

Smoking as Subculture? Influence on Hispanic and Non-Hispanic White Women's Attitudes Toward Smoking and Obesity

Lisa Johnsen
Finch University of Health Sciences/
The Chicago Medical School and University of Chicago

Bonnie Spring, Regina Pingitore,
and Beth Kaplan Sommerfeld
University of Illinois at Chicago
and Edward Hines Junior Veterans Administration Hospital

David MacKirnan
University of Illinois at Chicago

Cultural stereotypes might help explain why smoking is less prevalent among Hispanic than non-Hispanic White women, whereas obesity is more prevalent. Hispanic ($n = 130$) and non-Hispanic White ($n = 114$) women rated their thoughts and feelings regarding a female smoker and an overweight woman. Ethnicity did not influence evaluations, but attitudes toward smokers were more positive among more acculturated Hispanic women, $F(1, 66) = 9.9, p < .01$. Less acculturated women evaluated an overweight woman more positively than a smoker, $F(1, 28) = 5.65, p < .05$; more acculturated women did the opposite, $F(1, 36) = 5.92, p < .05$. Smokers evaluated smokers more positively than overweight women, $F(1, 86) = 40.8, p < .01$; nonsmokers did the opposite, $F(1, 138) = 7.7, p < .01$. Personal body weight did not influence evaluations. Acculturation and smoking status appear to have a greater influence than ethnicity or weight status on women's attitudes toward smoking and weight.

Key words: Hispanics, smoking, obesity, acculturation, attitudes, stereotypes

Cigarette smoking and obesity are both widespread and significant health liabilities that increase the risks of hypertension, ischemic heart disease, noninsulin-dependent diabetes, and various types of cancer. Objectively, the relative risks associated with smoking outstrip those associated with obesity (U.S. Department of Health and Human Services, 1990). At most weight levels, smokers suffer nearly twice the mortality of nonsmokers from cancer, heart disease, stroke, and diabetes (VanItallie, 1992). The mortality associated with being overweight approaches the mortality associated with smoking only when weight exceeds 110% of

desirable, healthy, body weight (Hahn, Teutsch, Rothenberg, & Marks, 1990; VanItallie, 1992).

Although the greater health risks associated with smoking hold fairly constant across ethnic groups, there is ethnic variation in the relative prevalences of smoking versus obesity. For example, smoking is less prevalent among Hispanic (16%) than non-Hispanic White (23%) women according to the Centers for Disease Control (CDC; 1995). However, obesity prevalence rates are higher among Hispanic than non-Hispanic White women, regardless of the way obesity is defined (Foreyt, 1995; Kumanyika, 1995). For example, 41.5% of Mexican Americans are overweight (body mass index [BMI] ≥ 27.3) and 16.7% are severely overweight (BMI ≥ 32.3), compared to 24.6% and 9.6% of non-Hispanic White women, respectively (Willamson, 1995). Findings from several studies suggest that ethnicity may even explain a greater proportion of the variance in obesity (e.g., Pawson, Martorell, & Mendoza, 1991) and smoking (Remington et al., 1985) than does socioeconomic status.

We postulated that two cultural attitudes may protect Hispanic women against beginning to smoke. First, Hispanic females may simply believe that smoking by a woman is unappealing. For example, in one study of 263 Hispanic and 150 non-Hispanic White male and female smokers in San Francisco, Marin, Marin, Perez-Stable, Sabogal, and Otero-Sabogal (1990) found that Hispanics associated smoking with less pleasure and enjoyment than did non-Hispanic Whites, and had more positive attitudes about the consequences of quitting. Moreover, Hispanics expressed significantly less certainty than non-Hispanic Whites that a woman who

Lisa Johnsen, Department of Psychology, Finch University of Health Sciences/The Chicago Medical School and Department of Psychiatry, University of Chicago; Bonnie Spring, Regina Pingitore, and Beth Kaplan Sommerfeld, Department of Psychology, University of Illinois at Chicago and the Edward Hines Junior Veterans Administration Hospital, Hines, Illinois; David MacKirnan, Department of Psychology, University of Illinois at Chicago.

Lisa Johnsen is now at Department of Psychiatry and Behavioral Sciences, Northwestern University.

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Correspondence concerning this article should be addressed to Bonnie Spring, Department of Psychology, University of Illinois at Chicago (M/C 285), 1007 West Harrison Avenue, Chicago, Illinois 60607. E-mail: bspring@uic.edu

smokes is friendly, sociable, attractive, and feminine (Marin, Perez-Stable, Oterero-Sabogal, Sabogal, & Marin, 1989). However, those analyses were conducted on combined samples of male and female smokers and did not specifically examine whether Hispanic women hold such beliefs.

A second cultural attitude that may protect Hispanics against initiating smoking is that Hispanic women may view being overweight as more compatible with feminine attractiveness than do non-Hispanic White women. Hispanic women may, therefore, be less likely to smoke as a form of weight control. There is evidence that some non-Hispanic White women smoke in order to achieve nicotine's beneficial effect on body weight. More overweight than lean women report that they started smoking in an effort to control body weight, and many women say that the fear of gaining weight deters them from attempting to quit smoking (Klesges & Klesges, 1988).

