

# Media influences on body satisfaction in female students

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The present study examined the immediate impact of media portrayals on evaluations of body shape and disordered eating symptomatology in female undergraduates. By using a repeated measures design, participants (N= 42) were exposed on two consecutive occasions to magazine images representing the thin-ideal physique and overweight models. Body satisfaction was recorded both before and after exposure to the images and eating disorder symptomatology was measured following both exposures. Results showed that participants' body satisfaction scores decreased following exposure to the thin-ideal physique and increased following exposure to the larger models. When analysing eating disorder symptomatology, body dissatisfaction and drive for thinness were higher following exposure to slender media images compared to the larger media images. However, exposure to the thin-ideal physique did not increase disordered eating behaviours. These results provide evidence that one brief exposure to media images could exert immediate impact on some behaviours, attitudes and perceptions.

*Influencia de la publicidad en la satisfacción corporal de estudiantes universitarias.* El presente estudio examinó el impacto inmediato de la exposición a imágenes publicitarias en la evaluación de la imagen corporal y sintomatología de trastornos alimentarios en estudiantes universitarias. Se utilizó un diseño de medidas repetidas en el cual las estudiantes (N= 42) fueron expuestas en dos ocasiones consecutivas a imágenes de revistas con modelos representando el ideal delgado y modelos con sobrepeso. La satisfacción corporal fue medida antes y después de la visualización de las imágenes en ambas ocasiones y la sintomatología de trastornos alimentarios fue evaluada después de la exposición a ambos grupos de imágenes. Los resultados mostraron que los índices de satisfacción corporal disminuyeron después de la visualización de las imágenes de modelos delgadas y aumentaron después de la observación de las modelos con sobrepeso. Al analizar la sintomatología de trastornos alimentarios, la disatisfacción corporal y el deseo de ser delgada fueron mayores después de ver las imágenes de modelos delgadas que de modelos obesas. Sin embargo, la visualización de imágenes de modelos delgadas no aumentó los comportamientos indicativos de trastornos alimentarios. Estos resultados proveen evidencia de que una breve exposición a imágenes publicitarias pudiese ejercer un impacto inmediato en algunas actitudes, percepciones y comportamientos.

Despite the increased media coverage, medical attention, and public recognition, the cluster of factors contributing to the development and maintenance of eating disorders remains inadequately specified. Developmental, psychological, sociocultural and behavioral factors contribute to the complex development and persistence of anorexia and bulimia nervosa (Rosen & Neumark-Sztainer, 1998). The sociocultural etiological model is based upon the premise that societal factors send potent messages to girls and young women that certain physical attributes are unacceptable in today's society (Derenne & Beresin, 2006; Hill, 2006; Polivy, Garner, & Garfinkel, 1986; Stice & Whitenton, 2002). Several lines of evidence point toward one sociocultural factor, mass media, as a

potential risk factor for eating disorders (Andrist, 2003; Borzekowski & Bayer, 2005; Garner & Garfinkel, 1980; Haines & Neumark-Sztainer, 2006; Pinhas, Toner, Ali, Garfinkel, & Stuckless, 1999).

The ultra-slender ideal-body image portrayed by the media is typically reported as 15% below the average weight of women. Approximately 90% of the female models are below average weight (Vaughan & Fouts, 2003). This proportion grossly over represents the percentage of such women in society and emphasise an unrealistic standard of beauty; tall, with narrow hips, long legs and thin thighs (Katzmarzyk & Davis, 2001; Seifert, 2005). Nevertheless, this thin-ideal shape portrayed in the media is biogenetically difficult, if not impossible, for the majority of women to obtain (Banks, 1992). More importantly, nowadays digital enhancement of magazine images normalises an illusion of desirable bodies that is not physically possible (Trampe, Stapel, & Siero, 2007). The internalisation of such a stringent and essentially unobtainable body image can lead to body dissatisfaction, low self-esteem or possibly eating disorder symptomatology in vulnerable individuals who do not see themselves as conforming to this ideal (Andrist, 2003; Dittmar & Howard, 2004).

A large proportion of women report significant levels of body dissatisfaction, which can be associated with marked emotional distress, appearance rumination and unnecessary cosmetic surgery (Ohring, Graber, & Brooks-Gunn, 2002). A number of researchers have recently identified a desire for thinness in children as young as 6 years of age (Ambrosi-Randic, 2000). Not only are these children dissatisfied with their weight, but some have also attempted to diet (Tanofsky-Kraff, Yanovski, Wilfley, Marmarosh, & Morgan et al., 2004).

