Correlates of Obesity and Body Image in Colombian Women

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Abstract

Objective: To examine the sociodemographic correlates of overweight and obesity as well as body shape perception in women from Bogotá, Colombia.

Methods: The sample ($n = 671$) represented low-income and middle-income women, aged 21–55 years, living in Bogotá, who had children in the public school system. We measured height and weight to calculate body mass index (BMI, kg/m^2) and defined two dichotomous outcomes: overweight/obesity ($\text{BMI} \geq 25$) and obesity ($\text{BMI} \geq 30$). Women reported sociodemographic information and used the Stunkard Figure Rating Scale to identify the silhouette that most closely resembled their body shape (current), what they would like to look like (ideal), and what they considered healthiest (healthiest). We estimated body dissatisfaction by subtracting the ideal from the current scores.

Results: The prevalences of overweight/obesity and obesity, based on measured height and weight, were 41.9% and 11.6%, respectively. Age, being married, and being born in Bogotá were positively associated with overweight/obesity but not with obesity alone, whereas the number of household assets and parity were both positively related to obesity. Women with higher education or who lived in wealthier neighborhoods identified ideal shapes that were thinner than those identified by their less educated or poorer counterparts ($p = 0.03$ and $p = 0.004$, respectively). Higher education was also associated with the selection of thinner body shapes as healthiest ($p = 0.02$). BMI and education were both positively related to body dissatisfaction ($p < 0.0001$ and $p = 0.04$, respectively).

Conclusions: Indicators of higher socioeconomic status (SES) (e.g., having more household assets) are associated with obesity. Perception of slimmer body shapes as ideal and healthiest and higher body dissatisfaction are associated with higher education.

Introduction

OBESITY IS A GROWING HEALTH PROBLEM for women in many Latin American countries.¹ Data from Mexico,² Brazil,³ Chile,⁴ and Colombia⁵ suggest that 30%–37% of adult women are overweight (body mass index [BMI] 25–29.9) and 15%–32% are obese ($\text{BMI} \geq 30$). Understanding the risk factors related to becoming obese is crucial to appropriately target and implement prevention and treatment efforts.

There is a consistent inverse relationship between the prevalence of obesity and socioeconomic status (SES) among women in the developed world,⁶ but the relation is more

complex in developing countries undergoing the nutrition transition. A study in Brazil, for example, found that between 1975 and 1989, obesity rates increased by 63% in women and that the increases in prevalence were larger among the poor.⁷ Reviews by Monteiro et al.⁸ and McLaren⁹ concluded that the burden of obesity tends to shift toward groups with lower SES as a country's economy improves, yet it is not always apparent where a particular developing country stands in the transition. In middle-income Latin American countries, the associations between SES indicators and obesity among women are heterogeneous and highly dependent on the specific population under study. For example, two studies of

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rural Mexican women found a positive association between education and BMI,^{10,11} whereas a study of urban Mexican women found a negative association¹¹ and a study of women from São Paulo, Brazil, found no association between education and BMI.¹² The majority of the studies that have examined SES as a risk factor for obesity in Latin America have been conducted in Mexico and Brazil, but the association remains largely unknown in other countries.

Very few studies have examined the correlates of body shape perception and body dissatisfaction in Latin American women. This is a very important question considering that body perception and dissatisfaction are associated with obesity-related behaviors, such as attempted weight loss^{13,14} and binge eating.¹³ One previous study examined body dissatisfaction in adult Brazilian women in relation to binge eating. In this study, women were asked about their self-perception of body weight in relation to what they perceived as ideal.¹⁵ A perception that body weight was above the ideal was associated with binge-eating episodes, independent of BMI.¹⁵ One study of Latin American adolescents from six different cities found a positive association between BMI or SES and body dissatisfaction measured with the Stunkard silhouettes,¹⁶ yet, no studies have examined the relation between socioeconomic factors and perceptions of ideal and healthy body shapes or body dissatisfaction among adult women in Latin America. Kaufer-Horwitz et al.¹⁷ and Osuna-Ramírez et al.¹⁸ found a strong relation between BMI and current body shape perception obtained with the use of Stunkard silhouettes in Mexico; however, they did not study perceptions of ideal and healthy body shapes or body dissatisfaction.

We conducted a cross-sectional study to examine the associations of socioeconomic factors with overweight and obesity based on BMI among adult women in Bogotá, Colombia. We also examined the associations between socioeconomic factors and the women's identification of the Stunkard silhouettes that most closely resembled their current body shape, ideal body shape, and healthiest perceived body shape. Because the population under study is in a relatively early phase of economic transition, we hypothesized that obesity would be positively associated with indicators of higher SES. Furthermore, we hypothesized that body dissatisfaction would be positively associated with SES.