Whereas Hispanics may react more negatively than non-Hispanic Whites to a woman who smokes, they may react more positively to a woman who is overweight. The Spanish phrases *que gordita!* (how plump!), *gordita buena* (pretty little plump one), and *una mujer entera* (a total woman), represent highly complimentary appraisals of a woman's perceived shapeliness, health, and overall attractiveness (Massara, 1989). Empirical findings by Massara (1989) indicate that Hispanics differ significantly from non-Hispanic Whites in being more accepting of weight gain, viewing obesity more positively, and expressing more negative attitudes toward thin individuals. Massara's Hispanic sample expressed the viewpoint that mild or moderate forms of obesity reflect tranquility, health, and freedom from life's problems.

In approaching the study question, we debated whether women's attitudes toward smoking and body weight should be considered to be homogeneous within the Hispanic community, which includes individuals of Mexican, Central and South American, and Puerto Rican descent. We took the approach of including in the study sample ethnic subgroups for whom no published literature suggested differences in either cigarette smoking or weight. In that examination, the Puerto Rican subgroup appeared to represent an outlier because of findings indicating that Puerto Rican women are more likely to smoke than women of other Hispanic origins (Marin, Perez-Stable, & Marin, 1989).

To the extent that a Hispanic woman immerses herself in mainstream American culture, influences of her ethnic culture of origin on standards for female attractiveness would be expected to diminish (Spring, Pingitore, Bruckner, & Penava, 1994). Attitudes concerning smoking and obesity may shift toward those that she perceives to be held by the American mainstream. The relationship between acculturation and attitudes toward smoking and obesity may represent a dynamic process. Potential influences leading Hispanic women to an increased emphasis on thinness include the American media (which portrays thinness as a universal norm) and direct contact with American women (who tend to have negative attitudes about obesity). Hispanic women who are attempting to assimilate may also begin to view cigarette use by women as "American" (more prevalent among non-Hispanic White than Hispanic women) and may shift their attitudes toward smoking—or even adopt the behavior—as part of the acculturation process. A combination of contact with non-Hispanic White women who smoke, an increase in the belief that smoking helps to control weight, or a socioeconomic transition from poverty into the work-

ing class may all influence Hispanic women to change their attitudes about smoking as they become more acculturated. Indeed, among Hispanic women, a higher level of acculturation is associated with a higher prevalence of smoking (Haynes, Harvey, Montes, Nickens, & Cohen, 1990; Marin, Perez-Stable, & Marin, 1989) and a lower prevalence of obesity (Hazuda, Haffner, Stern, & Eifler, 1988; Pawson et al., 1991). Hispanic smokers who are highly acculturated express relatively positive attitudes, norms, and expectancies about smoking (Marin, Marin, Otero-Sabogal, Sabogal, & Perez-Stable, 1989). Moreover, relatively acculturated Hispanic teenagers express heightened weight concerns and exhibit disordered eating patterns similar to those shown by better-educated, urban, non-Hispanic White teenagers (Snow & Harris, 1989). Based on those findings, we examined the possibility that level of acculturation, rather than ethnicity per se, might influence a woman's attitudes regarding smoking and obesity.

The primary purpose of this research was to test the hypotheses that (a) Hispanic women would report more negative attitudes toward a female smoker than would non-Hispanic White women; (b) Hispanic women would report more favorable attitudes toward an overweight woman than would non-Hispanic White women; (c) Hispanic women would report more favorable attitudes toward an overweight woman than toward one who smokes, whereas the converse would hold true of non-Hispanic White women; and (d) among Hispanic women, a higher degree of acculturation into the broader American culture would be associated with more positive attitudes toward a woman who smokes and more negative attitudes toward a woman who is overweight.

A final set of hypotheses was that a woman's personal smoking and weight statuses would influence her attitudes toward other women's smoking and weight. The rationale derived from cognitive dissonance theory, which suggests that people are motivated to minimize conflict that results from incongruities between their behavior and beliefs (Festinger, 1957; Wicklund & Brehm, 1976). For example, holding negative attitudes toward smokers should generate discomfiting dissonance for people who are cigarette smokers, just as holding negative beliefs about obese people should discomfit people who are overweight. The experience of dissonance should motivate a change in either attitude or behavior to bring about greater congruence between the two domains. Given the difficulty of changing habitual substance use and eating behaviors, bringing attitudes into alignment with behavior usually represents the path of lesser resistance. Consequently, we expected that women who smoked, relative to nonsmokers, would hold positive attitudes toward smokers, and that overweight women, relative to normal weight women, would hold positive attitudes toward women who are overweight.

