Published in final edited form as:

Int Migr Rev. 2017 ; 51(1): 3–36. doi:10.1111/imre.12220.

Becoming Overweight Without Gaining a Pound: Weight Evaluations and the Social Integration of Mexicans in the United States

Claire E. Altman*,

University of Missouri

Jennifer Van Hook, and

The Pennsylvania State University

Jonathan Gonzalez

Arizona Department of Health Services

Abstract

Mexican women gain weight with increasing duration in the United States. In the United States, body dissatisfaction tends to be associated with depression, disordered eating, and incongruent weight evaluations, particularly among white women and women of higher socioeconomic status. However, it remains unclear how overweight and obesity is interpreted by Mexican women. Using comparable data of women ages 20–64 from both Mexico (the 2006 Encuesta Nacional de Salud y Nutricion; N=17,012) and the United States (the 1999–2009 National Health and Nutrition Examination Surveys; N=8,487), we compare weight status evaluations among Mexican nationals, Mexican immigrants, U.S.-born Mexicans, U.S.-born non-Hispanic Whites, and U.S.-born non-Hispanic blacks. Logistic regression analyses, which control for demographic and social-economic variables and measured body mass index and adjust for the likelihood of migration for Mexican nationals, indicate that the tendency to self-evaluate as overweight among Mexicans converges with levels among non-Hispanic whites and diverges from blacks over time in the United States. Overall, the results suggest a U.S. integration process in which Mexican-American women's less critical self-evaluations originate in Mexico but fade with time in the United States as they gradually adopt U.S. white norms for thinner body sizes. These results are discussed in light of social comparison and negative health assimilation.

“...our job, as relatively new Americans...was to be as white as possible.”

—Domingo Martinez, in a discussion about his two sisters when they were growing up in Brownsville, Texas in *This American Life*¹

*Corresponding author: 501 Clark Hall, Department of Health Sciences, University of Missouri, Columbia, Missouri 65211. altmanc@health.missouri.edu.

¹This American Life. Episode 449, Middle School: Act Three. Mimi in the Middle. Originally aired 10/28/2011. Transcript available at <http://www.thisamericanlife.org/radio-archives/episode/449/transcript>.

Introduction

Among most immigrant groups, exposure to the U.S. environment is associated with weight gain (Akresh 2008, Antecol and Bedard 2006, Goel et al. 2004, Oza-Frank and Cunningham 2010, Sánchez-Vaznaugh et al. 2009), which in turn is associated with declines in physical health (National Institute for Health 2000, Oza-Frank and Cunningham 2010). It is less well understood how U.S. integration and weight gain influence immigrants' mental well-being. Despite rising obesity prevalence, American culture continues to impose stiff social and psychological penalties on those who are overweight and obese, particularly women (Brewis 2014, Saguy 2013). Incongruent weight evaluations and body dissatisfaction are associated with disordered eating behaviors, depression, and altered perceptions of one's body (Cash and Brown 1989, Chang and Christakis 2003, Grabe and Hyde 2006). The negative psychological consequences are not limited to obese women, but are also experienced by many normal weight individuals (Atlantis and Ball 2008, Chang and Christakis 2003, Frisco, Houle and Martin 2010). Thus, immigrant women's weight evaluations provide important clues about how they assess themselves and their personal value in U.S. society.

We focus here on the association between U.S. social integration and Mexican women's weight evaluations. Mexicans are important because they compose the largest national origin group (U. S. Bureau of the Census 2010) and have high obesity prevalence. The association of U.S. exposure with obesity is particularly well documented for Hispanics more generally and Mexicans in particular (Akresh 2008, Antecol and Bedard 2006, Goel et al. 2004, Oza-Frank and Cunningham 2010, Sánchez-Vaznaugh et al. 2009). Currently, Mexican-American, together with African-American women, are heavier than other racial-ethnic groups in the United States (Flegal et al. 2012), which may be accompanied by greater body dissatisfaction (Cachelin et al. 2002). Mexicans also provide an interesting case study for understanding health acculturation because, as we elaborate here, there are theoretical reasons to suspect that Mexican immigrants will resist U.S. preferences for thinness and norms for body dissatisfaction due to their persistently lower socioeconomic status and possible racialization as a minority group in the United States (Telles and Ortiz 2008).

