

Body Image and Body Shape Ideals in Magazines: Exposure, Awareness, and Internalization

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Three aspects of a sociocultural influence on appearance—media exposure, awareness of societal ideals, and internalization of sociocultural messages—were assessed in college females (75% White, 7% Black, 10% Hispanic, 7% Asian or Pacific Islander, and 1% other) and related to measures of body image disturbance, eating dysfunction, and overall self-esteem. The exposure variable consisted of an empirically derived index of coded body shape images from magazines specifically selected because of their high readership in the tested sample of females. Awareness of societal pressures regarding appearance and internalization of these messages were measured with the two subscales of the Sociocultural Attitudes Towards Appearance Questionnaire. Correlational and regression analyses failed to find any relationship between simple exposure and indices of body image, eating dysfunction, and self-esteem. Awareness of societal pressures was a significant predictor in regression analyses; however, internalization of social standards of appearance accounted for significant and substantial levels of variance beyond that explained by awareness. The findings are discussed in light of recent cognitive-behavioral and psychoeducational interventions for body image disturbance.

A large number of theories have been offered to explain the development and maintenance of body image disturbance (Heinberg, 1996). Perhaps the most empirically supported approach is a sociocultural model, which identifies social pressure as the impetus behind an individual's need to conform to body shape standards (Fallon, 1990; Stormer & Thompson, 1996). Social

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endorsements of an ideal body shape, such as those found in print and film media formats, have been related to body image disturbance (Altabe & Thompson, 1996; Heinberg & Thompson, 1995) as well as implicated in the development of eating disorders (Fallon, 1990; Stice, Schupak-Neuberg, Shaw, & Stein, 1994).

In perhaps the classic investigation in this area of research, Garner, Garfinkel, Schwartz, and Thompson (1980) examined the changing body shape of *Playboy* centerfolds. *Playboy* magazine was selected for this study because its models were considered to epitomize the female body shape ideal. The researchers collected bust and hip measurements as well as weights of centerfolds for a 20-year period (1959–1978). An initial examination of the mean weight for the centerfolds indicated a weight significantly lower than that of the average female for the same time period. Similarly, an analysis revealed a decrease in the centerfolds' bust and hip measurements over the 20-year span. Notably, these smaller measurements occurred as the height of the models increased. The authors also examined the content of six popular women's magazines (*Harper's Bazaar*, *Vogue*, *McCalls*, *Good Housekeeping*, *Ladies Home Journal*, and *Woman's Day*) across the same 20-year span, finding a significant increase in the number of diet articles.

Wiseman, Gray, Mosimann, and Ahrens (1992) replicated and extended the research of Garner et al. (1980) to include a more current 10-year span (1979–1988). Their analysis revealed that bust and hip measurements continued to decrease throughout the 30-year period (1959–1988). Additionally, the weight reported for *Playboy* centerfolds was 13–19% lower than the weight assessed as normal based on actuarial tables.

Andersen and DiDomenico (1992) compared body shape ideals in articles and advertisements in 10 popular women's magazines from the Fall of 1987 (*Cosmopolitan*, *Good Housekeeping*, *Woman's Day*, *McCalls*, *Glamour*, *Family Circle*, *Better Homes and Gardens*, *Ladies Home Journal*, *Redbook*, and *Seventeen*) with that in 10 popular men's magazines from the same time period (*Sports Illustrated*, *Playboy*, *Newsweek*, *National Geographic*, *Rolling Stone*, *Penthouse*, *Life*, *Field & Stream*, *Jet*, and *Gentlemen's Quarterly*). They based their selection of magazines on popularity statistics from Simmon's study of media and markets, performing an analysis of the written text in the advertisements and articles to identify those that were diet related or shape related. Their findings revealed that diet advertisements and articles appeared ten times more frequently in women's than men's magazines. This ratio closely reflected the ratio of the incidence of eating disorders in women to the incidence of eating disorders in men (i.e., 9–10:1)

Nemeroff, Stein, Diehl, and Smilack (1994) examined magazine article content by analyzing the number of health, fitness, beauty, and weight loss topics in men's and women's magazines. Based on circulation statistics and longevity in publication, they categorized nine magazines from 1980–1990 as either traditional (*Good Housekeeping*, *Ladies Home Journal*, and *Playboy*), fashion (*Glamour*, *Cosmopolitan*, and *Gentlemen's Quarterly*), or modern (*Ms.*, *New Woman*, and *Esquire*). Each category contained two women's magazines. Unfortunately, due to the limited number of general topic men's magazines, only one men's magazine per category was analyzed. The women's magazines (*Good Housekeeping*, *Ladies Home Journal*, *Glamour*, *Cosmopolitan*, *Ms.*, and *New Woman*) had significantly more of the content areas of interest (weight loss, beauty, fitness, and health) than did men's magazines. Furthermore, the women's magazines contained more body-oriented topics than did men's magazines. In addition, they found that fashion magazines contained more health and fitness articles than did traditional or modern magazines. Articles about beauty were found most often in fashion magazines, followed by traditional magazines, followed by modern magazines. Not surprisingly, the authors concluded that fashion magazines were the most body-shape oriented and modern magazines were the least focused in this area. Traditional magazines appeared to fall between the other two magazine types in the promotion of images reflecting thinness.

In one of the most methodologically sophisticated studies in this area, Stice et al. (1994) utilized structural equation modeling to evaluate the role of media exposure on eating disturbances, while also testing for the mediating role of gender role endorsement, ideal-body stereotype internalization, and body satisfaction. Their media exposure scale consisted of 3 items indexing television exposure (comedy, game shows, and dramas) and 3 items assessing print media exposure (entertainment or arts, health or fitness, and fashion or beauty magazines). A direct effect of exposure on eating disorder symptoms and gender role endorsement was found; however, the path from exposure to ideal-body stereotype internalization was not significant.