Method

Sample Characteristics

The final sample was composed of 130 Hispanic (53.3%) and 114 non-Hispanic White (46.7%) female smokers and nonsmokers; of those approached, 6 women declined participation. Entry criteria required that study enrollees be female, between the ages of 18 and 65, English or Spanish speaking, and of non-Hispanic White or Hispanic descent. In order to be able to categorize study participants clearly as smokers or nonsmokers, we excluded ex-smokers (women who reported that they did not currently smoke cigarettes, but had smoked regularly in the past, or had

smoked one or more cigarettes within the preceding 6 months). We also planned to exclude women whose smoking status could not be clearly classified because of inconsistencies between their self-reported smoking status and carbon monoxide level (e.g., self-report of nonsmoking and carbon monoxide > 8 ppm); however, no such women were recruited.

Data from a total of 48 women were excluded from analysis because of failure to meet study entry criteria: 28 (10.3%) because they were classified as exsmokers and 20 (6.8%) because of Puerto Rican ethnicity. As anticipated, the Puerto Rican women we sampled had higher rates of smoking than women in the remaining Hispanic subgroups (60% vs. 22%), $\chi^2(1, N = 150) = 12.40, p < .01$. In fact, their prevalence of smoking failed to differ significantly from that of the non-Hispanic White women sampled (55.3%).¹

Participants

Participants were volunteers recruited from Chicago-area supermarkets, shopping malls, health fairs, primary care clinics, colleges, community centers, and Hispanic newspapers. Lisa Johnsen set up a table at each location for 1 or 2 days and displayed fliers that offered a free, noninvasive screening of carbon monoxide to women who were willing to complete a survey about health beliefs and practices. The experimenter explained that the test of expired carbon monoxide measures the amount of carbon monoxide in the lungs and would confirm their smoking status. Carbon monoxide was described as a hazardous fume, which in extremely high quantities could lead to carbon monoxide poisoning, and derives from smoking cigarettes, as well as being exposed to car exhaust systems, furnaces, fireplaces, or other things that burn. After providing informed consent, participants performed an ecolyzer assessment of exhaled carbon monoxide. Next, they anonymously completed the study questionnaire, written in either Spanish or English. The total duration of the study procedures was approximately 15 min. At the end of testing, each woman received a handout reporting her exhaled carbon monoxide and its interpretation.

Measures

Translation of instruments. Assessment instruments were translated according to recommended guidelines for developing culturally appropriate measures (Brislin, Lonner, & Thorndike, 1973; Marin & Marin, 1991). Questionnaires were developed in both English and Spanish with the assistance of two certified Spanish bilingual and bicultural translators (Marin & Marin, 1991). Items were translated through a double translation procedure in which the English version was translated by one individual into Spanish and then translated back into English by another individual, as recommended by Marin and Marin.

Smoking status. Smoking status was assessed through a two-step process. We first measured study candidates' exhalation carbon monoxide levels objectively by using an ecolyzer. Second, the women self-reported their smoking status by answering five questions about stages and processes of smoking behavior (adapted from Prochaska & DiClemente, 1983). Participants were classified as *nonsmokers* if they reported never having smoked regularly, not having smoked at all within the preceding 6 months, and if their expired carbon monoxide level was less than 8 ppm. Participants were classified as *current smokers* if they reported current regular smoking.

Weight and height status. Weight and height were assessed through self-report because of concern that weighing participants in public would deter them from participating. Previous research findings indicate that self-reported measures of weight and height are generally accurate, even when provided by obese people (Stunkard & Albaum, 1981). Body Mass Index (BMI) was calculated by dividing weight in kilograms by the square of height in meters (kg/meters squared) (Keys, Fidanza, Karvonen, Kimura & Taylor, 1972). In some analyses, BMI scores were dichotomized to

categorize women as average or underweight (BMI < 27.3) or as overweight (BMI \geq 27.3; Brownell, 1995). In others, women were grouped as underweight or normal weight (BMI < 27.3), overweight (BMI \geq 27.3), severely overweight (BMI \geq 32.3), or morbidly obese (BMI \geq 39; Williamson, 1995).

Level of acculturation. This was assessed through the five-item Short Acculturation Scale for Hispanics (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987), administered to both Hispanic and non-Hispanic White participants. Although acculturation is a multidimensional process, only one dimension (language use) was assessed in this study. Degree of acculturation (cultural identification with non-Hispanic people in the United States) is inferred from five questions about English language use and preference in childhood, at home, with friends, when reading and speaking, and when thinking. Response options on 5-point Likert-type scale range from 1 (*only Spanish*) to 5 (*only English*), with acculturation level operationalized as the mean score across the five questions. Scores less than 2.9 suggest low acculturation, and scores greater than 3.0 suggest high acculturation (Marin et al., 1987).

