings were similar across video conditions. Second, high GSD women reported less body dissatisfaction following exposure to the TPS video compared to the TPNS video while low GSD women reported greater body

	BMI MF (6, 83) = 7.13***	Video MF (6, 83) = 0.33	GSD MF (6, 83) = 3.65**	Video x GSD MF (6, 83) = 2.48*	
PP media	0.51	0.08	1.62	7.63**	
IBTO	5.79*	0.34	6.10*	1.13	
Body dissatisfaction	15.92***	0.01	1.55	6.18*	
Negative affect (log)	0.44	1.44	4.94*	0.00	
Concern: quantity of food	2.28	0.15	0.06	7.81**	
Concern: quality of food	2.19	0.01	9.43**	5.26*	

Table 1. Multivariate (MF) and univariate F values across BMI, video condition, level of GSD, and video x GSD

Note: GSD = general self-determination, PP media = perceived pressure from the media to be thin, IBTO = internalization of sociocultural beliefs surrounding thinness and obesity *p < .05; **p < .01; ***p < .001

Table 2. Means (SE) for all dependent measures across levels of GSD and video conditions

	High GSD			Low GSD		
	TPS	TPNS	F (1,43)	TPS	TPNS	F (1,44)
PP media	3.27 (.22)	3.86 (.26)	3.22	4.22 (.24)	3.50 (.22)	5.19*
IBTO	2.73 (.21)	2.84 (.25)	.28	3.53 (.23)	3.16 (.21)	1.62
Body dissatisfaction	2.99 (.22)	3.56 (.26)	4.38*	3.88(.25)	3.26 (.22)	4.10*
Negative affect (log)	.22 (.03)	.17 (.04)	1.12	.29 (.04)	.25 (.03)	.75
Concern: quantity of food	4.00 (.32)	4.84 (.38)	3.02	4.89 (.36)	3.78(.32)	6.75*
Concern: quality of food	5.28 (.25)	5.93 (̀.30)́	3.66 ^a	5.07 (.28)	4.47(̀.25)́	2.03

Note: GSD = general self-determination, TPS = thin physique salient video, TPNS = thin physique non-salient video, PP media = perceived pressure from the media to be thin, IBTO = internalization of sociocultural beliefs surrounding thinness and obesity

dissatisfaction following exposure to the TPS video compared to the TPNS video. Third, low GSD women expressed greater concern over the quantity of food they eat following exposure to the TPS video compared to the TPNS video while high GSD women did not significantly differ in their ratings across video conditions. Finally, high GSD women reported marginally greater concern over the quality of food they eat following exposure to the TPNS video compared to the TPS video while low GSD women's ratings did not significantly differ across video conditions.

Discussion

Findings from the present study support the protective role of high general self-determination in response to an important source of sociocultural pressure about body image, namely the media. The more women engage in their everyday activities with a sense of autonomy and volition, the more protected they are from societal ideas of female attractiveness (e.g. having a thin body). Conversely, the more women feel coerced and controlled in their general behaviors, the more vulnerable they are to sociocultural influences on their body image and eating-related concerns.

First, hypotheses concerning main effects for general self-determination were partially supported. Consistent with the findings of Pelletier and colleagues (Pelletier and Dion, 2007; Pelletier et al., 2004a) women with high relative to women with low general self-determination reported less endorsement of sociocultural beliefs surrounding thinness and obesity. However, this effect was not qualified

 $^{^{}a}p = .06; *p < .05$

by a significant interaction between general self-determination and video condition. While correlational research supports a moderate positive association between 'thin-ideal' media exposure and internalization of sociocultural attitudes surrounding appearance (e.g. Levine and Murnen, 2009), few studies have investigated this relationship in a causal fashion and results from these are mixed (e.g. Hawkins et al., 2004; Stice and Shaw, 1994; Stice et al., 2001). Thus, an internalization of sociocultural beliefs surrounding thinness and obesity may reflect a more stable individual difference between women not subject to situational changes (e.g. Dittmar and Howard, 2004). Women with high relative to women with low general self-determination also reported less negative affect. This finding is consistent with previous research linking general self-determination and an autonomous causality orientation to general indices of well-being such as life satisfaction (Blanchard et al., 2009), self-esteem and ego development (Deci and Ryan, 1985a) depression and anxiety (Ratelle et al., 2004). However, this main effect was consistent across video conditions. More sensitive measures of negative affect (e.g. Visual Analogue Scales) should be included in future studies.

Second, hypotheses concerning the buffering and beneficial role of high general selfdetermination in response to 'thin ideal' media were largely supported. Controlling for differences in body mass index, women with low general self-determination reported greater perceptions of pressure from the media to be thin and greater body dissatisfaction following exposure to media images that portray an ultra slim physique as the 'ideal' body shape while women with high general self-determination did not differ in their responses across video conditions. Despite the ubiquitousness of 'thin ideal' media, these findings indicate that not all women perceive and interpret these images in the same manner. These results support and extend those of Pelletier and colleagues (Pelletier and Dion, 2007; Pelletier et al., 2004a) using an experimental design.

Our findings are also in line with Self-Determination Theory's research on the general causality orientations (Deci and Ryan, 1985a). People who orient themselves in an autonomous manner toward their social environment (i.e. high general self-determination) are hypothesized to interpret relevant stimuli as inputs of information which are then evaluated against the needs, interests, and integrated values of the self in order to determine and regulate the appropriate course of action. For example, the autonomous orientation has been associated with less defensiveness (Knee and Zuckerman, 1998), greater openness to experience (Lewis and Neighbors, 2005), and better emotional regulation (Weinstein and Hodgins, 2009). By contrast, people who are more control-oriented (i.e. low general self-determination) are sensitive to contingencies both within themselves and in their social environment leading them to perceive and interpret relevant events as inputs of pressure to behave in a certain manner. Stimuli are thus evaluated against socially prescribed ideals which are internal to the person but reside outside of the self. For example, control-oriented college students were found to be more sensitive to social norms as they adjusted their alcohol consumption based on perceptions of how much their college peers drank (Neighbors et al., 2006).