Materials and Methods

Study population and field methods

This study was conducted as part of a nutrition and health study of schoolchildren in Bogotá, Colombia. Details of the study design have been reported previously.¹⁹ In brief, we recruited 3202 children and their mothers in February 2006 from public schools in Bogotá, which is the highly urbanized capital city of Colombia, with a population of over 7 million. The sample was representative of low-income and middle-income urban families who lived in Bogotá and had children in the primary school system at the time of the study. We used a cluster sampling strategy in which we defined clusters to be the classes (primary school grades) of all 361 public schools in the city by the end of 2005. We identified 8500 classes and randomly selected 166 of them to reach the target sample size.

Data on maternal age, parity, marital status, place of birth, education, and household socioeconomic characteristics were

collected via self-administered surveys that were sent to the children's parents at the beginning of the study. The response rate for the survey was 81% (2466 households corresponding to 2637 children, after accounting for siblings). Through the same survey, the children's mothers were asked to answer three questions related to body image by referring to a series of figural stimuli (the Stunkard Figure Rating Scale)²⁰ that depicted different body shapes, with 1 corresponding to the slimmest figure and 9 corresponding to the most obese figure. The women were asked to choose the silhouette that most closely resembled how they looked (defined from here on as current), the silhouette that represented how they would like to look (defined from here on as ideal), and the silhouette that represented what the women considered to be the healthiest figure (defined from here on as healthiest).

Between May and June 2006, trained study staff measured height, weight, and waist circumference in a group of 671 of the mothers, who were attending regularly scheduled parents' meetings at the school. Women with measured anthropometric data did not differ from women who were not measured in terms of age, parity, marital status, place of birth, education level, or number of home assets. However, they were more likely to live in lower SES neighborhoods than women without measured anthropometry. Following standard protocols,²¹ height was measured to the nearest 1 mm by use of wall-mounted portable Seca 202 stadiometers, weight was measured to the nearest 0.1 kg on Tanita HS301 solar-powered electronic scales, and waist circumference was measured to the nearest 1 mm using a nonextensible measuring tape at the level of the umbilicus.

The study protocol was approved by the Ethics Committee of the National University of Colombia Medical School.

Data analyses

We calculated BMI as kg/m². In order to evaluate sociodemographic correlates of overweight and obesity, we defined two dichotomous outcomes, overweight/obesity (BMI ≥ 25 kg/m²) and obesity (BMI ≥ 30 kg/m²). Abdominal obesity was defined as >88 cm according to a conventional cutoff point proposed by the U.S. National Institutes of Health (NIH).²² The sociodemographic variables considered as predictors were the woman's age, marital status (whether cohabiting with a partner or single), parity, education (≤ 5 , 6–10, or ≥ 11 years of schooling), whether the woman was born in Bogotá or not, and indicators of the household's SES, including the number of home assets and the woman's neighborhood socioeconomic stratum according to the local government's classification of public service fees (1–4 in the sample, with 1 being lowest). In Bogotá, public service fees are higher in wealthier neighborhoods than in poorer ones. Subjects were asked to identify household objects that they owned from a list that included several items. The six items that represented the largest variability in home asset ownership included refrigerator, bicycle, blender, television, stereo, and washing machine; thus, the sum of these six items was used to create an index of home asset ownership for analysis.

We tested for differences in the prevalence of each BMI category by levels of dichotomous and ordinal sociodemographic variables using the chi-square and Cochran-Armitage tests, respectively. We then obtained adjusted prevalence ratios and 95% confidence intervals (95% CI) for

each outcome by fitting binomial regression models. Predictors in the binomial regression models included variables that were significant correlates in univariate analyses at $p < 0.10$. In the final models, we retained variables that were statistically significant at the $p < 0.05$ level. In the final model for obesity, we also retained age as a potential confounder of the association between parity and obesity. Finally, we conducted tests for linear trend for ordinal predictors by introducing into the models a variable that represented the ordinal categories as a continuous covariate.