Attitudes Toward Smoking and Obesity

Stereotype questionnaire. Cognitive and noncognitive (i.e., affective) appraisals are both predictive of behavior (Breckler & Wiggins, 1989; Hamilton & Trolie, 1986). A limitation of much research characterizing ethnic influences on attitudes is that researchers have assessed what participants *think* about smokers, but have excluded how participants *feel* about them (Hamilton & Trolie, 1986). In our study, we asked participants to report their cognitive and affective reactions to two stimulus prompts: a female smoker and an overweight woman. Both prompts were pretested and presented in both visual and written form. The visual smoker prompt was a graphic depicting a silhouette of a normal weight female who is smoking a cigarette. The accompanying written prompt asked participants to report what they think and how they feel about a woman who smokes at least one pack of cigarettes per day. The visual overweight woman prompt was a silhouette depicting an overweight woman. The silhouette, the third largest used in a prior study by Stunkard, Sorensen, and Schulsinger (1983), was designed to display a woman who is substantially overweight, bordering on obesity. In the accompanying written prompt, participants were asked to report what they think and how they feel about a woman who is overweight: approximately 5 ft 4 in. (1.62 m) tall and weighing 160 pounds (72.6 kg). Order effects were minimized by counterbalancing the sequence in which the two prompts were administered.

The cognitive aspect of attitudes was measured for both prompts by having participants indicate what they thought about the person depicted by rating 20 paired adjectives that describe personal attributes (Osgood, Suci, & Tannenbaum, 1957). Adjective pairs were derived from prior research assessing attitudes toward obesity (Larkin & Pines, 1979; Pingitore, Dugoni, Tindale, & Spring, 1994), with the inclusion of additional items intended to measure cognitions that might be more culturally relevant to Hispanics. For example, descriptive pairs included items such as "good mother-bad mother" and "good wife-bad wife," derived from studies on attitudes held by persons of Hispanic descent (Marin, Perez-Stable, et al., 1989). The affective aspect of attitudes was assessed by having participants respond to five questions characterizing their feelings about a woman who smokes and a woman who is overweight (Backstrom & Hursh-Cesar, 1981; Sudman & Bradburn, 1982). Sample affective questions were, "How much do you like or dislike this female smoker (or overweight female)?" and

¹ Results of an exploratory analysis further supported our decision to exclude Puerto Rican women because they resembled non-Hispanic White women in their stereotypes. Both Puerto Rican American women, $F(1, 17) = 9.85, p < .01$, and non-Hispanic White women, $F(1, 110) = 5.31, p < .05$, responded more positively toward a female smoker than toward an overweight woman.

"How angry do you feel toward this female smoker (or overweight female)?"

We pilot-tested both 5-point and 7-point Likert-type scale versions of the cognitive and affective questions, and found that both Hispanic and non-Hispanic White women completed the different scale versions without difficulty. We therefore reconstructed the 5-point scales into 7-point scales, so that the response options for all questions would be parallel. Higher scores indicated more positive stereotypes, lower scores indicated more negative stereotypes, and ratings of 4 on the 7-point scale were interpreted as neutral. Cognitive stereotyping scores ranged from 20 to 140, affective stereotyping scores ranged from 5 to 35. The scoring procedure generated four stereotype ratings per participant: cognitive stereotype toward a woman who smokes; affective stereotype toward a woman who smokes; cognitive stereotype toward a woman who is overweight; and affective stereotype toward a woman who is overweight.

We conducted correlational and internal consistency reliability analyses using Cronbach's alpha in order to determine whether combining the cognitive and affective dimensions for each stimulus prompt was warranted and would lead to more reliable scores. Cognitive and affective appraisals were correlated: .34 ($p < .01$) for the smoker stimulus, and .30 ($p < .01$) for the overweight stimulus. Combining affective and cognitive responses into composite stereotype scales yielded high internal consistencies for reactions to the female smoker ($\alpha = .87$) and for the overweight woman ($\alpha = .83$). Total scores on each scale ranged from 25 to 175, with higher scores denoting more positive stereotypes.

Paired-comparison question. Participants were also asked to respond to a question that forced them to choose which of the two behaviors was worse for their health: being a smoker or being substantially overweight (obese). The paired-comparison method is a straightforward way of measuring the valence or strength of an attitude because it compels a choice between paired alternatives (cf. Backstrom & Hursh-Cesar, 1981; Sudman & Bradburn, 1982).

Results

Demographic Characteristics

The average demographic features of Hispanic and non-Hispanic White smokers and nonsmokers are summarized in Table 1. The characteristics of the groups were compared using chi-square and analysis of variance (ANOVA). Hispanic study participants were, on average, 6 years younger than the non-Hispanic White participants, $F(1, 238) = 11.8, p < .01$. Although significant, the difference in age was probably not large enough to substantially affect stereotypes because both ethnic groups remained within the same generation or cohort. Hispanic participants also had fewer years of education than non-Hispanic White participants, $F(1, 240) = 34.34, p < .01$. The average Hispanic participant either graduated from high school or from a technical/vocational school, whereas the average non-Hispanic White participant had attended some college.

A greater proportion of non-Hispanic White than Hispanic women currently smoked (55.3% vs. 22.3%), $\chi^2(1, N = 244) = 28.08, p < .01$. Non-Hispanic White nonsmoking women had a higher level of education than non-Hispanic White smoking women, $F(1, 112) = 11.49, p < .01$, but the education level of Hispanic female smokers did not differ from that of Hispanic female nonsmokers. Hispanic female smokers and nonsmokers did differ, however, in their levels of acculturation to mainstream American society, $F(1, 128) = 12.69, p < .01$. As expected, Hispanic female smokers were more highly acculturated than Hispanic female nonsmokers.

