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January 1, 1998

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Realistic Weight Perception and Body Size Assessment in a Racially Diverse Community Sample of Dieters

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Abstract

Recently, a shift in obesity treatment away from emphasizing ideal weight loss goals to establishing realistic weight loss goals has been proposed; yet, what constitutes "realistic" weight loss for different populations is not clear. This study examined notions of realistic shape and weight as well as body size assessment in a large community-based sample of African-American, Asian, Hispanic, and white men and women. Participants were 1893 survey respondents who were all dieters and primarily overweight. Groups were compared on various variables of body image assessment using silhouette ratings. No significant race differences were found in silhouette ratings, nor in perceptions of realistic shape or reasonable weight loss. Realistic shape and weight ratings by both women and men were smaller than current shape and weight but larger than ideal shape and weight ratings. Compared with male dieters, female dieters considered greater weight loss to be realistic. Implications of the findings for the treatment of obesity are discussed.

Key words: body size assessment, gender differences, dieters, race differences, realistic shape, reasonable weight loss

Introduction
Being overweight has become increasingly common in the United States (22), and correspondingly, the necessity for effective treatment of obesity has increased. Given the difficulty of weight loss maintenance (19,41), and the high rates of attrition and relapse (i.e., 20% to 45%) reported in obesity treatment research (2,4,21,26,39,43), in recent years, experts have proposed a shift in obesity treatment away from emphasizing ideal weight loss goals to establishing "realistic" weight loss goals (11,12,40). The movement toward realistic weight loss goals is supported in part by findings that suggest that dropout rates are highest among patients with obesity with higher initial body mass index (BMI) and lower ideal weights (4). Moreover, research has shown that even modest weight loss (e.g., 10%) confers significant health benefits (11), indicating that from a clinical perspective, it may not be necessary to promote more ambitious weight loss goals.

The differentiation between realistic and ideal weights and shapes in the obesity literature is relatively new, and to date, few empirical data are available on what individuals, particularly those who are overweight, consider to be realistic size and shape goals. In a recent study, Foster and colleagues (13) assessed patients' weight loss goals and expectations by asking them to indicate their "goal weight," "dream weight," "happy weight," "acceptable weight," and "disappointed weight." After treatment, a large percentage of patients did not even reach their "disappointed weight" goals, illustrating the need to help patients with obesity accept more modest and reasonable weight loss.

Studies of body size assessment and satisfaction, including those conducted with populations with obesity, generally have asked individuals to rate their "ideal" (vs. current) shape and weight (e.g., 9,32,33,38). However, little is known about the perception of realistic shapes and weights among populations that are overweight. Increased understanding of the weight and shape standards of persons who are overweight would be helpful for the treatment of obesity, especially because individual motivation and expectation are crucial components of successful weight loss (40).
Although there is an extensive literature on body image, much of this literature focuses on women and is limited in scope in terms of ethnic diversity and age range. More research about body image in minorities, men, and older adults is needed.

Obesity has become a very significant problem for minority groups, and in particular for minority women (22). The prevalence of obesity among black women is approximately twice that of white women (7,29), increasing their risk for diabetes, hypertension, and other obesity-related medical conditions; approximately 45.1% of black women are overweight and 19.7% are severely overweight (22). It has been proposed that one factor contributing to greater obesity among black women is less motivation to control weight because of culturally determined permissive attitudes toward obesity (23). Even with higher weight levels, black women report more positive feelings toward their bodies and less concern with bodyweight (16,18,19, 31,37,42) and endorse a larger body ideal than do their white counterparts (20,28,29,31,33). Additionally, black men may be more accepting of larger figures (18,28,30), contributing to a culture where there is less pressure for black women to be thin. Given these indications for obesity in black women, it is important to examine what a community sample of minority individuals consider to be acceptable and attractive body sizes. The purpose of this study was to investigate perceptions of realistic shape and weight, and how they compare with perceptions of current and ideal or attractive shape and weight, in a large community sample of female and male dieters of various ethnicities.

Method

Participants

Participants for this study were selected from a sample of over 20,000 men and women who had responded to a survey about body image and eating behaviors conducted among subscribers to Consumer Reports. The total sample used in this study consisted of all African-American survey respondents (243 women, 155 men), all Asian respondents (461 women, 418 men), all Hispanic respondents (136 women, 128 men), and a subsample of randomly selected white respondents (187 women, 165 men).