Although most of the research on the media's influence on body image and eating disturbance has taken the form of analyzing *exposure*, via the examination of magazine content (as noted above), recent research has begun to focus on an individual's *awareness* of sociocultural pressures, as well as one's acceptance, or *internalization*, of these societal standards. Heinberg, Thompson, and Stormer (1995) developed the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ) as an index of both awareness and internalization of cultural pressures regarding appearance. Each factor was strongly related to multiple measures of body image and eating disturbance. However, in regression analyses, the Internalization scale ac-

counted for roughly six times the variance associated with measures of body image and eating dysfunction as the Awareness scale.

Heinberg and Thompson (1995) further explored the role of awareness and internalization of societal standards of appearance by examining the effect of television commercials on body image. In this study, female participants were exposed to a 10-min tape of advertisements containing either appearance-related images or nonappearance-related images. The authors defined appearance-related commercials as those that promoted social standards of attractiveness and thinness (e.g., advertisements for Weight Watchers or advertisements for beer showing a slender and attractive female in the commercial). Nonappearance commercials were those that did not promote attractiveness or thinness or use models that displayed such qualities (e.g., advertisements for pain relievers or insurance). Their findings suggested that media images have a negative effect on body satisfaction—females exposed to appearance-related commercials were less satisfied with their body shape than were females exposed to nonappearance-related images. In addition, individuals who scored high on the SA-TAQ measures of awareness and internalization experienced the most negative emotional effects of exposure to the appearance-related video.

As noted earlier, Stice et al. (1994) have also utilized a measure of internalization of societal values of appearance. They found that higher levels of such internalization predicted body dissatisfaction, which was associated with heightened levels of eating disturbance. Internalization is also a key ingredient of Stice and colleagues' dual pathway model of bulimia nervosa, which details the role of body mass, perceived pressure for thinness, and internalization as factors in the development of body dissatisfaction and bulimic symptoms (Stice et al., 1996; Stice, Ziemba, Margolis, & Flick, 1996). Finally, in an experimental study of media exposure, similar to the Heinberg and Thompson (1995) TV exposure study noted above, Stice and Shaw (1994) presented women with pictures from magazines containing "ultra-thin models, average-sized models, or no models" (p. 288). The group exposed to the ultra-thin models experienced greater affective distress and body dissatisfaction. In addition, they found that internalization levels, as measured with the Stice et al. (1994) ideal-body stereotype internalization scale, predicted bulimic symptoms.

The current study was a further examination of the relative influences of media exposure, awareness of societal pressures regarding appearance, and internalization of this sociocultural pressure on body image, eating disturbance, and self-esteem. To date, the assessment of media exposure has been limited by several factors. First, normative data regarding the actual level of readership for certain magazines have not been collected. Second, although fashion/beauty magazines are assumed to include certain titles

(e.g., *Cosmopolitan*, *Allure*, etc.), there is no evidence that the images portrayed in these magazines actually differ from those in other periodicals. Although magazines have been often rated for the content of the articles contained therein (see Nemeroff et al., 1994), we could find no investigation that coded images for levels of thinness or other aspects of appearance. Therefore, we sought to identify the magazines most frequently read by female college students and also analyze the particular shapes of the images contained within these periodicals.

Third, previous research that has examined magazine content and its relationship to clinical measures, such as body image, has not included an evaluation of breast size. Thompson and Tantleff (1992) found that women's ideal breast size is significantly larger than their own current size ratings, a finding that was recently found to be unchanged over the past six years (Tantleff-Dunn, Thompson, Sellin-Wolters, & Ashby, 1997). In addition, women's and men's conception of the societal ideal breast size was found to be even larger than women's ideal (Thompson & Tantleff, 1992), indicating a possible role of media-related images in fostering such discrepancies between current, ideal, and perception of societal ideal sizes. In the current study, therefore, women's images in magazines were also rated for the size of breasts, along with overall body size ratings.

In sum, in the current study, women were surveyed for the type of magazines that they actually read, along with the time spent reading each magazine. The overall body shapes and breast sizes that were promoted in these magazines were then identified and quantified. The importance of this new exposure variable was evaluated in tandem with the Awareness and Internalization subscales of the SATAQ. We sought to determine the role of these three sociocultural variables—exposure, awareness, and internalization—in the prediction of body dissatisfaction, eating dysfunction, and self-esteem.

METHOD

Participants

One hundred and seventy-five female students (ages 18–49) from the University of South Florida participated in this study. Mean age was 24 ($SD = 6.6$) and participants' self-reported ethnicity was 75% White, 7% Black, 10% Hispanic, 7% Asian or Pacific Islander, and 1% other (based on the Office of Management and Budget categories used by the National Institutes of Health). These participants voluntarily agreed to complete measures and received extra course credit for their participation. In order to get a broad representation of females, participants were not restricted

by age, body mass, or ethnicity. All students signed an informed consent, which briefly detailed the purpose of the surveys, but did not include reference to specific hypotheses regarding magazine exposure and other measures included in the testing packet.

Measures

Body Image. The Eating Disorder Inventory—Body Dissatisfaction (EDI-BD) scale contains 9 questions measuring satisfaction with specific body sites such as the waist, thighs, buttocks, etc. Internal consistency (standardized Cronbach's alphas) for the EDI-BD is .90 for anorexic samples and .91 for female controls (Garner, Olmsted, & Polivy, 1983). The Multidimensional Body Self-Relations Questionnaire—Physical Appearance Evaluation (MBSRQ-PAE) contains 7 questions that ask an individual to evaluate several aspects of his or her physical appearance such as attractiveness and physique. Internal consistency is .88 (Brown, Cash, & Mikulka, 1990). These two measures have been widely used in the body image literature and have been validated on numerous samples (Thompson, 1996).

Eating Disturbance. The Eating Disorder Inventory—Bulimia (EDI-B) scale contains 7 questions that measure the tendency to binge and purge. Internal consistency is .85 for anorexics and .83 for a female comparison sample (Garner et al., 1983). The Eating Disorder Inventory—Drive for Thinness (EDI-DT) scale contains 7 questions that measure a preoccupation with weight and dieting. Internal consistency is .85 for anorexics and .85 for female comparisons (Garner et al., 1983). Garner (1991) reviews the use of these measures with a wide variety of patient and control samples.