For the analysis of body shape correlates, we used the silhouette numbers (1–9) as continuous outcomes for current, ideal, and healthiest body shapes. For each subject, we subtracted the number of the silhouette identified as ideal from the number of the silhouette identified as current to obtain a measure of body dissatisfaction, according to Bulik et al.²³ Larger differences represent higher levels of body dissatisfaction. We compared the distribution of each of these outcomes by categories of sociodemographic predictors and BMI by estimating means ($\pm$ SD). Next, we fit linear regression models to estimate multivariate adjusted mean differences in the body shape outcomes by categories of the covariates. We used robust estimates of variance to build 95% CIs around the means.²⁴ These estimates do not rely on the multivariate normality assumption. The effect of clustering from the sampling strategy was negligible and dropped from the models for parsimony.

We conducted all analyses using the Statistical Analyses System software version 9.1 (SAS Institute, Inc., Cary, NC).

Results

Mean ($\pm$ SD) age was 35.4 ± 6.7 years (range 21–55 years). Mean height, weight, BMI, and waist circumference were 1.57 ± 0.06 m, 61.3 ± 10.8 kg, 24.9 ± 4.2 kg/m², and 79.7 ± 9.9 cm, respectively. The prevalences of overweight/obesity (BMI ≥ 25 kg/m²) and obesity (BMI ≥ 30 kg/m²) were 41.9% and 11.6%, respectively; 16.5% of women had abdominal obesity (waist circumference > 88 cm).

Sociodemographic correlates of overweight and obesity

The adjusted prevalence of overweight/obesity was 50% higher in women aged ≥ 40 than in women 20–29 years old (p for trend = 0.003) (Table 1). Being born in Bogotá and cohabiting with a partner were each positively associated with increased prevalence of overweight/obesity after adjustment for age ($p = 0.04$ and $p = 0.01$, respectively). Higher parity was associated with increased prevalence of obesity after adjusting for age and number of home assets (p for trend = 0.03). After adjustment for parity and age, the prevalence of obesity was 68% higher in women who had five or six home assets compared with those who had two or fewer (p for trend = 0.04). Education was not associated with overweight/obesity or obesity. None of the sociodemographic predictors considered was significantly associated with abdominal obesity in multivariate analysis.

Correlates of body shape perception

BMI was strongly positively associated with the silhouette identified as current ($p < 0.0001$), but neither education nor

neighborhood socioeconomic stratum was associated with this outcome (Table 2). Education and neighborhood socioeconomic stratum were each negatively associated with the silhouette identified as ideal; women who had completed secondary school or university had a mean silhouette choice that was 0.19 units slimmer than women with only primary education or less (p for trend = 0.03). Meanwhile, women in the highest neighborhood socioeconomic stratum had a mean silhouette choice that was 0.33 units slimmer than women in the lowest neighborhood socioeconomic stratum (p for trend = 0.004). Education was negatively associated with the silhouette identified as healthiest, women with the highest level of education chose, on average, silhouettes that were 0.21 units slimmer than did women with only primary education or less (p for trend = 0.02). Neighborhood socioeconomic stratum was not significantly associated with the silhouette identified as healthiest. Controlling for BMI did not change these associations.

Women with higher education had a significantly higher level of body dissatisfaction than women with a low level of education after controlling for BMI and neighborhood socioeconomic stratum ($p = 0.04$). Obese women reported a higher level of body dissatisfaction than women who were not overweight or obese; the difference between obese women's current and ideal silhouettes was 2.06 units larger than that of normal-weight women ($p < 0.0001$), independent of education and neighborhood socioeconomic stratum.

Discussion

We examined overweight and obesity based on BMI as well as body shape perception in relation to sociodemographic variables in a group of low-income and middle-income women from Bogotá, Colombia. Overweight/obesity and obesity alone were positively associated with indicators of higher SES. In addition, parity was positively associated with the prevalence of obesity, independent of age.

The rates of overweight/obesity in our study, 41.9%, and abdominal obesity, 16.5%, were lower than those found in a nationally representative sample of women in the 2005 Colombian National Nutrition Survey (49.6%, and 24.1% respectively),⁵ possibly because of demographic differences in the samples. The rate in Mexico, a more economically developed country, is much higher, at 72%.²

The associations of SES indicators with overweight and obesity in our study are consistent with those from other studies among Latin American women of low-income groups within their countries.^{10,25} The positive association between SES indicators and overweight/obesity based on BMI found in our study may be due to a shift away from a traditional diet, as women with greater purchasing power may have increased access to processed foods that are high in saturated fat and refined carbohydrates.²⁶ The presence of nonnegligible rates of obesity in all SES categories, with a greater burden in the highest SES groups, is typical of countries in middle stages of economic development.²⁷