Instrument and Procedure

Participants were recruited as part of a two-wave survey conducted in collaboration with Consumer Union. In wave one, a series of questions evaluating commercial diet programs was included in the 1992 annual survey distributed to subscribers of Consumer Reports to evaluate various products and services. The results of this initial survey have been published elsewhere (5). At the end of the initial survey, subscribers were asked to indicate whether they would be willing to participate in a second survey. To be eligible, respondents had to have tried to lose weight within 3 years before the survey. Over 20,000 individuals completed the second survey.

The wave two survey consisted of extensive questions about body image, weight, dieting and weight loss history, dieting practices, feelings and attitudes toward weight and weight loss, motivations for and beliefs about weight control, abnormal eating behaviors, and demographic information. Survey items were derived in part from published inventories (8,14,15), and new questions were developed for those areas where scales did not exist. (The complete survey is available on request.) The wave two questions pertaining to this study are described below.

Demographic Information. Demographic variables were gender, age, race (African-American, Asian, White, Hispanic, or other), and total household income (divided into three levels: less than $30,000, $30,000 to $59,999, $60,000 and over).

Body Size, Shape, and Weight. Referring to nine female and nine male silhouettes depicting body size, ranging from severe emaciation (“1”) to severe obesity (“9”) (36), participants were asked to provide ratings for the following questions: “your current size and shape”; “the size and shape you would most like to be” (i.e., ideal); “the smallest size and shape you feel is realistic for you to attain”; “the female size and shape you feel is most attractive” (for men, this rating constituted “other attractive”); “the male size and shape you feel is most attractive” (for women, this rating constituted “other attractive”); “the female size and shape you feel men in general find most attractive” (for women, this rating constituted “attractive”); “the male size and shape you feel women in general find most attractive” (for men, this rating constituted “attractive”). This instrument was developed and validated by Stunkard and colleagues (36), who report satisfactory validity. Additionally, participants were asked to report in pounds what weight they consider ideal for themselves from an appearance perspective, and what weight they believe to be reasonable for them to maintain, given their history of dieting.

BMI. BMI (weight in kilograms/height^2 in meters) was calculated on the basis of participants’ self-reported height and weight. Research has shown that self-reports are highly correlated with actual heights and weights and are sufficiently valid to use in epidemiological and survey studies (6,25).

Results

Sample Description and Data Analysis

Two-by-four (sex x race) analyses of variance (ANOVA) revealed significant race and sex differences on demographic variables but no interaction effects. The Hispanic group was significantly younger than the other groups (F[3,1863] = 10.16, p = 0.0001), the African-American group reported significantly less household income than the Asian group and the white group (F[3,1737] = 4.02.
Realistic Weight Perception in Dieters, Cachelin et al.

Table 1. Demographic and weight comparisons between the races, for each sex

<table>
<thead>
<tr>
<th>Parameter</th>
<th>African-American</th>
<th>Asian</th>
<th>White</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>42.5</td>
<td>48.2</td>
<td>44.0</td>
<td>49.0</td>
</tr>
<tr>
<td>SD</td>
<td>10.4</td>
<td>12.1</td>
<td>11.8</td>
<td>12.3</td>
</tr>
<tr>
<td>Income*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>2.1</td>
<td>2.4</td>
<td>2.3</td>
<td>2.4</td>
</tr>
<tr>
<td>SD</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.6</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>29.8</td>
<td>30.1</td>
<td>26.7</td>
<td>27.8</td>
</tr>
<tr>
<td>SD</td>
<td>7.2</td>
<td>5.3</td>
<td>5.5</td>
<td>5.2</td>
</tr>
</tbody>
</table>

Note. Total n=1,893.

*Level 1 = less than $30,000; level 2 = $30,000 to $59,999; level 3 = $60,000 and over.

$p = 0.0074$), and the African-American participants were on average heavier than others, as indicated by significantly greater mean BMI ($F[3,1840]=18.79$, $p=0.0001$). Compared with men, women were significantly younger ($F[1,1863]=61.68$, $p=0.0001$), reported lower levels of household income ($F[1,1737]=19.16$, $p=0.0001$), and had lower mean BMI ($F[1,1840]=5.35$, $p=0.0208$). (See Table 1 for group means.)