Past psychological research often treats weight-evaluations as an individual-level process. We depart from this tradition by treating them as the product of group-level processes. Though they are based on individual responses, weight evaluations are in fact socially patterned and "may vary in predictable ways among population subgroups" (Chang and Christakis 2003). Thinness and having concerns about attaining or maintaining an acceptable body weight are strongly intertwined with being white, female, and economically advantaged in the U.S. (Counihan 1992, Lovejoy 2001), but are less common in Mexico and among African American women. Thus, patterns in Mexican women's weight self-evaluations provide insights about the various racial and socioeconomic groups toward whom they are acculturating and the mental health costs of this multifaceted assimilation process (Chamorro and Flores-Ortiz 2000).

Finally, even though our cross-sectional data precludes us from following immigrants longitudinally, we extend beyond prior work. We employ a binational study design to compare Mexican immigrant women by multiple indicators of U.S. integration with

Mexicans living in Mexico. This provides a comprehensive snapshot of Mexican women's weight evaluations across the migration and integration process. By comparing U.S. immigrants to those in Mexico who are most likely to move to the United States, we can also account for the impact of selective immigration (Van Hook et al. 2012).

Prior Research

Prior research has revealed large racial and class differences in how U.S. women understand and evaluate their weight. Thinness is a clear marker of status in the contemporary United States, particularly among white women (Cawley 2004, Flegal, Carroll and Ogden 2010, McLaren 2007, Sobal and Stunkard 1989). Beyond being an indicator of class, thinness is further associated with moral superiority. Having concerns about being the "right" body weight often involves a tacit belief that obesity reflects a lack of self-discipline (Saguy and Gruys 2010). Yet, beliefs favoring thinness are downplayed or rejected by many black women (Kemper et al. 1994, Lovejoy 2001, Oforu, Lafreniere and Senn 1998). Blacks generally report better mental health than whites, greater body satisfaction than other groups (Lovejoy 2001, Root 1990, Thompson 1994) and often reject what they consider to be unattainable Eurocentric standards of beauty (Lovejoy 2001, Oforu, Lafreniere and Senn 1998). Related research indicates that black women have different standards of beauty than white women (Allan, Mayo and Michel 1993, Fitzgibbon, Blackman and Avellone 2000, Gordon et al. 2010, Poran 2002) and are more likely to evaluate themselves as normal weight even among those with body mass indexes (BMIs) defined as overweight or obese according to the Centers for Disease Control and Prevention (CDC) (Paeratakul et al. 2002).

Socioeconomic status is also associated with women's weight evaluations among both white and black women. In clinical studies, women with higher socioeconomic status (SES) tend to choose thinner ideal body sizes than lower SES women, and those with higher incomes more accurately perceive their clinically-defined weight status (Kemper et al. 1994, Paeratakul et al. 2002). Although more research is needed, comparisons of blacks and whites with similar levels of SES suggest that race and class may be confounded (Caldwell, Brownell and Wilfley 1997), and racial differences may diminish as some black women attain upward mobility (Cachelin et al. 2002, Myers and Crowther 2009, Oforu, Lafreniere and Senn 1998, Poran 2002, Roberts et al. 2006).

Where do Mexican women fit into this race-class pattern? Comparably less is known about Mexican women's weight evaluations and how they differ between Mexico and the United States, U.S. social integration, and socioeconomic status. Looking at mental health more generally, Mexican immigrants report a lower prevalence of mental illness, across a wide range of outcomes, compared to their U.S.-born peers (Argeseanu Cunningham, Ruben and Venkat Narayan 2008, Nicklett and Burgard 2009, Salas-Wright, Kagotho and Vaughn 2014). But integration-related factors such as duration, immigrant generation, and language modify this pattern (Argeseanu Cunningham, Ruben and Venkat Narayan 2008, Ortega et al. 2000). Mexican immigrants face an increasing risk of mental illness with duration of residence in the U.S. (Breslau et al. 2007, Nicklett and Burgard 2009, Vega et al. 1998). Likewise the risk of mental illness rises across generations and is often highest among the native-born (Alegría et al. 2007, Breslau et al. 2007, Salas-Wright, Kagotho and Vaughn

2014, Vega et al. 1998). Finally, English language proficiency is associated with a higher risk of mental illness (Alegría et al. 2007, Bhugra 2004, Vega et al. 1998).