When relating the level of exposure of individuals to various types of media sources and subsequent body dissatisfaction and dysfunctional eating, it was found that subjects who read more thinness depicting and promoting magazines (magazine genres which emphasise thin models and dieting behaviour), were more likely to report eating disorder symptomatology, body dissatisfaction and ineffectiveness (Harrison & Cantor, 1997). A recent study examined the impact of the introduction of television to a rural community in Western Fiji in adolescent girls. Three years after, weight and body shape preoccupation, purging behaviour to control weight and body disparagement were evidenced (Becker, 2004).

Evidence on the effects of exposure to thin media images and body dissatisfaction are somehow inconsistent. Some studies found that following exposure to slender media images females report higher levels of body dissatisfaction (Hawkins, Richards, Granley, & Stein, 2004; Thornton & Maurice, 1997). Lower body satisfaction levels have also been reported in subjects who view slender media images compared to neutral images (Posavac, Posavac, & Posavac, 1998) and subjects who view slender media images compared to overweight images (Ogden & Munday, 1996) or normal-weight images (Groesz, Levine, & Murnen, 2002; Stice & Shaw, 1994). Nevertheless, other researchers have found inconsistent evidence of the effect of thin media images on body satisfaction (Cash, Cash, & Butters, 1983; Champion & Furnham, 1999; Hamilton & Waller, 1993; Myers & Biocca, 1992). It has been proposed that proposed that the inconsistent, discrepant findings could be a result of a variety of methodological problems including non-random assignment, participant's awareness of the aim of the research, questionable assessment measures and the absence of pre-exposure measurements of self-evaluation (Hawkins et al., 2004).

The present study aimed to further examine and provide evidence for the immediate impact of media portrayals of slender beauty on evaluations of one's own shape and disordered eating symptomatology in female undergraduates, focussing exclusively on the influence of magazine media. The study aims to alleviate the methodological problems that may have confounded past research. In order to achieve this, first year students were recruited by offering Experiment Participation Requirement (EPR) points. These points need to be accumulated by students in order to gain their degrees and therefore the students recruited by this methods were unlikely to know the objectives of the study before hand since in first place they are just starting their degree and they enrolled mainly because they needed the EPR points. In addition, students were randomly assigned to the first condition of the experiment and all of them completed both phases. The measuring instruments were previously validated, and as it was a laboratory based study the experimenter ensured that the subjects were exposed to exactly the same experimental situations. It was hypothesised that body satisfaction scores should be lower

following exposure to slender media images, compared to larger media images and that disordered eating symptomatology should be more prominent following exposure to slender media images compared to larger media images.

## Method

### *Participants*

Forty two female students from the University of Liverpool, Psychology Department, aged between 18 and 25 years (mean age:  $19.3 \pm 1.52$  years) took part in the study. Participants were screened to ensure that they had no previous history of disordered eating. All subjects completed both conditions of the experiment.

### *Design*

The study consisted of a 2\*2 (condition\*time) within subjects ANOVA. The within subjects variables were time (before and after exposure) and condition (thin vs overweight pictures). There were two dependent variables: the average score of body satisfaction and the reported disordered eating symptomatology. Two modified subscales from the Eating Disorder Inventory (EDI) were used (Garner, Olmstead, & Polivy, 1983), The Body Dissatisfaction Scale and the Drive for Thinness Scale. The EDI-Body Dissatisfaction Scale assessed satisfaction with specific body sites such as the waist, thighs and legs. Drive for thinness, bulimia, ineffectiveness, perfectionism and body dissatisfaction were the five subscales measured from the EDI-Drive for Thinness Scale.