A series of preliminary regression analyses were conducted to determine whether the demographic variables, where there were significant group differences, were significantly correlated with the outcome variables of interest. Income level was not a significant predictor of any dependent variable ($p>0.05$) and therefore was not included in subsequent analyses. Analyses of covariance (ANCOVA), with age and BMI as covariates, were conducted to examine between-group race and sex differences in ratings of silhouettes and reasonable weights.1 Paired t-tests were used to compare realistic figure ratings with current and ideal figure ratings within sexes. Because multiple comparisons (approx. 40) were conducted, inflating the chance of type I error, the Bonferroni correction was used, resulting in a $p$ value of $p=0.05/40=0.001$.

Silhouette Ratings and Realistic Shape

Two-by-four (sex x race) ANCOVAs revealed significant sex differences on silhouette ratings, but no main effect of race or interaction effects on any dependent variables ($p>0.05$). Women chose ideal and realistic figures that were significantly smaller than those chosen by men: for ideal figure, mean = 3.4 for women vs. 4.3 for men, $F[1,1791]=80.12$, $p=0.0001$; for realistic figure, mean = 3.7 for women vs. 4.4 for men, $F[1,1795]=16.73$, $p=0.0001$. Women displayed greater body dissatisfaction than did men, measured as the difference between current and ideal figures (mean difference = 1.5 for women vs. 1.3 for men, $F[1,1786]=27.42$, $p=0.0001$). Additionally, women chose a female figure attractive to men that was significantly thinner than the female figure actually preferred by men (mean = 3.0 for women vs. 3.5 for men, $F[1,1762]=10.19$, $p=0.0001$). By contrast, men were accurate in their assessment of the male figure attractive to women (mean = 3.8 for women and 3.9 for men, $F[1,1778]=0.02$, $p=0.8808$). Means and standard deviations for the groups are presented in Table 2.

Paired t-test comparisons revealed that for women, realistic figure was significantly smaller than current figure (mean difference = -1.24, $t[1015]=43.76$, $p<0.0001$), but larger than ideal figure (mean difference = 0.25, $t[1011]=15.32$, $p<0.0001$). A similar pattern was obtained for men (for realistic vs. current: mean difference = -1.23, $t[855]=41.46$, $p<0.0001$; for realistic vs. ideal: mean difference = 0.10, $t[855]=4.83$, $p<0.0001$). Furthermore, although the sex difference on the difference score current-realistic figure was nonsignificant, ($F[1,1790]=2.30$, $p=0.1293$), there was a significant sex difference on realistic–ideal figure, ($F[1,1786]=27.14$, $p=0.0001$), with the difference being greater for women. In other words, the figure women perceived as realistic for themselves was significantly further away from their ideal figure than was the case for men.

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1 Data were initially analyzed by means of two (sex) by four (race) ANOVA. Data analyses were repeated with age and BMI as covariates (ANCOVA). Because results were essentially identical, only ANCOVA results are reported. Unadjusted group means are presented to allow comparison with findings in the literature. Adjusted means, ANOVA, and multiple linear regression results are available on request.
Table 2. Silhouette rating comparisons between the races, for each sex

<table>
<thead>
<tr>
<th>Parameter</th>
<th>African-American</th>
<th>Asian</th>
<th>White</th>
<th>Hispanic</th>
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<tbody>
<tr>
<td>Current</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>5.0</td>
<td>5.8</td>
<td>4.8</td>
<td>5.6</td>
</tr>
<tr>
<td>SD</td>
<td>1.3</td>
<td>1.0</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>Ideal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.4</td>
<td>4.3</td>
<td>3.4</td>
<td>4.3</td>
</tr>
<tr>
<td>SD</td>
<td>0.7</td>
<td>0.8</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Realistic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.7</td>
<td>4.4</td>
<td>3.6</td>
<td>4.3</td>
</tr>
<tr>
<td>SD</td>
<td>0.9</td>
<td>0.9</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Attractive*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>2.9</td>
<td>3.8</td>
<td>3.0</td>
<td>3.9</td>
</tr>
<tr>
<td>SD</td>
<td>0.7</td>
<td>0.7</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Other attractive†</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>4.1</td>
<td>3.8</td>
<td>4.0</td>
<td>3.7</td>
</tr>
<tr>
<td>SD</td>
<td>0.7</td>
<td>0.7</td>
<td>0.7</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Note. Silhouette ratings range from "1," representing severely emaciated, to "9," representing severely obese.

