

Ethnic Differences in Female Overweight: Data from the 1985 National Health Interview Survey

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Abstract: Ethnic differences in female overweight were analyzed using data from the 1985 National Health Interview Survey. The sample consisted of approximately 17,000 women, ages 18 and over. After adjusting for age and poverty status, there were clear differences in the proportions of women 20 per cent or more overweight among Black, Hispanic and other White women (35, 26 and 20 per cent, respectively). Black women were less likely than White women to perceive themselves as overweight when categorized by actual

weight relative to ideal weight; however, within categories of weight relative to other women of the same ethnic group, all women not Hispanic were equally likely to consider themselves overweight. There was no difference by ethnicity in the proportion of women trying to lose weight among those who perceived themselves as overweight. These findings have implications for programs designed to modify weight, since they suggest that women use ethnic-specific standards in assessing overweight. (*Am J Public Health* 1988; 78:1326-1329.)

Introduction

Overweight is a serious problem for many adults in the United States. According to data collected in 1976-80 in the second National Health and Nutrition Examination Survey (NHANES II), 34 million people between the ages of 20 and 74 were overweight (i.e., their weight was equal to or greater than that at the 85th percentile for men and women of ages 20-29), and 13 million were severely overweight (at or above the 95th percentile).¹ It is not surprising then that Americans are concerned with their weight. The head of a National Institutes of Health consensus panel on the health implications of overweight reported that one billion tablets of phenylpropranolamine were sold over the counter as appetite suppressants in 1983. Another member of that panel added that weight loss clubs such as Weight Watchers and Overeaters Anonymous attract more than one million clients each week.²

Although our collective attempts to lose weight undoubtedly reflect concerns with physical appearance as well as with health,³ there is ample medical justification for maintaining a lean body weight. Previous research has shown that obesity is associated with increased risk of a number of diseases, including hypertension, diabetes, arthritis, gout, and gall bladder disease.⁴⁻⁹ For women, there is evidence that being overweight is associated with increased risk of breast, endometrial and cervical cancer.¹⁰ In addition, obesity has been linked with prolonged hospitalization¹¹ and with overall increased mortality among adults.¹²

Prior research on obesity in the United States has consistently shown that Black women are more likely to be overweight than White women or men of either race.¹³ In the period 1971-74, the mean height of White and Black women was identical, while the mean weight of Black women was 14 pounds heavier than that for White women.¹⁴ There is a corresponding racial differential in female mortality associated with overweight,¹³ with Black women having higher death rates than White women from coronary heart disease, stroke, and hypertension.

This paper examines the relationship between actual weight, self-perceived weight, and attempts to lose weight among women of three ethnic groups in an effort to add to our understanding of the causes of ethnic differentials in female body weight.

Methods

The data used in this analysis were drawn from the 1985 National Health Interview Survey (NHIS) of Health Promotion and Disease Prevention. The NHIS is a continuous, cross-sectional household interview survey conducted by the National Center for Health Statistics. Each week a probability sample of households in the civilian noninstitutionalized population of the United States is interviewed by personnel of the US Bureau of the Census to obtain information on the health and other characteristics of each household member.¹⁵ Questions on special supplemental topics usually are asked of a single sample household member. The 1985 Health Promotion/Disease Prevention (HPDP) supplement, upon which this analysis is based, was restricted to adults 18 years of age and older and included 1,955 Black women, 985 Hispanic women, and 14,330 other White women who responded to the survey.

The 1985 HPDP questionnaire included questions on current height and weight (in indoor clothing without shoes), self-perception of weight, and attempts to lose weight. The self-reported data on height and weight were used to create a body mass index (BMI), the Quetelet index, and relative weight. Relative weight, based on the height and weight chart published by the Metropolitan Life Insurance Company,¹⁵ was defined as the ratio of actual weight to the midpoint of the desirable weight range for a woman of medium build or frame. For each height and weight combination, one inch of height and two pounds of weight were subtracted from the values in the Metropolitan Life Insurance Company table, to account for the fact that their figures were based on people wearing shoes with one-inch heels.