Awareness and Internalization of Body Shape Ideals. The SATAQ is designed to assess awareness of and tendency to strive toward social standards of appearance (Heinberg et al., 1995). The original SATAQ was slightly modified by adding 4 items to the Awareness subscale and 3 to the Internalization Scale, in order to update and expand the range of the scale, especially with regard to the recent focus on athleticism for women. One example of an item added to the Awareness scale is, "In our culture, someone with a well-built body has a better chance of obtaining success." An example of one of the 3 items added to the Internalization subscale is, "I often find myself comparing my physique to that of athletes pictured in magazines."

This revised version of the SATAQ contains 21 items, divided into an 11-item awareness scale and a 10-item internalization scale. Cronbach's alpha was used to establish reliability for this revised measure on the current sample. Internal consistency for the Awareness scale of the SATAQ was .83 and it was .89 for the Internalization scale. Factor analyses indicated

that the new, and original items, loaded on the extant factors of Awareness and Internalization.

Self-Esteem. The Rosenberg Self-Esteem Inventory (RSE) is a 10-item measure of global self-esteem (Rosenberg, 1965). It is perhaps the most widely used measure of self-esteem and has norms, good-excellent reliabilities, and validity studies in a wide range of samples (Alfonso, 1995).

Identification and Quantification of Magazine Exposure. The Participant Magazine Assessment Tool (PMAT) was created to identify and quantify the source and duration of magazine exposure. The PMAT contains 69 magazine titles selected after an examination of subscription statistics (*World Almanac*, 1994, p. 306) and availability through local Tampa Bay merchants. The list was created to identify the magazines that are popular among college students. A blank is located alongside each magazine title so that participants can indicate the approximate time spent, per month, reading each selected magazine. Additional spaces are also provided so that participants may include any magazine titles that do not appear on the list. (A copy of this scale is available from the authors.)

Procedure

Participants were tested in groups in a classroom setting. At the beginning of the session, a questionnaire packet was distributed to each research participant. Each packet consisted of an informed consent form, a demographic data collection sheet and the seven questionnaire measures (PMAT, EDI-B, EDI-BD, EDI-DT, MBSRQ-PAE, RSE and SATAQ). Participants completed the consent form, followed by the PMAT, and then the other measures. Afterward, a debriefing and educational sheet containing information about the construct of body image was provided.

Procedure for Rating Body Shapes of the People Appearing in Magazines

Following the administration of the questionnaire measures and initial examination of the data, the body shapes of the people who appeared in the magazines that were identified as the most popular among the female research participants were examined. Only those magazines that were read by 5% or more of the participants were included in the rating process. When possible, the May and June 1995 issues of monthly magazines were evaluated, as well as the nine issues published during the same period for weekly magazines. May and June issues were examined because they have been identified as containing photographs of models with the least amount of figure-concealing clothing (Guillen & Barr, 1994). In the few cases where

the May and June 1995 issues were not available for the rating process alternate issues were substituted.

The nine female figure drawings from the Contour Drawing Rating Scale (Thompson & Gray, 1995) were used to rate the body shapes of the females appearing in the magazines. Each detailed body shape is rated with a number from 1 to 9. A rating of 1 represents the thinnest figure whereas a rating of 9 represents the heaviest figure. Increments between the pictured shapes can be designated by a half step in the rating (e.g., 1.5 or 2.5). In order to avoid possible biases and facilitate the rating process, facial features and hair styles were removed from the original drawings (see Thompson, 1996).

Additionally, the five female schematic figure drawings from the Breast/Chest Rating Scale (Thompson & Tantleff, 1992) were used to rate the breast sizes of females that appeared in the magazines. On this scale, the breast size of female figures is rated from 1 to 5. A rating of 1 represents a figure with a smaller breast size, whereas a rating of 5 represents a figure with a larger breast size. Similar to the Contour Figure Drawings, facial features and hair styles were deleted from the original figures on the Breast/Chest Rating Scale.

Next, criteria for the selection of the images suitable for rating were developed (see Appendix A). These criteria were designed to select only those images that could be accurately rated for body shape and/or breast shape. Body shapes that were not well defined were not selected for rating (e.g., not enough of the body was pictured, the figure was not well defined, or baggy clothing was masking the person's shape). Additionally, the position of the figure was important. In order to make an accurate match between the figure drawings and the body and breast shapes appearing in the magazines, only figures that were turned no more than 45° away from either directly front or directly back were selected. Likewise, only figures larger than a 3 × 3cm square were selected for rating. Finally, the body and breast shapes of preadolescents, adolescents or pregnant women were not rated.

Body and breast shapes that were appropriate for rating appeared in photographs, drawings, or cartoons. These photographs and drawings were incorporated into a multitude of formats such as advertisements, fashion layouts, stories, and cartoons. An advertisement was defined as a format designed by a manufacturer to endorse a specific product. In contrast, a fashion layout was defined as a format designed by the magazine publisher to promote a stylistic array of clothing or accessories. In addition, a story was defined as any written fiction or nonfiction composition that was an independent part of a magazine. The story format also included the images appearing on the cover of a magazine. A cartoon was defined as a drawing

whose purpose was to depict a humorous or satirical situation. Prior to the body shape rating process, each magazine was inspected and figures that were appropriate for rating were selected. Two independent raters were used to test the selection of figures. A third rater was used to settle any discrepancies. In order to avoid bias due to either the title of the magazine containing the images or the context in which the images appeared, the selected images were extracted from the context of the magazine. Likewise, a code number was randomly assigned to each magazine. The images were then placed on a page in a folder identified only by a code number.

Next, two research assistants were trained to recognize and rate the selected body shapes in the magazines. The figures were identified as female or undefined (i.e., the gender of the person is not clear), type of image (i.e., photo or drawing), and context of image (i.e., advertisement, comic, fashion layout, or story). Body shape and breast size were rated according to the appropriate schematic figure drawings and entered onto the Body Shape Rating Tool. Each researcher practiced identifying and rating the selected body shapes. The researchers practiced this process using the same magazines that were examined in the rating process, but not the May or June 1995, issues. The training period continued until adequate interrater reliability between the two research assistants was established: female body shape $r = .82$ ($n = 59$), and female breast shape $r = .86$ ($n = 59$). After establishing interrater reliability, each research assistant received a folder containing one month's allotment of selected images for each of the 33 magazines. The dates of the issues were alternated between the two research assistants.