Finally, Hispanic and non-Hispanic White women did not differ significantly in their BMIs. This lack of difference was surprising

Table 1
Sample Characteristics

Variable	Non-Hispanic White women (<i>n</i> = 114)		Hispanic women (<i>n</i> = 130)	
	Smokers (<i>n</i> = 63)	Nonsmokers (<i>n</i> = 51)	Smokers (<i>n</i> = 29)	Nonsmokers (<i>n</i> = 101)
Age (years)*				
<i>M</i>	33.9	34.1	30.6	27.6
<i>SD</i>	8.8	11.5	11.8	9.5
Range	18–49	18–64	18–59	18–59
% Smokers*	55		22	
Education*				
<i>M</i>	4.6	5.6	4.0	3.4
<i>SD</i>	1.4	1.5	1.7	1.8
Range	1–7	1–8	1–7	1–7
Acculturation*				
<i>M</i>			2.8	2.0
<i>SD</i>			1.2	1.0
Range			1–5	1–5
Body mass index				
<i>M</i>	24.6	24.4	23.8	24.5
<i>SD</i>	5.4	5.2	4.3	4.7
Range	17.7–39.7	16.7–43.5	16.7–36.1	16.9–41.4
Obesity categories				
% Severely overweight	4	1	1	6
% Morbidly obese	0	0	0	0

* $p < .01$.

in view of prior research showing an increased prevalence of obesity among Hispanic women. Most participants in both ethnic groups were within the normal weight range (National Heart, Lung, and Blood Institute Obesity Initiative Task Force, 1998). Overall, 12.3% of the women fell within the overweight range ($BMI \geq 27.3$), 7.3% fell within the severe overweight range ($BMI \geq 32.3$), and 1.4% fell within the morbidly obese range.

Attitudes Toward Smoking and Obesity

In preliminary analyses, we compared the responses given by Mexican Americans ($n = 107$), Central Americans ($n = 14$), and South Americans ($n = 9$). The absence of significant differences as a function of ethnicity justified the decision to combine these Hispanic subgroups into a single group. This approach to determining ethnic group composition has been used in previous studies of ethnic differences in smoking expectancies (Marin, Marin, Perez-Stable, Sabogal, & Otero-Sabogal, 1995).

A mixed model ANOVA was computed to test the effects of ethnicity and smoking status on attitudes toward a woman who smokes versus a woman who is overweight. Ethnicity (Hispanic/non-Hispanic White) and smoking status (smoker/nonsmoker) served as the between-subjects variables for this analysis, and stimulus type (smoker stimulus vs. overweight stimulus) was the repeated measures variable. Data were imputed when participants failed to respond to one or two items on a scale ($n = 2$). Failure to answer more items, however, resulted in excluding the participant's data from the analysis in order to prevent the increased error that can result from imputing multiple missing data points. Eighteen participants were dropped from the analysis for failure to answer multiple questions. Results of the ANOVA, shown in Table 2, indicate that the expected interaction between ethnicity and stimulus type was nonsignificant, as was the three-way interaction involving smoking status, ethnicity, and stimulus type. Overall, Hispanic women responded more negatively to both stimuli (Hispanic, $M = 96.3$, $SD = 15.2$; non-Hispanic White, $M = 104.4$, $SD = 14.7$), a difference that constituted a moderately robust effect size ($d = .35$; Cohen, 1988). However, contrary to expectations, Hispanic women failed to report more negative attitudes than non-Hispanic White women toward a woman who smokes (Hispanic, $M = 96.2$, $SD = 20.1$; non-Hispanic White, $M = 106.4$, $SD = 17.1$). Nor did Hispanic women report more positive attitudes than non-Hispanic White women toward a

woman who is overweight (Hispanic, $M = 96.5$, $SD = 16.4$; non-Hispanic White, $M = 102.5$, $SD = 17.1$). Moreover, there were no significant differences in how negatively women of each ethnic group felt about women who smoke, relative to those who are overweight.

Unlike the influence of ethnicity, the effect of a woman's smoking status did interact significantly with stimulus type, as shown in Figure 1. Contrast analyses revealed that, as predicted, smokers ($M = 111.5$, $SD = 16.3$) reported more positive attitudes than did nonsmokers ($M = 94.6$, $SD = 18.2$) toward a woman who smokes, $F(1, 232) = 37.34$, $p < .01$. Smokers ($M = 99.8$, $SD = 15.4$) and nonsmokers ($M = 99.1$, $SD = 18.2$) did not differ, however, in their reported attitudes toward a woman who is overweight. Within-subjects tests of simple effects indicated that smokers reacted more positively toward a woman who smokes ($M = 111.5$, $SD = 16.3$), than toward one who is overweight ($M = 99.8$, $SD = 15.4$), $F(1, 86) = 40.81$, $p < .01$, constituting a relatively large effect size ($d = .74$; Cohen, 1988). In contrast, nonsmokers reported more positive reactions toward a woman who is overweight ($M = 99.1$, $SD = 18.2$), than toward one who smokes ($M = 94.6$, $SD = 18.0$), $F(1, 138) = 7.74$, $p < .01$, constituting a small effect size ($d = .24$). Moreover, the interaction between smoking status and stimulus type could not be attributed to spurious differences in age or educational level, as the effect remained significant even after the effects of educational level and age had been covaried out.