We found that being born in Bogotá was positively associated with overweight/obesity. Being born in Bogotá could be a proxy for higher SES because of the wider availability of high-quality education and jobs in Bogotá compared with the less economically developed rural areas. Being born in Bogotá may also reflect earlier and longer exposure to westernized

TABLE 1. OVERWEIGHT AND OBESITY AMONG WOMEN FROM BOGOTÁ, COLOMBIA, ACCORDING TO SOCIODEMOGRAPHIC CHARACTERISTICS

	n ^a	Woman is overweight or obese ^b n = 281		Woman is obese ^c n = 78	
		Prevalence (%)	Adjusted PR (95% CI) ^d	Prevalence (%)	Adjusted PR (95% CI) ^e
Overall	671	41.9		11.6	
Age, years					
20–29	164	32.9	1.00	10.4	1.00
30–34	174	42.0	1.29 (0.98, 1.70)	8.6	0.73 (0.37, 1.41)
35–39	162	43.2	1.30 (0.98, 1.71)	13.6	1.07 (0.58, 1.96)
≥40	170	49.4	1.50 (1.16, 1.95)	14.1	1.05 (0.57, 1.94)
<i>p</i> trend ^f			0.003		0.54
Woman was born in Bogotá					
No	391	39.1	1.00	10.7	1.00
Yes	277	46.2	1.20 (1.01, 1.43)	13.0	1.17 (0.77, 1.77)
Woman is single parent					
No	506	45.1	1.00	12.7	1.00
Yes	157	33.8	0.74 (0.58, 0.93)	8.9	0.89 (0.51, 1.56)
Parity					
1	86	33.7	1.00	5.8	1.00
2	261	42.9	1.16 (0.84, 1.60)	10.3	1.77 (0.70, 4.48)
3	204	41.7	1.03 (0.73, 1.46)	14.2	2.39 (0.94, 6.07)
≥4	111	48.7	1.18 (0.82, 1.69)	15.3	2.62 (0.98, 7.03)
<i>p</i> trend ^f			0.73		0.03
Education					
Primary or less (≤5 years)	182	40.7	1.00	12.1	1.00
Incomplete secondary (6–10 years)	170	50.0	1.15 (0.91, 1.45)	15.3	1.14 (0.67, 1.94)
Comp. secondary or university (≥11 years)	315	38.7	0.92 (0.73, 1.16)	9.5	0.74 (0.43, 1.26)
<i>p</i> trend ^f			0.29		0.21
Neighborhood socioeconomic stratum ^g					
1 (lowest)	57	36.8	1.00	7.0	1.00
2	282	43.3	1.13 (0.79, 1.61)	9.9	1.29 (0.46, 3.56)
3 or 4	331	41.7	1.09 (0.77, 1.55)	13.9	1.82 (0.67, 4.96)
<i>p</i> trend ^f			0.91		0.08
Number of home assets ^h					
≤2 items	130	40.0	1.00	9.2	1.00
3 or 4 items	251	39.8	0.95 (0.74, 1.23)	9.6	1.10 (0.57, 2.12)
5 or 6 items	286	44.8	1.00 (0.78, 1.28)	14.7	1.68 (0.91, 3.09)
<i>p</i> trend ^f			0.94		0.04

^aTotals may be <671 because of missing values.

^bBMI ≥25 kg/m².

^cBMI ≥30 kg/m².

^dPrevalence ratios (PR) and 95% confidence intervals (CI) are from multivariate binomial regression models adjusted for the woman's age, marital status, and whether she was born in Bogotá. Estimates for all other variables were obtained by including them into the model one at a time.

^ePrevalence ratios (PR) and 95% confidence intervals (CI) are from multivariate binomial regression models adjusted for the woman's age, parity, and number of home assets. Estimates for all other variables were obtained by including them into the model one at a time.

^fAdjusted *p* values are from tests for trend when a variable representing the ordinal categories of the predictor was introduced into the multivariate model as continuous.

^gAccording to the city's classification of neighborhoods' public services fees.

^hFrom a list that included refrigerator, bicycle, blender, television, stereo, and washing machine.

lifestyle and dietary influences. Parity was positively associated with obesity in our population, independent of age. Several other studies in the region^{12,25,28,29} have reported similar results. Although higher parity is sometimes considered an indicator of lower SES, pregnancy-related weight retention independent of various sociobehavioral factors is well documented.³⁰

We combined overweight and obesity into one outcome to maximize statistical power, and we used the more specific outcome of obesity alone to examine associations with this more extreme BMI category. Although age and being born in

Bogotá were positively associated with overweight/obesity, their associations with obesity alone were not statistically significant, possibly a result of low statistical power.