Creation of Magazine Exposure Categories

Three important elements of the magazine exposure variable were calculated for each of the 33 magazines: the mean body shape rating of the female images appearing in the magazine, the mean breast shape rating of the images appearing in the magazine, and the total number of rated images in the magazine. These were averaged across the two issues (or nine issues for weekly magazines) selected. Each magazine was then arranged along two continua from lowest to highest according to its body and breast shape ratings. Table I shows the resulting continuum according to mean body shape ratings, and Table II shows the resulting continuum according to mean breast shape ratings.

It was felt that means based on a limited number of images did not capture an accurate representation of body and breast shapes promoted within a magazine. Therefore, magazines that contained less than two rated images were excluded from the continua. An initial examination of the ratings of the shapes indicated a quite restricted range of body shapes. As

Table I. Magazines Arranged by Mean Body Shape Rating^a

Magazine Title	Mean Body Shape Rating	Number of Images
<i>Teen</i>	1.86	6
<i>Rolling Stone</i>	2.00	2
<i>Allure</i>	2.29	13
<i>YM (Young & Modern)</i>	2.41	11
<i>Mademoiselle</i>	2.49	6
<i>Newsweek</i>	2.50	1
<i>Health</i>	2.50	3
<i>Self</i>	2.52	7
<i>Vogue</i>	2.54	26
<i>Ebony</i>	2.55	7
<i>Entertainment Weekly</i>	2.64	26
<i>Details</i>	2.65	5
<i>Elle</i>	2.70	4
<i>New Woman</i>	2.72	6
<i>Fitness</i>	2.84	23
<i>Good Housekeeping</i>	2.85	8
<i>Cosmopolitan</i>	2.92	16
<i>Redbook</i>	2.92	7
<i>Shape</i>	2.99	8
<i>Prevention</i>	3.00	1
<i>Glamour</i>	3.02	16
<i>McCalls</i>	3.17	8
<i>Seventeen</i>	3.19	7
<i>Family Circle</i>	3.32	14
<i>Sports Illustrated</i>	3.38	2
<i>Woman's Day</i>	3.41	18
<i>Ladies Home Journal</i>	3.62	13
<i>People</i>	3.79	7
<i>Essence</i>	4.00	4
<i>Life</i>	0	0
<i>Readers Digest</i>	0	0
<i>Time</i>	0	0
<i>U.S. News & World Report</i>	0	0

^aBody shapes were rated on a 9-point scale with 1 representing the thinnest figure and 9 representing the heaviest figure.

Table I reveals, the range went from 1.86 (*Teen*) to 4.00 (*Essence*), therefore, overall, participants were reading magazines that illustrated body shapes that only reflected the thin side of the 1–9 figure size continuum provided by the rating scale. The restriction of range was not as much of an issue with the breast size ratings, which ranged from 1.00 (*Life*) to 3.62 (*Ladies Home Journal*) on the 1–5 scale.

We had hypothesized that exposure to smaller body sizes and, perhaps, larger breasts would be most associated with awareness, internalization, body dissatisfaction, eating disturbance, and low self-esteem. The presence of a severely restricted range of scores indicates that our sample essentially viewed *only* magazines with predominately thin women in the photographs.

Table II. Magazines Arranged by Mean Breast Shape Rating^a

Magazine Title	Mean Breast Shape	Number of Images
<i>Life</i>	1.00	1
<i>Time</i>	1.50	1
<i>Readers Digest</i>	1.67	2
<i>Mademoiselle</i>	1.69	5
<i>'Teen</i>	1.88	2
<i>Newsweek</i>	2.00	1
<i>Health</i>	2.00	4
<i>Good Housekeeping</i>	2.00	2
<i>U.S. News & World Report</i>	2.00	2
<i>Essence</i>	2.08	4
<i>McCalls</i>	2.19	1
<i>YM</i>	2.20	17
<i>Ebony</i>	2.20	7
<i>Allure</i>	2.22	12
<i>Self</i>	2.26	9
<i>Elle</i>	2.31	30
<i>Vogue</i>	2.38	27
<i>Shape</i>	2.42	12
<i>Glamour</i>	2.47	29
<i>Seventeen</i>	2.50	6
<i>New Woman</i>	2.57	7
<i>Details</i>	2.59	8
<i>Fitness</i>	2.62	17
<i>Sports Illustrated</i>	2.63	2
<i>Woman's Day</i>	2.67	11
<i>Rolling Stone</i>	2.69	4
<i>People</i>	2.85	10
<i>Entertainment</i>	2.87	3
<i>Cosmopolitan</i>	2.91	23
<i>Redbook</i>	2.97	8
<i>Family Circle</i>	3.00	10
<i>Ladies Home Journal</i>	3.62	13
<i>Prevention</i>	0	0

^aBreast shapes were rated on a 5-point scale with 1 representing a smaller breast size and 5 representing a larger breast size.

Although we could still test the relationship between *degree* of exposure to images of thinness and other variables, we felt that a mean split of the sample would allow for the relative comparison of thinner and thinnest images, and provide a consistent dependent variable for comparison with the method of breast size quantification. For body shape, the mean was 2.87; for breast shape, the mean split occurred at 2.51. That is, category one contained the thinnest or least curvaceous images (body shape: $M = 2.54$, $SD = .27$; breast shape: $M = 2.22$, $SD = .21$), while category two contained the slightly heavier or more curvaceous images (body shape: $M = 3.30$, $SD = .35$; breast shape: $M = 2.85$, $SD = .17$). Table III shows the two magazine variables (categories)

Table III. Magazine Categories: Body Shape

Magazine Title	Mean Body Shape	Number of Images
Category one		
<i>Teen</i>	1.86	6
<i>Allure</i>	2.29	13
<i>YM</i>	2.41	11
<i>Mademoiselle</i>	2.49	6
<i>Health</i>	2.50	3
<i>Self</i>	2.52	7
<i>Vogue</i>	2.54	26
<i>Ebony</i>	2.55	5
<i>Entertainment Weekly</i>	2.64	4
<i>Details</i>	2.65	8
<i>Elle</i>	2.70	40
<i>New Woman</i>	2.72	6
<i>Fitness</i>	2.84	23
<i>Good Housekeeping</i>	2.85	8
Category two		
<i>Cosmopolitan</i>	2.92	16
<i>Redbook</i>	2.92	7
<i>Shape</i>	2.99	8
<i>Glamour</i>	3.02	16
<i>McCalls</i>	3.17	8
<i>Seventeen</i>	3.19	7
<i>Family Circle</i>	3.32	14
<i>Woman's Day</i>	3.41	18
<i>Ladies Home Journal</i>	3.62	13
<i>People</i>	3.79	7
<i>Essence</i>	4.00	4

created to represent the body shapes, while Table IV shows the two categories created to represent the breast shapes.