Attitudes were also evaluated by examining participants' choices about whether being a smoker or being substantially overweight was worse. Goodman-Kruskal's lambda statistic provided a directional test of the degree of association between the participant's ethnicity or smoking status and her response to the force-choice questions (Goodman & Kruskal, 1954; Lewis-Beck, 1995). Consistent with the ANOVA findings, results indicated that knowing a woman's ethnicity was not a useful predictor of whether she thought it was worse to be a smoker or worse to be obese, $\lambda = .01$, value of the asymptotic SE , assuming that $\lambda = 0$ in the null hypothesis ($VAL/ASEO$) = .19, *ns*. Also consistent with the ANOVA findings, lambda analysis indicated that smoking status was a useful predictor of a woman's relative evaluation of smoking versus obesity. As hypothesized, 61 of 90 smokers (67.8%) thought that being obese was worse than being a smoker. A majority of nonsmokers espoused the opposite belief: 68.2% (103 of 151) thought that being a smoker was worse than being obese, $\lambda = .29$, 95% confidence interval = .15–.44, $VAL/ASEO = 3.46$, $p < .01$. The results of ANOVA and lambda were, therefore, consistent in indicating that personal smoking status was strongly predictive of a woman's attitudes toward smoking and obesity, whereas personal ethnicity was not predictive.

Influence of Acculturation

Additional analyses were undertaken to examine the possibility that relatively less acculturated (more traditional) Hispanic women might exhibit the predicted negative appraisal of smoking and positive appraisal of obesity, even though such attitudes were not manifested by the average Hispanic woman in the study sample. A mixed model ANOVA was undertaken for Hispanic participants with smoking status (smoker/nonsmoker) and acculturation (high/low, based on median split) as between-subjects factors, and

Table 2
Mixed-Model Analysis of Variance Results for Effects of
Ethnicity, Smoking Status, and Stimulus on Stereotypes

Effect	$F(1, 222)$	p
Ethnicity	7.7	<.01
Smoking status	10.6	<.01
Stimulus	11.5	<.01
Smoking Status \times Stimulus	43.1	<.01
Ethnicity \times Stimulus	0.58	.45
Ethnicity \times Smoking Status	0.01	.94
Ethnicity \times Smoking Status \times Stimulus	1.3	.25

Note. Ethnicity = non-Hispanic White and non-Puerto Rican Hispanic; smoking status = smokers and nonsmokers; stimulus = smoker stimulus and overweight stimulus.

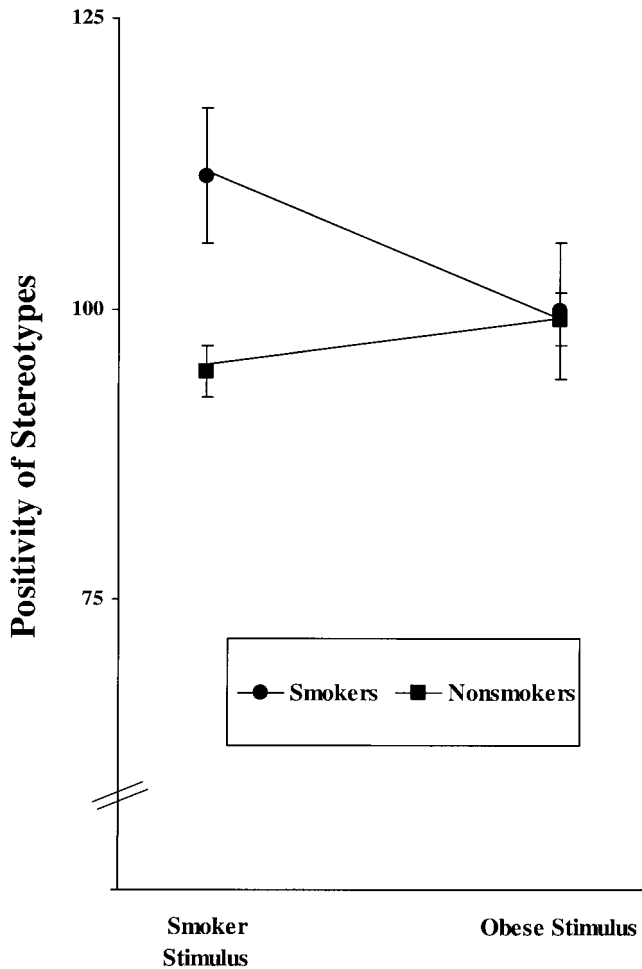


Figure 1. Female smokers' and nonsmokers' stereotypes about a woman who smokes and a woman who is overweight. Higher values indicate more positive stereotypes.

stimulus type (smoker vs. overweight stimulus) as the within-subjects factor. Results indicated that the interaction between acculturation level and stimulus type approached significance, $F(1, 111) = 3.43, p = .07$, suggesting that more acculturated Hispanics tended to respond more positively toward a female smoker and more negatively toward a woman who is overweight than less acculturated Hispanics.