All data presented in this paper have been weighted to represent the distribution of the US population by age, race, and sex.¹⁵ Ethnic differences cited in the text all exceed the $p < .05$ level.

In examining the data for Hispanic women, it is important to recognize that these women form a diverse ethnic-cultural group. Data from the Hispanic Health and Nutrition Examination Survey (HHANES), conducted by the National

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TABLE 1—Deciles of the BMI Distribution for Women Age 18 and Over, by Ethnicity: United States, 1985

Decile	All Women Age 18+	Ethnic Group		
		Black	Hispanic	Other White
1st	19.1	20.0	19.5	19.0
2nd	20.3	21.5	20.8	20.1
3rd	21.3	22.6	22.0	21.0
4th	22.2	23.8	23.0	21.9
5th	23.3	25.0	24.0	22.9
6th	24.4	26.5	25.4	24.0
7th	25.8	28.2	26.6	25.3
8th	27.9	30.4	28.4	27.3
9th	31.0	33.7	31.9	30.1

Center for Health Statistics in 1982–84¹⁷ will provide useful information on differences in body weight among subgroups of the Hispanic population.

Results

The median BMI for all US women aged 18 and older is 23.3, as shown in Table 1. The distribution of BMI in the female population is heavily skewed, with the range of overweight exceeding the range of underweight. The increase in median BMI between the second and third deciles of the overall BMI distribution is only 1.0 (21.3 minus 20.3), compared to a difference of 3.1 (31.0 minus 27.9) between the eighth and ninth deciles.

Hispanic women are slightly heavier than other White women, and Black women tend to weigh more than either of the other two groups. The median BMI for Black women is 25.1, compared to 24.1 for Hispanic women and 22.9 for other White women. The range of BMIs is most concentrated for other White women and most dispersed for Black women.

TABLE 2—Per Cent Distribution of Women Age 18 and Over and Median BMI, by Age and Poverty Status, According to Ethnicity: United States, 1985

Age (years) and Poverty Status	Ethnic Group		
	Black	Hispanic	Other White
Per Cent Distribution			
18–24	19.4	22.8	14.5
25–44	43.8	48.0	40.1
45–64	23.6	21.1	26.4
65+	13.2	8.1	19.0
% Above poverty level	64.1	77.4	89.9
% At or below poverty level	35.9	22.6	10.1
Median BMI			
18–24	22.7	22.3	21.1
25–44	24.6	24.0	22.1
45–64	27.5	25.8	24.1
65+	26.3	25.7	24.1
Above poverty level	24.8	23.8	22.8
At or below poverty level	25.6	25.4	23.2

Note: Poverty status was determined on the basis of family income and number of family members, using the poverty level cut-off definitions established by the Current Population Survey.¹⁸

TABLE 3—Per Cent Distribution of Women Age 18 and Over, Standardized for Age and Poverty Status, by Relative Weight, According to Ethnicity: United States, 1985

Relative Weight	All Women Age 18+	Ethnic Group		
		Black	Hispanic	Other White
	%	%	%	%
10% or more below ideal	20.2	11.7	14.6	22.0
Within 10% of ideal	44.7	37.9	44.3	45.6
10–19.9% above ideal	12.8	15.7	15.6	12.2
20% or more above ideal	22.3	34.7	25.5	20.2

Table 2 shows that the age distributions of the three ethnic groups differ, with Hispanic women the youngest, on average, and other White women the oldest. Since BMI increases with age, as shown in the lower panel of the table, these figures suggest that crude data may understate the ethnic differential in overweight.

Table 2 also shows that the proportion of women with family incomes below the poverty level is lowest for other White women and highest for Black women. Since poor women are heavier than those who are not poor (lower panel), this pattern suggests that crude data might overstate ethnic differentials in overweight. Although the net effect of these two opposing influences proves to be minimal, Tables 3–5 have been adjusted for age and poverty.