Perceptions of current and ideal body shapes, as well as body dissatisfaction, have been quantified using diverse measures in various studies, including questionnaires and figural stimuli. Using the Stunkard Figure Rating Scale to measure body perception resulted in good test-retest reliability in validation studies.³¹ Also, the measure of body dissatisfaction obtained from subtracting the Stunkard silhouette identified as ideal from the one identified as current

TABLE 2. BODY SHAPE PERCEPTION AMONG WOMEN FROM BOGOTÁ, COLOMBIA, ACCORDING TO EDUCATION, NEIGHBORHOOD SES, AND BMI

Characteristic	n ^b	Silhouette identified as current ^a		Silhouette identified as ideal ^a		Silhouette identified as healthiest ^a		Body dissatisfaction (Current-ideal silhouette ^a)	
		Mean (SD)	Adjusted difference ^c (95% CI)	Mean (SD)	Adjusted difference ^c (95% CI)	Mean (SD)	Adjusted difference ^c (95% CI)	Mean (SD)	Adjusted difference ^c (95% CI)
Overall	671	4.36 (1.33)		3.65 (0.87)		3.63 (0.93)		0.72 (1.42)	
Education									
Primary or less (≤5 years)	182	4.28 (1.50)	ref	3.76 (1.08)	ref	3.75 (1.15)	ref	0.53 (1.70)	ref
Incomplete secondary (6–10 years)	170	4.54 (1.20)	0.13 (−0.12, 0.38)	3.75 (0.80)	0.00 (−0.21, 0.21)	3.72 (0.91)	−0.01 (−0.24, 0.22)	0.78 (1.29)	0.13 (−0.16, 0.42)
Complete secondary or university (≥11 years)	315	4.30 (1.29)	0.07 (−0.15, 0.29)	3.54 (0.76)	−0.19 (−0.38, 0.00)	3.53 (0.80)	−0.21 (−0.41, −0.01)	0.77 (1.30)	0.26 (0.00, 0.51)
<i>p</i> trend ^d			0.62		0.03		0.02		0.04
Household socioeconomic stratum ^e									
1 (lowest)	57	4.33 (1.33)	ref	3.89 (0.85)	ref	3.87 (1.01)	ref	0.47 (1.46)	ref
2	282	4.39 (1.35)	−0.03 (−0.39, 0.32)	3.72 (0.85)	−0.19 (−0.44, 0.06)	3.67 (0.97)	−0.21 (−0.51, 0.10)	0.65 (1.45)	0.10 (−0.29, 0.49)
3 or 4	331	4.33 (1.32)	−0.14 (−0.49, 0.20)	3.55 (0.88)	−0.33 (−0.59, −0.08)	3.57 (0.88)	−0.27 (−0.57, 0.03)	0.80 (1.37)	0.16 (−0.22, 0.55)
<i>p</i> trend ^d			0.22		0.004		0.09		0.35
BMI (kg/m ²)									
Not overweight or obese (<25)	390	3.81 (1.12)	ref	3.64 (0.87)	ref	3.66 (0.89)	ref	0.17 (1.20)	ref
Overweight (25.0–29.9)	203	4.80 (1.06)	0.98 (0.80, 1.17)	3.63 (0.85)	−0.02 (−0.17, 0.13)	3.61 (0.99)	−0.06 (−0.23, 0.11)	1.17 (1.16)	1.02 (0.81, 1.22)
Obese (≥30)	78	5.96 (1.21)	2.16 (1.87, 2.46)	3.75 (0.96)	0.11 (−0.13, 0.35)	3.54 (0.98)	−0.13 (−0.37, 0.11)	2.22 (1.52)	2.06 (1.69, 2.43)
<i>p</i> trend ^d			<0.0001		0.53		0.24		<0.0001

^aBased on Stunkard silhouettes of body types ranging from 1, slimmest to 9, most obese.^bTotals may be less than 671 because of missing values.^cAdjusted estimates and 95% confidence intervals (CI) are from multivariate linear regression models adjusted for education level, neighborhood socioeconomic stratum, and BMI, with robust estimates of variance. Only covariates that were significantly associated with any of the body shape perception outcomes in the multivariate analyses at $p < 0.05$ are included.^dAdjusted p values are from tests for trend when a variable representing the ordinal categories of the predictor was introduced into the multivariate model as continuous.^eAccording to the city's classification of neighborhoods' public services fees.

has adequate correlations with other measures of body dissatisfaction.^{31,32} Although no validation studies have been performed among Latin American women, a study of white and black South African women³³ suggests that body dissatisfaction measured through the Stunkard Figure Rating Scale may be valid for culturally diverse populations.