In the present study, women with high general self-determination may have interpreted the TPS video as a source of information concerning societal ideals of female attractiveness (Pelletier et al., 2004a). The information provided by the models in the TPS video was likely discarded in light of their own ideals and integrated values. Conversely, women with low general self-determination may have interpreted the TPS video as a *source of pressure* as to how they should look in order to be attractive. The information provided by the models in the TPS video was likely retained in light of a socially prescribed and valued ideal of attractiveness (i.e. to be thin) and consequently used to make judgments about the self.

We also sought to investigate the extent to which exposure to societal ideals of thinness

could shape women's differential preoccupations with the food they eat as a function of their level of general self-determination. In response to the TPS video, women with low general selfdetermination reported greater concern over the quantity of food they ate. However, in response to the TPNS video, women with high general self-determination expressed greater concern over the quality of food they ate. These findings are congruent with past research concerning self-determination at the contextual level of generality, namely the regulation of eating behaviors. A controlled regulation of eating behaviors characterized by pressures and obligations either from oneself or from others to exert control over what one eats has been linked to greater concerns over quantity of food (r =.41) compared to quality of food (r = .13). It has also been associated with bulimic symptoms (Pelletier et al., 2004b) and an avoidance-based strategy to meal planning (Otis and Pelletier, 2008). By contrast, an autonomous regulation of eating behaviors characterized by selfendorsement, choice, and identification with eating healthy has been linked to greater concerns over quality of food (r = .43) compared to quantity of food (r = .18), healthy eating habits (Pelletier et al., 2004b) and an approachedbased strategy to meal planning (Otis and Pelletier, 2008). Our findings suggest that different media portrayals of women prime different food preoccupations in different women. Media representations of a societal 'thin ideal' appear to activate preoccupations with how much one eats in women who are generally motivated out of expectations, pressures, and obligations. Conversely, media representations of a more 'holistic' ideal of health (e.g. laughing, spending time with friends, and engaging in self-care activities such as yoga) appear to activate preoccupations with what one eats in women who are generally motivated out of personal choice and interest. Future studies should investigate these propositions in a more systematic way by including measures of intentions to diet and intentions to eat healthy following exposure to 'thin ideal' media.

Taken together, findings from the present study indicate that not all women respond in the same manner to sociocultural pressures of thinness extolled in the media. While previous research has demonstrated the media's role in shaping women's body image concerns (Want, 2009) our study underscores the importance of individual differences in this causal relationship specifically with respect to an important protective factor, namely general self-determination. However, the generalizability of our findings warrant caution in light of some limitations. First, our results may not generalize to samples of older women or to samples of women with elevated body masses (BMI > 30). Moreover, weight and height were self-reported and thus may have been under-reported. Second, the majority of our sample was Caucasian; thus our findings may not generalize to samples of women from different ethnicities. Third, the nature of our selected exposure medium (video) excludes the possibility of creating identical and equivalent videos with exception to the models' thinness. Fourth, we did not include a non-appearance (e.g. products-only) video as a baseline condition. Although metaanalytic moderator analyses revealed no significant differences in effect sizes between studies using images of average-weight or over-weight women and studies using no images of women as the control stimuli (Want, 2009), the inclusion of a baseline condition using a 'products- only' video devoid of images of women would substantiate our conclusions. Fifth, we did not assess pre-exposure levels on the dependent constructs of interest. While pre-post media exposure designs were shown to produce similar effect sizes to post-test only designs (Want, 2009), future research should replicate the current findings using a pre-post design and include measures designed to capture state changes in the laboratory (e.g. Visual Analogue Scales). Finally, some measures were limited to one or two items. Although the pattern of our results is consistent with our hypotheses and research on Self-Determination Theory (Deci and Ryan, 1985b, 2002), replication of the current findings in future studies would substantiate the protective role of

general self-determination against the media's effects on women's body image and eating-related concerns.

Despite these limitations, findings from present study have implications for prevention and intervention programs. First, general selfdetermination is considered a reflection of the degree to which underlying behavior regulations have been integrated into the self whereby greater self-endorsement of one's general actions ensues more healthy and optimal functioning. Therefore prevention efforts aimed at enhancing general self-determination should improve several body image and eating-related outcomes. Indeed, high general self-determination was shown to mitigate the negative impact of 'thin ideal' media exposure on perceptions of pressure from the media to be thin, body dissatisfaction, concerns over quantity of food, and concerns over quality of food. Second, the construct of general self-determination is grounded in a well-researched macro-theory of human motivation and self-development which articulates specific contextual and intraindividual antecedents of self-determination (Deci and Ryan, 1985b, 2002). On an interpersonal level, women could be encouraged to select relationships which support their needs for competence, autonomy, and relatedness. On an intrapersonal level, women could be encouraged to engage in daily activities which they find important and valuable for their personal growth and development and which provide them with feelings of satisfaction and enjoyment. Third, no between-group differences emerged on any of the outcomes following exposure to the TPNS video with the exception to concerns over quality food. These findings suggest that portraying women in a more 'holistic' fashion in the media with minimal emphasis on achieving a thin body may be beneficial to women's self-evaluations.

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