In contrast to research on mental health, less research has been conducted on weight evaluations for Mexican women, and what we do know is mostly based on small, regional studies (Cachelin, Monreal and Juarez 2006, Grabe and Hyde 2006, Johnsen et al. 2002, Myers and Crowther 2009), and often focuses on all Hispanic women rather than Mexican women. Nevertheless, the results of the existing research suggest that assimilation is related to Hispanic women's body dissatisfaction, consistent with the mental health findings cited above. Although Mexican media and culture promotes thin body ideals (Garcia Calderon 2008), fatness appears to be less stigmatized in Mexico than in the United States (Crandall and Martinez 1996, Drumond Andrade et al. 2012). In the United States, highly acculturated Hispanic women (compared with less acculturated Hispanic women) are more likely to self-evaluate as overweight (Ahluwalia et al. 2007), prefer smaller ideal body shapes and thinness (Cachelin, Monreal and Juarez 2006, Lopez, Blix and Blix 1995), and have eating disturbances (Crago, Shisslak and Estes 1996). Additionally, among Mexican women there is a significant and positive association between immigrant generation and disordered eating (Chamorro and Flores-Ortiz 2000).

It remains less clear how Mexicans compare with whites and blacks and whether this varies by socioeconomic status. On the one hand, compared to whites, Mexican women are less dissatisfied (Ahluwalia et al. 2007, Cachelin, Monreal and Juarez 2006, Lopez, Blix and Blix 1995), less likely to self-evaluate as overweight despite being heavier (Chang and Christakis 2003, Crago, Shisslak and Estes 1996, Fitzgibbon, Blackman and Avellone 2000, Lopez, Blix and Blix 1995, Winkleby, Gardner and Taylor 1996), and choose larger ideal body shapes which are similar to those chosen by blacks (Gordon et al. 2010). However, other studies show that Hispanics have the same or greater weight concern than whites (Viladrich et al. 2009), particularly among younger Hispanic women (Pompper and Koenig 2004), English speakers (Ahluwalia et al. 2007, Cachelin, Monreal and Juarez 2006), and those who migrated as children (Lopez, Blix and Blix 1995).

Overall, these mixed findings make it difficult to develop a nuanced understanding of how Mexican women's acculturation process is related to weight evaluations, particularly its likely intersections with SES. One possible reason for the mixed and unclear findings is that prior work has tended to involve small, non-representative samples that do not directly compare non-Hispanic white, non-Hispanic black, and Mexican women by indicators of U.S. exposure and socioeconomic status.

Research Contributions and Hypotheses

Our contributions here are both empirical and theoretical. Empirically, we use nationally-representative data from Mexico and the United States to provide a more systematic and comprehensive assessment of how Mexican women's weight evaluations are related to their exposure to U.S. society within and across generations. Our empirical strategy is described further below in the Methodology section. Theoretically, we draw upon sociological theories about the intersections of assimilation, race, and class in the United States to develop

hypotheses about Mexican women's weight evaluations. We devote the remainder of this section to our hypotheses.

The first, which we call the "racialization" hypothesis, predicts little change in Mexicans' weight self-evaluations as they integrate into society. This idea emerges from the segmented assimilation theory developed by Portes and Zhou which suggests multiple assimilation pathways (1993). They argued that some immigrant groups experience "upward" assimilation as they integrate both socially and economically into the U.S. mainstream. Other groups deliberately maintain ethnic boundaries for some time as they move upward socioeconomically. Still other groups experience "downward" assimilation as they succumb to cycles of poverty, disenfranchisement, and racialization. Although Mexicans are not necessarily tied to the third pathway within Portes' and Zhou's original work, many scholars nevertheless identify Mexicans as at-risk of following patterns of "downward" assimilation (Borjas 2007, Haller, Portes and Lynch 2011, Huntington 2004, Perreira, Harris and Lee 2006, Portes, Fernandez-Kelly and Haller 2005, Portes 2007, Valdez 2006) given their status as a racialized minority group. For example, Telles and Ortiz (2008) argued that Mexicans have become a racialized minority group, and that their prospects for full educational integration are low due to discriminatory attitudes, low teacher expectations, and poorly-resourced schools. A recent scholarly exchange reiterated concerns about the downward assimilation of Mexicans (Alba, Kasinitz and Waters 2011, Haller, Portes and Lynch 2011).