### *Instruments*

Two separate slideshow presentations were constructed. One slideshow consisted of thirty pictures of thin celebrity models while the other consisted of thirty pictures of larger celebrities known for their size (estimate average BMI 28 kg/m<sup>2</sup>). The EDI has been extensively tested and used to determine the extent of eating disorders and body satisfaction among individuals, its reliability and validity is well reported (Garner et al., 1983). In order to be able to determine overall body satisfaction, subjects were asked to rate questions by means of visual analogue scales (VAS). The average score for each participant was calculated to determine overall body satisfaction. Body dissatisfaction, drive for thinness and bulimia tendencies subscales have been repeatedly used in the literature and is it believed that they represent the main components for body image disturbance (perception, attitude and behaviour) (Botta, 1999). Ineffectiveness and perfectionism were also considered in the current study as a measure of personal inadequacy and the extent to which one believes that personal achievements should be superior, both subscales have been used in similar experiments (Harrison & Cantor, 1997) and have been shown to be related to eating pathology (Fairburn & Harrison, 2003).

### *Procedure*

Once consent was obtained, participants were given the first questionnaire and VAS in a booklet format. Subjects then observed either the slideshow of thin or overweight pictures for two minutes (each picture was shown for five seconds). The conditions were

counterbalanced across the subjects. When the slide show was over subjects were asked to rate questions of how they were feeling at that precise moment in time on a scale from 1 ‘extremely dissatisfied’ to 100 ‘extremely satisfied’ about their legs, waist, weight, thighs and overall profile on separate visual analogue scales (VAS). The VAS were randomly selected to be counterbalanced, in that the anchors were reversed to control for acquiescent responses. The average score for each participant was calculated to determine overall body satisfaction. Subsequently, subjects completed the full scale EDI and a further VAS booklet questionnaire. At the end of the first session participants were given limited information and arranged a time to return for the second session approximately 7 days later to complete the other condition undergoing exactly the same procedure.

Data analysis

Statistical analysis was carried out on SPSS 15. The data conformed to parametric assumptions. For the analysis of body satisfaction scores, a two way repeated measures design was employed, with time (before and after exposure) and condition (thin/overweight) as the within subjects condition. The dependent variable was average body satisfaction. For the eating disorder symptomatology scores a related samples T-test was used. Results were considered significant when  $p < 0.05$ .

Results

A significant main effect of time was found ( $F_{1,41} = 7.946, p < 0.01$ ). Condition also exerted a significant effect ( $F_{1,41} = 13.858, p = 0.001$ ). The time and condition interaction was also significant ( $F_{1,41} = 34.73, p < 0.001$ ). Post-hoc paired *t*-tests showed that average body satisfaction decreased after exposure to pictures of thin celebrities ( $47.19 \pm 2.73$  v  $43.42 \pm 2.85; t(42) = 2.640, p < 0.01$ ) and increased after exposure to pictures of large celebrities ( $46.55 \pm 2.65$  v  $56.01 \pm 2.44; t(42) = 6.92, p < 0.001$ ). When specific body parts were analysed, condition had a significant effect on shape of legs ( $F_{1,41} = 8.44, p < 0.01$ ), waist ( $F_{1,41} = 12.48, p < 0.001$ ), weight ( $F_{1,41} = 16.77, p < 0.001$ ) and overall ( $F_{1,41} = 32.11, p < 0.001$ ) satisfaction. Time had a significant effect in tights satisfaction ( $F_{1,41} = 4.37, p < 0.05$ ). In addition there was a significant time  $\times$  condition interaction for shape of legs ( $F_{1,41} = 22.02, p < 0.001$ ), waist ( $F_{1,41} = 8.44, p < 0.001$ ), weight ( $F_{1,41} = 26.01, p < 0.001$ ), tights ( $F_{1,41} = 30.31, p < 0.001$ ) and overall ( $F_{1,41} = 14.13, p < 0.001$ ) satisfaction (table 1).

Table 1

Means  $\pm$  SE of each body satisfaction question and the average score in both conditions. \* =  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

Body part	Thin condition		Overweight condition	
	Before (N= 42)	After (N= 42)	Before (N= 42)	After (N= 42)
Shape of legs	45.88 $\pm$ 3.14	39.74 $\pm$ 3.21**	44.07 $\pm$ 2.93	53.31 $\pm$ 3.18***
Waist	51.17 $\pm$ 3.39	44.76 $\pm$ 3.54**	50.29 $\pm$ 3.04	60.05 $\pm$ 2.97***
Weight	44.74 $\pm$ 3.65	38.60 $\pm$ 3.26**	46.26 $\pm$ 3.54	55.55 $\pm$ 3.20**
Thighs	44.45 $\pm$ 3.25	40.29 $\pm$ 3.40**	41.10 $\pm$ 3.38	51.45 $\pm$ 3.07***
Overall profile	49.79 $\pm$ 2.75	47.36 $\pm$ 3.04	53.14 $\pm$ 2.76	59.79 $\pm$ 2.39***
Average	47.19 $\pm$ 2.73	43.42 $\pm$ 2.85*	46.55 $\pm$ 2.65	56.01 $\pm$ 2.44***