In our analysis, we found that BMI was strongly positively related to the woman's current body shape perceptions. Consistent with our results, studies in Mexican women also found a strong relation between BMI and current body shape perception obtained with the Stunkard Figure Rating Scale.^{17,18} Previous studies of U.S. populations found that increasing BMI was associated with the selection of heavier ideal^{34,35} and healthiest body types,³⁴ although we found no association between BMI and these outcomes in our study. The lack of an association between perception of ideal and healthy body types and BMI suggests that these perceptions may not influence eating and physical activity patterns in a manner that causes weight change in our population or that a woman's own body shape may not strongly influence her perception of ideal and healthy body shapes. Alternatively, the influence of these perceptions on body weight may not be captured by our cross-sectional study.

We found that higher education and higher neighborhood socioeconomic stratum were each significantly associated with the selection of a slimmer ideal body shape independent of current BMI. One U.S. study found that higher SES was strongly associated with slimmer silhouettes reported as ideal in African American but not in white women.³⁵ Our study suggests that higher SES may also play a role in the perception of a slimmer ideal body shape in women of Hispanic origin.

Studies on U.S. women^{23,35} and adolescents from Latin America¹⁶ have shown that BMI is positively associated with body dissatisfaction, as measured with the Stunkard Figure Rating Scale. Our findings also support this notion. The study of Latin American adolescents also found that higher SES adolescents had more body dissatisfaction than poorer ones,³⁶ which is in part consistent with our findings. We found that education was strongly associated with the perception of thinner body shapes as ideal but was not associated with the perception of current body shape, resulting in a higher estimate of body dissatisfaction in more educated women. Although education was significantly associated with body dissatisfaction, the mean level of body dissatisfaction was relatively low (0.72 units) in comparison to a U.S. study, where 80.3% of whites and 69.5% of blacks had a body dissatisfaction level that was greater or equal to one unit³⁵ according to the same Stunkard Figure Rating Scale. This difference may be due to the higher mean BMI of the U.S. study population, which was 27.1 kg/m² compared with 24.9 kg/m² in our cohort.

Higher body dissatisfaction, measured using the Stunkard silhouettes³⁷ or scales based on questionnaires or figural stimuli developed by the investigators,^{13,38} has been related to attempted weight loss in women from the United States and other affluent countries. A cross-cultural study of adults from Europe, Africa, and Asia³⁸ found higher levels of body dissatisfaction in western countries compared with nonwestern countries and also that body dissatisfaction was the most important predictor of dieting behavior in most countries.

Our data suggest that in this population, women of higher SES are more likely to have a higher BMI and are also more likely to have a greater level of body dissatisfaction, regardless of their current BMI, than poorer women. This higher level of body dissatisfaction may reflect the earlier adoption of western ideals of body shape in these women compared with those of the lower SES groups. Women with higher body dissatisfaction may be more likely to participate in weight loss behaviors that cause them to maintain or lose body weight, possibly leading to a shift in the burden of obesity to lower SES groups over time. This shift in the burden of obesity from high to low SES groups is a pattern observed in other societies that have undergone economic development.⁸

Our study has some limitations. Because of its cross-sectional design, we cannot draw conclusions about causal relations between the variables examined. Although the validity of the Stunkard Figure Rating Scale is not known in our setting, the scale has been validated in other populations^{31,33} further studies are warranted to determine its cross-cultural appropriateness. Another limitation is that we cannot generalize the results to all women in Bogotá, including those of the highest SES, because the women in our study were of low-income and middle-income families. We are also unable to generalize our results to women who are not of childbearing age, women who do not have children, or men. Finally, we were unable to examine the association between obesity and other SES indicators, such as childhood SES status and work in or out of the home.

In conclusion, we found that higher SES was associated with higher prevalence of overweight/obesity and obesity alone. We also found that higher education was related to the selection of thinner body shapes as ideal and healthy and to increased body dissatisfaction. These findings might suggest one possible mechanism for the shift of obesity from higher to lower socioeconomic classes as the country continues to develop economically. Longitudinal studies are necessary, however, to further clarify the associations between socio-demographic factors and changes in nutritional status and body shape perceptions over time in this population.

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Disclosure Statement

None of the authors has any competing financial or other conflict of interest to declare in relation to this work.

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