As Table 1 shows, the Hispanic sample showed a fairly limited distribution of acculturation scores. We therefore examined the possibility that a more extreme group comparison, contrasting those in the highest and lowest quartiles of the acculturation distribution might reveal the predicted effect. The extreme groups analysis indicated that the interaction between acculturation and stimulus type was significant, $F(1, 62) = 6.13, p < .05$, and was not moderated by further interactions involving smoking status. More acculturated women ($M = 102.76, SD = 17.03$) responded more positively than less acculturated women ($M = 89.38, SD = 20.28$) toward a female smoker, $F(1, 66) = 9.92, p < .01$, constituting a robust effect ($d = .71$; Cohen, 1988). Moreover, more acculturated women responded more positively toward a

woman who smokes ($M = 102.76, SD = 17.03$) than toward a woman who is overweight ($M = 94.92, SD = 12.81$), $F(1, 36) = 5.92, p < .05$, constituting a moderately robust effect ($d = .52$; Cohen, 1988). Less acculturated women, in contrast, responded more positively toward a woman who is overweight ($M = 95.66, SD = 17.88$) than toward one who smokes ($M = 89.38, SD = 20.28$), $F(1, 28) = 5.65, p < .05$, constituting a moderately robust effect ($d = .33$; Cohen, 1988). As level of acculturation increased, attitudes toward a female smoker became more positive ($r = .36, p < .01$), but there was no significant correlation between level of acculturation and attitudes toward an overweight woman.

A Hispanic woman's level of acculturation was also a significant predictor of whether she thought it was worse to be a smoker or worse to be obese, $\lambda = .37$, 95% confidence interval = .18–.55, VAL/ASEO = 3.16, $p < .01$. Nearly 75% of less acculturated Hispanic women thought it was worse to be a smoker than to be obese. Conversely, 74.4% of relatively more acculturated Hispanic women thought that being obese was worse than being a smoker.

Influence of Personal Weight Status

A woman's personal status as a smoker predicted that she would hold relatively more positive stereotypes toward a woman who smokes and relatively less positive stereotypes toward one who is overweight. For symmetry, therefore, we examined whether a woman's personal weight status would also be predictive of her attitudes toward smoking and obesity. We performed a repeated measures mixed model ANOVA with BMI (high/low) and ethnicity (Hispanic/non-Hispanic White) as the between-subjects variables, and stimulus type (smoker vs. overweight woman) as the within-subjects variable. Unlike the influence of personal smoking status, a woman's body weight status had no significant effect on her stereotypes about overweight or smoking. The stereotypes of women with lower BMIs ($M = 98.1, SD = 17.2$) were no more negative than those of women with higher BMIs ($M = 102.3, SD = 15.8$) toward a woman who is overweight. Nor was BMI a useful predictor of whether a woman thought it was worse to be a smoker or worse to be obese, $\lambda = .07$, VAL/ASEO = .59, *ns*.

Discussion

In this sample of Hispanic and non-Hispanic White women, ethnicity per se had no significant influence on attitudes toward smoking and obesity. Within the sample of Hispanic women, however, acculturation was associated with stereotypes. More acculturated women responded more positively than less acculturated women toward a female smoker. More acculturated women also reacted more positively toward a woman who smokes than toward one who is overweight, whereas the converse held true for less acculturated women.

A woman's personal smoking status emerged as a robust predictor of stereotypes toward women who smoke as well as toward women who are overweight. Female smokers of both ethnicities evaluated a woman who smokes more positively than did female nonsmokers, which is consistent with prior findings (Carll, 1978; Chassin, Presson, Sherman, Corty, & Olshavsky, 1981; Elkind, 1985; Polivy, Hackett, & Bycio, 1979). Moreover, female smokers evaluated a woman who smokes more positively than one who is overweight. These results are more consistent with the interpreta-

tion that female smokers hold salient weight concerns (Gritz, Klesges, & Meyers, 1989; Klesges et al., 1988) than they are with the premise that weight is of little concern for women who smoke (French & Jeffery, 1995; Glasgow, Strycker, Whitlock, Eakin & Boles, 1999).