Table 3 shows the age/poverty-adjusted relative weight distribution for all women 18 years of age and older. One-fifth of all US women are 10 per cent or more below the ideal weight for women of their height, slightly less than half are within 10 per cent in either direction of their ideal weight, 13 per cent are between 10 and 20 per cent overweight, and 22 per cent are 20 per cent or more overweight, a commonly used definition of obesity. There are strong ethnic differentials in the distribution of women by relative weight which reflect the BMI differences shown in Table 1.

Table 4 shows that, within each category of relative weight, other White women are more likely than Black women to perceive themselves as being overweight. The proportions of women considering themselves overweight are higher for Hispanic women than for Black women in the

TABLE 4—Per Cent of Women Age 18 and Over, Standardized for Age and Poverty Status, Who Consider Themselves Overweight, by Relative Weight and Quartile of Ethnic-Specific BMI Distribution, According to Ethnicity: United States, 1985

Relative Weight	All Women Age 18+	Ethnic Group		
		Black	Hispanic	Other White
	%	%	%	%
10% or more below ideal	8.0	2.7	13.0	8.3
Within 10% of ideal	47.4	31.2	49.0	50.2
10–19.9% above ideal	79.8	57.8	76.7	83.8
20% or more above ideal	92.4	86.9	91.6	94.5
Quartile of BMI Distribution for Women of Own Ethnic Group				
1st quartile	11.0	10.1	17.5	10.7
2nd quartile	42.0	45.2	51.1	41.1
3rd quartile	74.0	68.3	74.1	74.8
4th quartile	91.9	89.9	90.3	92.2

TABLE 5—Per Cent of Women Age 18 and Over, Standardized for Age and Poverty Status, Who Are Trying to Lose Weight, by Self-Perceived Weight, According to Ethnicity: United States, 1985

Self-Perceived Weight	All Women Age 18+	Ethnic Group		
		Black	Hispanic	Other White
	%	%	%	%
All levels of overweight	67.1	67.7	66.1	67.8
A little overweight	61.2	60.4	56.0	62.5
Somewhat overweight	70.6	67.3	74.1	69.2
Very overweight	71.5	73.3	68.5	72.7

lower three categories of relative weight but do not differ among the most obese women. The proportions shown in this figure refer to all levels of self-perceived overweight, but the ethnic differentials are the same when the analysis is restricted to women who perceive themselves as *very* overweight (data not shown).

Table 4 also shows the proportions of women who consider themselves overweight within quartiles of the BMI distribution for women of their own ethnic group. The figures for Black and other White women are much more similar here than within categories of relative weight, but the differences between Hispanic and other White women are greater than when compared within relative weight groups.

Within categories of self-perceived overweight, the proportion of women trying to lose weight does not vary significantly by ethnicity. As shown in Table 5, slightly more than two-thirds of all women who consider themselves overweight are trying to lose weight. Of those who consider themselves to be very overweight, almost three-fourths are trying to lose weight.

Discussion

The NHIS data confirm the presence of ethnic differentials in female overweight that are independent of the effects of age and poverty status. After adjusting for these two factors, the proportion of women whose weight is 20 per cent or more above ideal body weight is about one-third for Black women, one-fourth for Hispanic women, and one-fifth for other White women.

At any given level of relative (actual compared to ideal) weight, a greater proportion of White than of Black women consider themselves to be overweight; however, within categories of actual weight compared to weight for all women of the same ethnic group, the percentage of women who feel they are overweight is fairly similar for Black and other White (not Hispanic) women.

This finding suggests that women's perceptions of whether or not they are overweight are more strongly influenced by their weight relative to their peers than by their weight relative to an arbitrary, health-based standard. In other words, once we correctly identify the norms against which women evaluate their weight, Black women are no less likely than other White (not Hispanic) women to consider themselves overweight.