*Size and shape believed to be most attractive to the opposite sex.
†Size and shape of the opposite sex that they find most attractive.

Reasonable Weight Loss

Reasonable weight loss was calculated for each participant as current weight minus reasonable weight. Once again, two-by-four (sex x race) ANCOVA revealed a significant sex difference on this variable, but no main effect of race or interaction effect (p>0.05). What women considered a reasonable weight loss was significantly larger than what men considered a reasonable weight loss (mean = 23.8 lbs. for women vs. 16.1 lbs. for men, F[1,1793] = 71.65, p = 0.0001). Put differently, men considered losing 8.7% of their current weight as reasonable, whereas women considered a weight loss of 14.7% to be reasonable. Additionally, for both men and women, reasonable weight was significantly greater than ideal weight (mean difference = 7.14 lbs., t[1866] = 29.39, p<0.0001). Reasonable weight loss for each group is presented in Table 3.

Discussion

Our study examined perceptions of realistic shape and weight as well as body size assessment in a large community sample of men and women. The participants included in this study represented groups for which relatively little information on body size assessment is available: dieters (primarily overweight) of both sexes, of mature age (i.e., middle aged as opposed to the typical college population), and of four distinct races—African-American, Asian, Hispanic, and white. No significant race differences were found on any of the outcome variables, which included: reasonable weight loss, as well as silhouette ratings of current figure, ideal figure, realistic figure, figure most attractive to the opposite sex, and figure of the opposite sex most preferred. As expected, women chose realistic and ideal figures that were smaller than men’s and reported greater body dissat-

Table 3. Mean reasonable weight loss reported by each group

<table>
<thead>
<tr>
<th>Group</th>
<th>African-American</th>
<th>Asian</th>
<th>White</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>29.8</td>
<td>21.0</td>
<td>23.3</td>
<td>23.6</td>
</tr>
<tr>
<td>SD</td>
<td>30.2</td>
<td>22.8</td>
<td>26.2</td>
<td>25.7</td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>19.6</td>
<td>15.7</td>
<td>14.9</td>
<td>15.1</td>
</tr>
<tr>
<td>SD</td>
<td>20.1</td>
<td>20.4</td>
<td>19.5</td>
<td>17.2</td>
</tr>
</tbody>
</table>

Note. Numbers represent weight loss in pounds. Reasonable weight loss was calculated as reported current weight minus reasonable weight.
isfaction. Additionally, women were inaccurate in their assessment of the female figure attractive to men, choosing figures that were considerably thinner than what men actually preferred. These findings demonstrating gender differences in body size assessment are consistent with those of other investigators, who have studied college students and white adults (9,32,38). The phenomenon of gender differences in body image assessment appears to be quite stable across different populations.

With respect to realistic figure and reasonable weight loss, both men and women chose realistic figures that were smaller than their current figures but larger than their ideal figures and likewise reported reasonable weights for themselves that were in between their current and ideal weights. Once again, however, there were significant sex differences: women considered a greater weight loss to be reasonable for them and, at their realistic figure, expected to be further from their ideal figure than men. This finding supports research indicating that body image and weight concerns continue to be more important for women than men throughout the lifespan (27,32,38).

Given the race differences in body image reported especially for women (3,7,17,20,28,29,33,34,37), the finding in our study of no race differences on any figure ratings was unexpected. One possible explanation is that perhaps dieters as a group, regardless of race, are more similar than non-similar in terms of size and weight goals, ideals, and preferences. It has been proposed that although black women who are overweight may in general be less likely to feel that they have a weight problem (29), once an individual falls into the category where she is dissatisfied with her shape and weight and undertakes dieting, she shares the same body image perceptions as her white counterpart (7,35). The findings from our study suggest that such an explanation might apply to Asian and Hispanic (including male) dieters as well.

In terms of men’s preference for female figures, the finding of no race differences in ratings for most attractive female silhouette is consistent with that of some other investigators (1,28) but not others (30). The inconsistency in findings could be the result of methodological differences. For example, Allison and colleagues (1), in their study using both white and black female silhouettes, found a significant overall main effect for silhouette type, with heavier black than white figures being preferred. The silhouettes used in our study (36), although widely used in such research, do represent white figures. (Rosen et al. [30] used side-view silhouettes of a female figure.) Hence, the possibility cannot be ruled out that the minority men in our study were rating the female figure that they find most attractive for white women. This question can be better addressed in future studies by incorporating silhouettes that represent, as much as is possible, different ethnicities and by using similar instruments and methodology across studies.