We had expected that the relative dearth of cigarette smoking and the relative excess of obesity among Hispanic versus non-Hispanic White women would parallel and potentially be explicable by ethnic differences in women's attitudes about the relative attractiveness of smoking versus obesity. We expected Hispanic women to differ from non-Hispanic White women by exhibiting more negative attitudes toward smoking and more positive attitudes toward obesity. We postulated that such an attitudinal profile might protect Hispanic women from adopting smoking as a way to control body weight. It is possible that our failure to find simple effects of ethnicity on women's attitudes toward smoking and obesity is related to our failure to find differences between the average BMIs of our Hispanic and non-Hispanic White samples. Previous research literature had led us to expect that Hispanic women would have higher BMIs than non-Hispanic White women. In this study, most women of both ethnic groups had BMIs that fell within the normal weight range. It is possible that stronger effects of ethnicity or weight status might emerge in samples including a greater proportion of obese Hispanic women.

At least within the range of BMIs sampled here, the findings suggest that personal smoking status is substantially more effective than personal weight status in influencing attitudes toward smoking and obesity. One must wonder about the causes for that discrepancy. Our first thought was that the failure of women's body weights to predict their stereotypes might have resulted from a restricted range of BMIs. In actuality, however, the observed range of BMIs was substantial, even though mean body weights fell between normal and the lower end of the overweight range. A second explanation may better account for our failure to find a relationship between a woman's BMI and her attitude about weight. Rodin, Silberstein, and Streigel-Moore, (1984) argued that dissatisfaction with personal body weight is normative among American women, regardless of actual body weight. We wonder whether almost every woman living in America experiences such exaggerated pressures about bodily appearance as to make discontent about body weight virtually universal. If so, then a woman's BMI may provide no systematic information about her attitude toward weight.

Having considered why a woman's body weight might fail to predict her attitudes toward smoking and weight, we must now wonder why personal smoking status is so highly predictive. We had expected that smokers' positive attitudinal bias toward other smokers might result from cognitive dissonance, whereby smokers attempt to reduce emotional conflict about engaging in a societally stigmatized behavior by adopting more positive attitudes toward others who engage in that behavior. It must be noted, however, that some aspects of our findings are inconsistent with dissonance theory. An example is the lack of evidence that relatively heavier women espoused more positive attitudes toward other women with higher BMIs.

A different and speculative interpretation is that, in contemporary America, smoking status may be beginning to define a subculture, characterized by a set of attitudes and norms with which smokers identify, rather than simply a behavior in which people

engage. Stringent antismoking regulations have had the side effect of increasing the salience of "smoker" as a social group designation. Americans who continue to smoke find themselves repeatedly thrust together as a stigmatized outgroup (e.g., huddled together outside buildings in winter, confined to enclosed smoking sections in airport lounges, etc.). Fellow smokers offer acceptance and belonging, but they also exert implicit and sometimes explicit pressure not to abandon the group by giving up cigarettes. In this new social context, peer group influences that sustain smoking behavior may come to exert homogenizing effects long beyond the adolescent period. A large body of research shows that people modify their attitudes to assimilate those of the group with which they are affiliated, even at some personal cost (Brewer & Pickett, 1999; Mummendey & Wenzel, 1999). Our findings show that the subgroup of women who smoke show a surprising degree of consistency in their attitudes about female attractiveness. Perhaps these commonalities arise because they have begun to identify themselves as members of a shared subculture.

This study had three limitations whose implications should be considered. First, a question can be raised about whether this subsample of Hispanic women was sufficiently large to adequately characterize the effects of acculturation on stereotypes. Although sample size was sufficient to detect the large effect of acculturation on attitudes toward smoking ($d = .71$), power was probably insufficient to detect the much smaller effect of acculturation on attitudes toward obesity ($d = .13$). Second, there was ambiguity in characterizing the weight of the overweight stimulus prompt. Although some verbal descriptors referred to that woman as substantially overweight (obese), the specific height and weight attributes ascribed to her actually placed her BMI in the overweight rather than the obese range. It remains possible, therefore, that a female stimulus prompt displaying a more prominent degree of obesity would have elicited more marked ethnic differences in stereotyping. Third, it can be questioned whether the verbal prompt and the silhouette for the overweight woman were culturally valid for use with Hispanic women. Women from some Hispanic ethnic groups cite the "complete loss of waistline" and weight over 200 pounds as the defining point for obesity (Massara, 1989). If Hispanic women in this sample held such beliefs, then they may have appraised the woman shown in the obesity prompt as only slightly overweight or even as lean. Future researchers are advised to pretest a range of silhouettes to determine the culturally appropriate point of obesity, although the challenge of comparing across cultures with different obesity definitions will remain.

In terms of clinical implications, the results raise important questions about how female smokers acquire their positive stereotypes about other smokers and their more negative stereotypes about those who are overweight, and how they sort through their several subgroup identifications to arrive at those appraisals. An unanswered question with important etiological implications is whether women's adoption of positive stereotypes about smoking or negative stereotypes about obesity precede or follow the initiation of smoking.

A treatment possibility that may warrant exploration for Hispanic female smokers involves mobilizing the smoker's identification with health-promoting values of her ethnic group in order to help neutralize the less healthful socializing pressures that she experiences in American culture. If successfully engaged, the traditional Hispanic negative cultural evaluation of smoking might

help Hispanic women to resist the cosmetically oriented slimness pressures and the affiliative group pressures that draw them to smoke.

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