After the two magazine categories were created, two body shape and breast shape exposure scores were calculated to represent a participant's exposure to each of the two categories of magazines. These exposure scores were calculated by multiplying a participant's duration of exposure to a magazine by the number of rated images in each magazine category. For example, if a participant reported spending 20 minutes reading a magazine in the first magazine category containing 15 rated images, the exposure score for the first category of magazines would equal 300 (20 minutes multiplied by the 15 images). When a participant reported reading several magazines within the same category, the scores from the multiplication process were summed. Therefore, if this same participant spent 10 minutes reading an additional magazine in the first category containing 10 rateable images, her total summed score for category one would equal 400 (100 + 300). Likewise, if a participant did not read any magazines from a particular

Table IV. Magazine Categories: Breast Shape

Magazine Title	Mean Breast Shape	Number of Images
Category one		
<i>Mademoiselle</i>	1.69	5
<i>Health</i>	2.00	4
<i>Essence</i>	2.08	4
<i>McCalls</i>	2.19	11
<i>YM</i>	2.20	17
<i>Ebony</i>	2.20	7
<i>Allure</i>	2.22	12
<i>Self</i>	2.26	9
<i>Elle</i>	2.31	30
<i>Vogue</i>	2.38	27
<i>Shape</i>	2.42	12
<i>Glamour</i>	2.47	29
<i>Seventeen</i>	2.50	6
Category two		
<i>New Woman</i>	2.57	7
<i>Details</i>	2.59	8
<i>Fitness</i>	2.62	17
<i>Woman's Day</i>	2.67	11
<i>Rolling Stone</i>	2.69	4
<i>People</i>	2.85	10
<i>Entertainment Weekly</i>	2.87	3
<i>cosmopolitan</i>	2.91	23
<i>Redbook</i>	2.97	8
<i>Family Circle</i>	3.00	10
<i>Ladies Home Journal</i>	3.62	13

category, his or her minutes of exposure would equal zero, and his or her exposure score for that category would also equal zero. Summed scores for each body shape and breast shape magazine category became the body shape and breast shape exposure variables.

The creation of these two magazine category variables captured the important elements of duration of exposure to a magazine and the number of images encountered within an exposure period within each category of body shape exposure. Thus, higher levels of each exposure variable represent a longer duration of time and/or a viewing of a larger number of images.

RESULTS

There was a moderate but significant relationship between the overall body and breast stimuli that were rated. For the magazines used in the body shape analyses (Table I), the correlation was .50 ($p < .001$). The correlation between the body and breast ratings was .37 ($p < .001$) for the

Table V. Correlations Among All Measures and Body Shape/Breast Shape Variables^a

	Body Shape		Breast Shape	
	Category One	Category Two	Category One	Category Two
Quetlet	.01	.10	.01	.02
Body Image (EDI-BD)	-.07	-.05	-.04	-.05
Body Image (MBSRQ)	-.01	-.08	-.01	-.04
Eating Disturbance (EDI-B)	-.04	-.09	-.02	-.05
Eating Disturbance (EDI-DT)	-.11	-.14	-.08	-.15
Awareness (SATAQ-A)	.07	.06	.00	.13
Internalization (SATAQ-I)	.14	.04	.09	.09
Self-Esteem (RSE)	-.01	.04	-.01	.04

^a*N* = 175. Lower scores on the MBSRQ measure indicates higher disturbance. Abbreviations: EDI-BD = Eating Disorder Inventor—Body Dissatisfaction; MBSRQ = Multidimensional Body Self-Relations Questionnaire—Physical Appearance; EDI-B = Eating Disorder Inventory—Bulimia; EDI-DT = Eating Disorder Inventory—Drive for Thinness; RSE = Rosenberg Self-Esteem Inventory; SATAQ-A = Sociocultural Attitudes Towards Appearance Questionnaire—Awareness; SATAQ-I = Sociocultural Attitudes Towards Appearance Questionnaire—Internalization.

magazines used for the breast analyses (Table II). The maximum shared variance of 25% suggests that it is appropriate to use the variables independently in analyses.

Table V contains correlations between body shape/breast shape variables and the clinical variables of interest. In addition, Quetlet’s Index (weight divided by height squared), a measure of body mass commonly used to determine the relation between body image and body size, is included in this table. None of the correlations are significant, indicating the distinct lack of a relationship between exposure to body size ideals and measures of body satisfaction, eating disturbance, self-esteem, and one’s own actual degree of obesity.

Table VI contains the intercorrelations among the disturbance measures, revealing the expected significant correlations between body image, eating disturbance, and self-esteem. Additionally, both measures of the SATAQ—Awareness and Internalization—are significantly related to all of the other measures of disturbance. The correlation between Awareness and Internalization is .46, indicating that the variance shared is moderate (21%).