One possible explanation for the fact that Hispanic women are more likely than other White women to consider themselves overweight, even after grouping within peer-group BMI quartile, is that Hispanic women may *not* distinguish themselves from other White women in forming body weight norms. Rather, they may compare themselves to *all*

White women and, being heavier on average than other White women, be the more likely to consider themselves overweight. If this were the case, one might expect Hispanic women born in the United States to be more likely than foreign-born Hispanic women to include all White women in their peer group, since the native-born women are presumably more acculturated. When the analysis shown in the lower panel of Table 4 was repeated, splitting the Hispanic women into native-born and foreign-born groups, the US-born women were in fact the more likely to consider themselves overweight (data not shown).

Two questions must be raised with respect to these findings. First, how valid are data based on self-reported height and weight? A study comparing self-reported and measured heights and weights from NHANES II found significant underreporting of weight among persons whose measured weight was above the median level.¹⁹ The same study found that women whose measured height was 62 inches or less exaggerated their height to a greater extent than taller women.

Since neither height nor weight is independent of ethnicity, these findings suggest that the ethnic differentials described in this paper may be overly conservative. Hispanic women, being shorter on average than Black or other White women, may have been the most likely to exaggerate their height, resulting in understated BMI values. Black women, being heavier on average than White women, may have understated their weight, also resulting in artificially low BMI values. Thus, ethnic differentials in BMI may be underestimated in this paper.

Second, is it appropriate to use a weight-height index such as the BMI to compare ethnic groups of women? Lee, Kolonel and Hinds²⁰⁻²² have argued that the Quetelet Index (wt/ht^2) is *not* independent of height and that it may produce misleading results when used to rank population subgroups in terms of mean BMI. They recommend using an index based on wt/ht^p where p is derived from observed data for the subpopulations being compared. In other analyses of these data, use of such an index had no effect on the ranking of the three ethnic groups according to BMI (data not shown).

The findings reported here suggest that Black women are as likely as White women to attempt weight loss when they perceive themselves to be overweight. The fact that proportionately fewer Black women consider themselves overweight (when comparing women within categories of relative weight) may be because they evaluate their weight *not* in relation to a health-based ideal, but rather in comparison only to other Black women, who are heavier on average than White women. If this is the case, then the relatively high prevalence of overweight among Black women could be self-perpetuating even if the social and cultural factors that originally led to the racial differential in overweight²³⁻²⁵ were to be erased. This suggests that programs aimed at reducing overweight and associated morbidity and mortality among minority women need to focus on perceptions of desirable weight as part of an integrated approach to the presentation of weight loss techniques.

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Johnson Foundation Launches Minority Medical Education Program

In an effort to increase the number of underrepresented minority applicants accepted to medical schools, the Robert Wood Johnson Foundation has awarded six grants to provide summer education programs for talented minority undergraduates at colleges and universities. Under its Minority Medical Education Program, the Princeton-based Johnson Foundation has committed up to \$6 million over a five-year period to support six-week summer programs at six institutions. Each participating institution is expected to provide the following components:

- Mathematics, science and problem-solving skills;
- Structured laboratory experiences;
- Counseling about the application and selection process for medical school;
- Medical College Admissions Test preparation review and participant follow-up.

Renewable grants were awarded to the following institutions:

- \$599,581 for 39 months to Case Western Reserve University School of Medicine, Cleveland;
- \$599,460 for 39 months to Illinois Institute of Technology, Chicago;
- \$602,700 for 39 months to the University of Virginia School of Medicine, Charlottesville;
- \$599,958 for 37 months to the University of Washington School of Medicine, Seattle;
- \$593,478 for 39 months to the United Negro College Fund for its premedical summer institute at Fisk University, Nashville; and
- \$596,368 for 37 months to the Baylor College of Medicine, Houston.

Recruitment for the first summer session in 1989 will begin in the fall of 1988. The program is directed by James R. Gavin III, MD, PhD, professor of medicine at the University of Oklahoma College of Medicine in Oklahoma City.