Our study provides preliminary information on what a large number of dieters of both sexes and various races consider to be reasonable weight loss. An important question in obesity research has been whether patients will accept reasonable weight goals (11). On the basis of this study, it appears that dieters of both sexes do choose realistic figure and reasonable weight loss goals for themselves that are larger than their ideals. Although these results cannot directly be generalized to patients with obesity who are seeking treatment, they do indicate that dieters do themselves concede larger than "ideal" shapes and weights. An interesting observation from our findings is that men’s expectations are more in accord with the 10% weight loss solution that researchers of obesity treatment consider realistic (12,40). Women, on the other hand, expect more weight loss to be reasonable for them. Given women’s greater concern for thinness and the current standards of western society, this gender difference is not surprising. Implications for treatment are that women with obesity may require more emphasis on body image acceptance and more restructuring of their weight loss goals than do men.

Additionally, it should be kept in mind that although dieters are willing to concede reasonable weight loss goals that are larger than their ideals in surveys, behaviorally, they may pursue the more drastic (and often unattainable) ideal goals when actually attempting weight loss. Given the potential hazards of yo-yo dieting (24), obesity treatment should emphasize integrating modest weight loss goals with modifications in lifestyle, such as increasing exercise (rather than restricting food intake). Lifestyle modifications accompanied by moderate weight loss can enhance body image, improve self-esteem, and decrease weight preoccupation (10).

Methodologically, these findings suggest that the distinction between ideal vs. reasonable standards should be made clear to participants in body image assessment research, so that similar concepts are measured across studies. Importantly, a precise definition for "realistic" or "reasonable" weight loss needs to be developed and consistently adopted by researchers, in order to prevent inconsistency in future findings. For instance, Foster and colleagues (13), in order to assess reasonable weight loss, asked patients to report their "goal" weight, whereas in our study, we asked participants to indicate the "weight you believe is reasonable for you to maintain given your history with dieting and weight". Foster et al. found that their female patients’ goal weight averaged a 32% reduction in bodyweight, whereas our female dieters considered on average a 14.7% reduction to be reasonable. Certainly, these disparate findings could have been the result of the different populations studied, but they are also likely to have been the result of the different terminologies used. Consensus among researchers as to what constitutes a "reasonable" weight (i.e., a healthy weight? an acceptable weight?) and how to define it is nec-
necessary. Similarly, the distinction between "healthy" and "reasonable" weight loss is yet unclear. Researchers seem to equate the two concepts, considering reasonable weight loss to be an amount that is associated with improvements in weight-related health complications for individuals with obesity (12,40). Individuals themselves, however, may not share this view; for patients, a "reasonable" weight loss may be one that they have attained in the past, whereas a "healthy" weight may be a seemingly arbitrary number recommended by a physician. Future studies are needed that compare patients' and professionals' notions of healthy and reasonable weight goals.

The main limitation of this study was the self-selected nature of the sample. Participants were those subscribers to Consumer Reports who elected to receive and complete the questionnaire on eating habits and weight. Furthermore, with the exception of race differences, the sample was quite homogeneous in that all participants were dieters and were primarily of middle age and of middle- to upper-social class. Our findings, hence, may not necessarily generalize to the population at large. Future studies with diverse minority populations are needed to help determine whether any differences (or lack thereof) in body size assessment and notions of weight loss are the result of race per se or of differences in social class and/or age. Limitations notwithstanding, this study contributes to what little is currently known about body image in community samples representing different ethnicities. Additionally, it appears that the concept of a realistic figure or reasonable weight loss goal is a valid one and may hold promise for the treatment of obesity.

Acknowledgments
We thank Consumer Union and the staff of Consumer Reports magazine for their role in designing the survey and collecting the data. We also thank the Fetzer Institute, which provided support for distributing the survey and data analysis. The interpretation of data reflects the work of authors and does not necessarily represent positions of Consumer Union or the Fetzer Institute. We gratefully acknowledge Dr. Faith-Anne Dohm for her assistance with data analysis.

References