Although the correlations indicate the greater role of awareness and internalization than exposure in understanding body satisfaction, eating disturbance, and self-esteem, regression analyses were conducted to further clarify the issue. Although we have often covaried Quetlet’s Index as a first step in regression analyses, the current findings indicate one’s overall body mass level is not related to any of the exposure variables (Table V); therefore, this step was not taken in the current analyses. In order to maximize

Table VI. Intercorrelations Between Body Image, Eating Disturbance, Sociocultural Awareness and Internalization, and Self-Esteem^a

	EDI-BD	MBSRQ	EDI-B	EDI-DT	SATAQ-A	SATAQ-I	RSE
EDI-BD	–	–.69 ^b	.49 ^b	.64 ^b	.30 ^b	.50 ^b	–.42 ^b
MBSRQ	–	–	–.49 ^b	–.54 ^b	–.33 ^b	–.40 ^b	.55 ^b
EDI-B	–	–	–	.60 ^b	.32 ^b	.28 ^b	–.42 ^b
EDI-DT	–	–	–	–	.30 ^b	.52 ^b	–.52 ^b
SATAQ-A	–	–	–	–	–	.46 ^b	–.28 ^b
SATAQ-I	–	–	–	–	–	–	–.40 ^b
FSE	–	–	–	–	–	–	–

^a*N* = 175. Lower scores on the MBSRQ measure indicates higher disturbance. Abbreviations: EDI-BD = Eating Disorder Inventor—Body Dissatisfaction; MBSRQ = Multidimensional Body Self-Relations Questionnaire—Physical Appearance; EDI-B = Eating Disorder Inventory—Bulimia; EDI-DT = Eating Disorder Inventory—Drive for Thinness; RSE = Rosenberg Self-Esteem Inventory; SATAQ-A = Sociocultural Attitudes Towards Appearance Questionnaire—Awareness; SATAQ-I = Sociocultural Attitudes Towards Appearance Questionnaire—Internalization.

^b*p* < .001.

the possible contribution of exposure, this variable was entered first, followed by the forced entry of awareness and then internalization on step 3.

Tables VII and VIII clearly reveal that awareness and internalization, but not exposure, explain significant variance associated with each of the clinical variables. In each case, for both body shape and breast shape analyses, awareness and internalization account for significant variance. Furthermore, because internalization is entered after awareness in all regressions, the findings indicate that this variable explains considerable variance associated with disturbance measures above and beyond that accounted for by awareness. For instance, for the body shape ratings, internalization accounts for the following *R*² increments: 12.9% additional variance for the EDI-BD dissatisfaction measure, 8.4% for the MBSRQ-Appearance Evaluation variable, 18% for the measure of restrictive eating practices (EDI-DT), and 9.1% for self-esteem. Internalization offers the least additional predictive value for the measure of bulimic symptoms (2.2%). These findings are quite similar for the regressions on the breast size ratings, doubtlessly due to the similar lack of explanatory value afforded by magazine category exposure predictors for both sets of regressions.

DISCUSSION

This paper describes an initial attempt to quantify overall body size and breast size exposure variables based on an empirically determined readership and a reliable coding system of the images contained within the periodicals. Exposure was tested, along with the relative merits of a

Table VII. Multiple Regression Analyses^a: Body Shape

	<i>F</i>	<i>R</i> ² Increment	Cumulative <i>R</i> ²
Criterion: Body Image (EDI-BD)			
Magazine Category One		.005	.005
Magazine Category Two	.09	.001	.006
Sociocultural Awareness ^b	16.23 ^d	.086	.092
Sociocultural Internalization ^c	28.17 ^d	.129	.221
Criterion: Body Image (MBSRQ)			
Magazine Category One		.000	.000
Magazine Category Two	1.02	.006	.006
Sociocultural Awareness ^b	20.20 ^d	.105	.111
Sociocultural Internalization ^c	17.79 ^d	.084	.195
Criterion: Eating Disturbance (EDI-B)			
Magazine Category One		.002	.002
Magazine Category Two	.99	.006	.008
Sociocultural Awareness ^b	18.72 ^d	.098	.106
Sociocultural Internalization ^c	4.29 ^d	.022	.128
Criterion: Eating Disturbance (EDI-DT)			
Magazine Category One		.012	.012
Magazine Category Two	1.72	.010	.022
Sociocultural Awareness ^b	16.91 ^d	.085	.106
Sociocultural Internalization ^c	42.93 ^d	.180	.287
Criterion: Self-Esteem			
Magazine Category One		.000	.000
Magazine Category Two	.34	.002	.002
Sociocultural Awareness ^b	14.90 ^d	.080	.082
Sociocultural Internalization ^c	18.71 ^d	.091	.173

^aOverall *F*'s: EDI-BD *F*(4, 170) = 12.06, *p* < .0001; MBSRQ *F*(4, 170) = 10.39, *p* < .0001; EDI-B *F*(4, 170) = 6.15, *p* < .0001; EDI-DT *F*(4, 170) = 17.28, *p* < .0001; Self-Esteem *F*(4, 170) = 8088, *p* < .0001.

^bDenotes the Awareness subscale of the SATAQ.

^cDenotes the Internalization subscale of the SATAQ.

^d*p* < .001

questionnaire-based index of awareness and internalization, in the prediction of body dissatisfaction, eating disturbance, and self-esteem. The findings clearly showed that exposure offered no predictive value; awareness was a significant correlate of disturbance, and internalization of social norms of appearance accounted for significant and substantial variance even after controlling for the role of awareness.

Although considerable time and effort went into the conceptualization and measurement of the exposure variables, methodological problems were encountered. One limitation involves a problem in rating some of the body shapes appearing in the print media. An examination of the results from the body and breast shape rating process indicated that a very restricted range of rateable shapes was present in the magazines (see Table I). Even the magazine that promoted the largest body shape rating still contained relatively thin-sized images, especially given the 1–9 range of figures on the scale used by raters. Although much of the reason for this restricted