When analysing the effects of media images exposure in eating disorder measurements, it is shown that the scores for the body dissatisfaction subscale were significantly higher following exposure to the thin media images than overweight media images; ( $t(42) = 5.03, p < 0.001$ ). Similarly for the drive for thinness subscale the results showed that scores were significantly higher in the thin condition than in the overweight condition ( $t(42) = 2.01, p < 0.05$ )

Discussion

As predicted, exposure to media images having the thin-ideal physique reduced participant’s average body satisfaction scores whereas the opposite trend was found following exposure to images of larger models. In addition, consistent with the hypothesis that disordered eating symptomatology is more prominent following exposure to slender media images (Posavac & Posavac, 2002), it was found that when analysing the eating disorder questionnaires, drive for thinness and body dissatisfaction increased significantly following exposure to thin model images. A similar but non-significant effect was found in the measure of ineffectiveness.

These body satisfaction results are not surprising, lower body satisfaction levels following exposure to slender media images has previously been reported in the literature (Thornton & Maurice, 1997). The present findings are comparable with a relatively recent meta-analysis (Grosz et al., 2002) which investigated the acute, psychological impact of exposure to the thin-ideal. It was found that after viewing thin media images more negative perceptions about one’s body were reported compared to viewing images of either average size models, plus size models or inanimate objects. Similarly, the present findings agree with those observed by Ogden and Munday (Ogden & Munday, 1996) in which lower body satisfaction levels were reported following exposure to thin media images compared to overweight images. The current findings and the majority previous research have highlighted the association between exposure to the thin-ideal physique and diminished body satisfaction in individuals. However, a key point of the current investigation is the finding that one single exposure significantly reduced body dissatisfaction in female individuals. This leaves the open question on what effect could repeated daily exposure to these media images have on vulnerable individuals who may also be burdened with other risk factors such as psychological and biological weakness and familial disturbances.

Students exposed to high levels of magazine media seem to be more likely to report overall disordered eating symptomatology, bulimia, body dissatisfaction and drive for thinness measured on

Table 2

Means ( $\pm$  SE) of the eating disorder inventory subscale scores in each condition and coding for eating disorder measure. \* =  $p < 0.05$ ; \*\*\*  $p < 0.001$

Subscale	Thin condition (N=42)	Overweight condition (N=42)
Bulimia	1.14 $\pm$ 0.24	1.07 $\pm$ 0.23
Drive for thinness	3.29 $\pm$ 0.60	4.21 $\pm$ 0.66 *
Ineffectiveness	1.86 $\pm$ 0.36	2.36 $\pm$ 0.45
Perfection	4.02 $\pm$ 0.60	4.00 $\pm$ 0.55
Body dissatisfaction	7.98 $\pm$ 0.92	10.38 $\pm$ 0.96 ***

the EDI (Harrison & Cantor, 1997). Unfortunately level of magazine exposure was not assessed in the present study, however similarities can be identified. In the former study perfectionism and ineffectiveness were not found to be significantly associated with level of exposure to thinness depicting and promoting magazine media. These results may offer an explanation as to why in the present study, these behaviours were found to be non-significant and perfectionism showed a trend to an inverse relationship. These attitudes and perceptions have previously been identified to play unique roles in the onset of bulimic pathology (Fairburn, 1997).

Although it cannot be concluded that exposure to thin-ideal images increases disordered eating behaviours, the present

findings provide evidence that exposure can have immediate, short term impact on some behaviours, attitudes and perceptions tapping body dissatisfaction and drive for thinness. The fact that such a brief exposure to thin-ideal images has the ability to change an individual's perceptions is of great concern.

In conclusion, this study provides further evidence for the association between exposure to media portrayals of the thin-ideal physique and lowered body satisfaction indexes in female students. It would therefore seem that although exposure to thin-ideal images does not increase disordered eating behaviours, brief exposure can have an immediate, short term impact on some behaviours, attitudes and perceptions tapping body dissatisfaction and drive for thinness.

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