Table VIII. Multiple Regression Analyses^a: Breast Shape

	<i>F</i>	<i>R</i> ² Increment	Cumulative <i>R</i> ²
Criterion: Body Image (EDI-BD)			
Magazine Category One		.002	.002
Magazine Category Two	.21	.001	.003
Sociocultural Awareness ^b	16.49 ^d	.086	.090
Sociocultural Internalization ^c	28.30 ^d	.130	.220
Criterion: Body Image (MBSRQ)			
Magazine Category One		.000	.000
Magazine Category Two	.397	.002	.002
Sociocultural Awareness ^b	19.98 ^d	.104	.107
Sociocultural Internalization ^c	17.04 ^d	.081	.188
Criterion: Eating Disturbance (EDI-B)			
Magazine Category One		.000	.000
Magazine Category Two	.41	.002	.003
Sociocultural Awareness ^b	14.03 ^d	.076	.078
Sociocultural Internalization ^c	8.56 ^d	.044	.123
Criterion: Eating Disturbance (EDI-DT)			
Magazine Category One		.006	.006
Magazine Category Two	2.67	.015	.021
Sociocultural Awareness ^b	15.58 ^d	.081	.102
Sociocultural Internalization ^c	42.86 ^d	.181	.283
Criterion: Self-Esteem			
Magazine Category One		.000	.000
Magazine Category Two	.34	.002	.002
Sociocultural Awareness ^b	15.10 ^d	.081	.083
Sociocultural Internalization ^c	18.5 ^d	.091	.173

^aOverall *F*'s: EDI-BD *F*(4, 170) = 12.0, *p* < .0001; MBSRQ *F*(4, 170) = 10.41, *p* < .0001; EDI-B *F*(4, 170) = 6.17, 12 *p* < .0001; EDI-DT *F*(4, 170) = 17.27, *p* < .0001; Self-Esteem *F*(4, 170) = 8.86, *p* < .0001.

^bDenotes the Awareness subscale of the SATAQ.

^cDenotes the Internalization subscale of the SATAQ.

^d*p* < .001

range of stimuli lies in the *actual* pictorial material available for rating, indicating that the most often read magazines contain quite thin images, we also encountered a methodological issue that possibly exacerbated the problem. Some images were not included in the rating process because of the inability to accurately match the body shape to the schematic figure drawings. On occasion, these images were of larger women in which the body shape was masked, typically by baggy clothing. This hampered efforts to incorporate the occasional larger shape in the body shape rating process.

These logistical problems in coding stimulus materials, especially those of heavier and larger shaped women, may partially account for the failure to find a strong effect for magazine exposure. However, the extremely restricted range of average shapes across the magazines *actually* read by college students suggests strongly that, although there may be periodic representation of larger women, the vast majority of stimuli that women encounter in women's magazines are skewed toward thinness. One strategy

for future researchers might entail the specific recruitment of women who read magazines that contain a sufficient number of rateable larger size female stimulus figures for comparison with the "typical" college student readership selections noted from the current investigation.

An important limitation of this study was our inability to account for the quantity of time that each participant spent reading magazines as opposed to looking at photographs. It is conceivable that the duration of time one spends "looking" at a magazine encompasses looking at pictures, but also reading articles. Clearly, this differentiation would be virtually impossible for individuals to make in a retrospective recall survey, and quite difficult if they self-monitored reading vs. visual inspection over a certain time period. Perhaps an experimental study, in which duration of exposure to photographs vs. duration of reading articles is manipulated, might address this issue in the most rigorous fashion.

Our failure to find an effect of exposure might possibly reflect a process of desensitization consequent to the constant bombardment of images. With such a narrow range of models to view and few stimuli either representing normal or overweight women—or women who have not been glamorized via makeup and clothing—it is likely that the "norm" of "perfection" has become so commonplace that it has produced a numbing or desensitization, thereby not affecting feelings of body satisfaction. It is also possible that exposure may be an important risk at some stage of a women's life, perhaps adolescence, and may actually lead to the onset of awareness and, subsequently, internalization. Related to this issue is a study of adolescent girls by Levine, Smolak, and Hayden (1994) who found that level of reading of magazines containing fitness, beauty, and weight information was strongly related to disturbed eating patterns and body dissatisfaction. It would be most interesting to tap the discrete contributions of exposure, awareness, and internalization in young females. For adult women, it is conceivable that the initial effect of exposure on awareness/internalization is no longer detectable, but that exposure—at some point in development—began the perpetuation of a process culminating in internalization of societal values.

Our findings on internalization replicate the work of Stice and colleagues who have consistently found a direct effect of this risk factor on body dissatisfaction and that it may mediate the effect of other influences, such as perceived pressures from family, friends, and the media to lose weight (Stice et al., 1994, 1996). His findings, along with our own current study, have definite implications for clinical work in the area of body image. For several years, cognitive-behavioral treatment programs for body image disturbance have included a component designed to educate patients about the societal pressures on women to attain and maintain a thin body size

(e.g., Cash, 1996; Rosen, 1996a,b). In addition, many of these programs, along with techniques found to be effective for the treatment of eating disorders, include a cognitive restructuring component that challenges the veracity of patient's beliefs that appear to perpetuate eating-disordered behaviors (e.g., Pike, Loeb, & Vitousek, 1996)—many such cognitions are appearance related, produced and reinforced by societal messages regarding the unacceptability of an overweight physical status. Stormer and Thompson (1995) recently reported on a treatment program constructed to detail the various strategies and methods utilized by the mass media to instill feelings of inadequacy and inferiority in women regarding their appearance. This 30-min psychoeducational intervention, designed specifically to inform individuals of the marketing strategies and ruses used to perpetuate women's body dissatisfaction, was found to have positive effects on women's appearance evaluation. The current findings regarding the connection between internalization of societal values regarding physical attractiveness lend support to the further inclusion of such psychoeducative and cognitive treatment components in programs designed to modify eating and shape-related disorders.

APPENDIX A

Figure Selection Criteria for Body Shape and Breast Shape Rating Process

- Figures must be larger than a 3 × 3cm square.
- Figures must be positioned so that their bodies are within 45° of facing front or directly back.
- Figures must be well defined (i.e., baggy clothing must not be masking body shape).
- At least three-fourths of the arms, upper torso, stomach, or legs must be visible or not obscured by baggy clothing.
- Figures that are facing directly back cannot be rated for breast shape.
- Position of the figure must be comparable to that of the position of the schematic drawings.
- Breast shape cannot be rated if the figures are wearing dark shirts.
- Preadolescents and adolescents will not be selected for rating.
- Pregnant women will not be selected for rating of either body or breast shape.

REFERENCES

- Alfonso, V. C. (1995). Measures of quality of life, subjective well-being, and satisfaction with life. In D. B. Allison (Ed.), *Handbook of assessment methods for eating behaviors and weight-related problems*. Thousand Oaks, CA: Sage.
- Altabe, M. N., & Thompson, J. K. (1996). Is there a body image self-schema? *Cognitive Therapy and Research*.
- Andersen, A. E., & DiDomenico, L. (1992). Diet vs. shape content of popular male and female magazines: A dose-response relationship to the incidence of eating disorders? *International Journal of Eating Disorders*, 11, 283-287.
- Brown, T. A., Cash, T. F., & Mikulka, P. J. (1990). Attitudinal body-image assessment: Factor analysis of the Body-Self Relations Questionnaire. *Journal of Personality Assessment*, 55, 135-144.
- Cash, T. F. (1996). The treatment of body image disturbances. In J. K. Thompson, (Ed.), *Body image, eating disorders, and obesity: An integrative guide for assessment and treatment*. Washington, DC: American Psychological Association.
- Fallon, A. (1990). Culture in the mirror: Sociocultural determinants of body image. In T. F. Cash & T. Pruzinsky (Eds.), *Body images: Development, deviance, and change*. New York: Guilford Press.
- Garner, D. M. (1991). *Eating Disorder Inventory—2: Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Garner, D. M., Garfinkel, P. E., Schwartz, D., & Thompson, M. (1980). Cultural expectations of thinness in women. *Psychological Reports*, 47, 483-491.
- Garner, D. M., Olmsted, M. P., & Polivy, J. P. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders*, 2, 15-34.
- Guillen, E. O., & Barr, S. I. (1994). Nutrition, dieting, and fitness messages in a magazine for adolescent women, 1970-1990. *Journal of Adolescent Health*, 15, 464-472.
- Heinberg, L. J. (1996). Theories of body image disturbance: Perceptual, developmental and sociocultural factors. In J. K. Thompson, (Ed.), *Body image, eating disorders, and obesity: An integrative guide for assessment and treatment*. Washington, DC: American Psychological Association.
- Heinberg, L. J., & Thompson, J. K. (1995). Body image and televised images of thinness and attractiveness: A controlled laboratory investigation. *Journal of Social and Clinical Psychology*, 14, 1-14.
- Heinberg, L. J., Thompson, J. K., & Stormer, S. (1995). Development and validation of the Sociocultural Attitudes Towards Appearance Questionnaire. *International Journal of Eating Disorders*, 17, 81-89.
- Levine, M. P., Smolak, L., & Hayden, H. (1994). The relation of sociocultural factors to eating attitudes and behaviors among middle school girls. *Journal of Early Adolescence*, 14, 471-490.
- Nemeroff, C. J., Stein, R. I., Diehl, N. S., & Smilack, K. M. (1994). From the Cleavers to the Clintons: Role choices and body orientation as reflected in magazine article content. *International Journal of Eating Disorders*, 16, 167-176.
- Pike, K. M., Loeb, K., & Vitousek, K. (1996). Cognitive-behavioral therapy for anorexia nervosa and bulimia nervosa. In J. K. Thompson (Ed.), *Body image, eating disorders, and obesity: An integrative guide for assessment and treatment*. Washington, DC: American Psychological Association.
- Rosen, J. C. (1996a). Body dysmorphic disorder: Assessment and treatment. In J. K. Thompson, (Ed.), *Body image, eating disorders, and obesity: An integrative guide for assessment and treatment*. Washington, DC: American Psychological Association.
- Rosen, J. C. (1996b). Improving body image in obesity. In J. K. Thompson (Ed.), *Body image, eating disorders, and obesity: An integrative guide for assessment and treatment*. Washington, DC: American Psychological Association.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

- Stice, E., & Shaw, H. E. (1994). Adverse effects of the media portrayed thin-ideal on women and linkages to bulimic symptomatology. *Journal of Social and Clinical Psychology, 13*, 288-308.
- Stice, E., Nemeroff, C., & Shaw, H. E. (1996). Test of the dual pathway model of bulimia nervosa: Evidence for dietary restraint and affect regulation mechanisms. *Journal of Social and Clinical Psychology, 15*, 340-363.
- Stice, E., Schupak-Neuberg, E., Shaw, H. E., & Stein, R. I. (1994). Relation of media exposure to eating disorder symptomatology: An examination of mediating mechanisms. *Journal of Abnormal Psychology, 103*, 836-840.
- Stice, E., Ziemba, C., Margolis, J., & Flick, P. (1996). The dual pathway model differentiates bulimics, subclinical bulimics, and controls: Testing the continuity hypothesis. *Behavior Therapy, 27*, 531-549.
- Stormer, S., & Thompson, J. K. (1995, November). *A psychoeducational program for the improvement of body dissatisfaction*. Paper presented at the Advancement of Behavior Therapy, San Diego, CA.
- Stormer, S., & Thompson, J. K. (1996). Explanations of body image disturbance: A test of maturational status, negative verbal commentary, social comparison, and sociocultural hypotheses. *International Journal of Eating Disorders, 19*, 193-202.
- Tantleff-Dunn, S., & Thompson, J. K., Sellin-Wolters, S., & Ashby, A. (1997, August). *Breast and chest size: Ideals and stereotypes over six years*. Paper presented at the American Psychological Association, Chicago, August.
- Thompson, J. K. (1996). Assessing body image disturbance: Measures, methodology, and implementation. In J. K. Thompson (Ed.), *Body image, eating disorders, and obesity: An integrative guide for assessment and treatment*. Washington, DC: American Psychological Association.
- Thompson, J. K., & Tantleff, S. (1992). Female and male ratings of upper torso: Actual, ideal, and stereotypical conceptions. *Journal of Social Behavior and Personality, 7*, 345-354.
- Thompson, M. A., & Gray, J. J. (1995). Development and validation of a new body-image assessment scale. *Journal of Personality Assessment, 64*, 258-269.
- Wiseman, C. V., Gray, J. J., Mosimann, J. E., & Ahrens, A. H. (1992). Cultural expectations of thinness in women: An update. *International Journal of Eating Disorders, 11*, 85-89.

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