Importantly, groups undergoing downward assimilation are theorized to develop a separate set of norms that are reinforced within racially segregated schools and neighborhoods. This has crucial implications for weight self-evaluations, which appear to be reinforced by peers (Christakis and Fowler 2007, Viladrich et al. 2009). Mexican women following this pathway may develop different norms about what it means to be "about the right weight" versus "overweight", and may resist "unattainable" white norms favoring thinness. Overall, to the extent that the racialization perspective applies to Mexicans, we expect to find a pattern of assimilation in which Mexican body size norms remain distinct from whites and blacks regardless of their level of U.S. integration (H1a). In a more extreme case, we expect convergence at higher levels of U.S. integration with the patterns observed among another minority group, blacks (H1b). Furthermore, we expect variation in these patterns by SES as these patterns are most likely to occur among those at lower levels of SES, such as those without a high school degree (H1c).

An alternative hypothesis, which we label the "social assimilation" hypothesis, predicts that Mexicans' body weight norms will tend to converge with those held by non-Hispanic white women. We trace this idea to classical assimilation theories that suggest that most immigrant groups, including Latinos, are likely to eventually assimilate into the U.S. middle class, and ethnic distinctions fade over time and across generations (Kasinitz et al. 2008). In their contemporary formulation, Alba and Nee (2003) recognize that racial discrimination can slow or even block assimilation. However, they also view race and ethnicity as a social construction whereby boundaries between racial and ethnic groups, including between Latinos and non-Hispanic whites, may be crossed, shifted, or faded. The ambiguity of racial and ethnic boundaries among nonblacks was recently illustrated in Lee and Bean's mixed method study (2010), which showed that Latinos and Asians with non-Hispanic white

parentage tended to have shifting and contextualized identities, but mixed-race persons with black parentage had more rigid black identities. This suggests that boundary crossing may be more common among Latinos and Asians than black immigrants.

Of key importance for weight self-evaluations and our study, Alba and Nee theorize that acculturation of U.S. norms occurs as immigrants and their descendants try to improve their social and economic position. In the process of securing social acceptance and an economic foothold among the American middle class, immigrants and their children may adjust their opinions, attitudes, and behaviors (consciously or not) to match those in their aspired class or status group. Alba and Nee note the importance of this for gaining acceptance in the middle class: “Associated with acculturation are culturally codified notions of appropriate behavior which, when learned, serve as cues to others as to an individual’s level of cultural and social competence” (2003: 42). Applied to weight self-evaluations, these ideas suggest that as Mexicans assimilate, their reference group may shift from Mexicans to middle- and upper-class white Americans (Perez et al. 2002).

It follows that U.S. middle- and upper-class weight status and body size norms are particularly salient for predicting shifts in Mexicans’ body weight norms. As noted earlier, middle- and upper-class white women tend to adhere to body size norms that value thinness. In contrast, women in Mexico express fewer concerns about body weight and anti-fat attitudes and often underestimate their body weight (Crandall and Martinez 1996, Drumond Andrade et al. 2012). If Mexicans follow the pattern predicted by the social assimilation perspective, we expect indicators of U.S. integration among Mexicans to be associated with a tendency to self-evaluate as overweight, with the most integrated resembling those of the highest status groups (middle- and upper-class whites) in the United States (H2a). Furthermore, because immigrants are theorized to take cues from those outside their own race/ethnic and class group, this association is expected regardless of Mexican’s own class position (i.e., even among those with less than a high school degree) (H2b).

Methods

To evaluate the hypotheses, we employed a binational study design to compare Mexican nationals with Mexicans living in the United States by multiple indicators of U.S. integration and educational attainment. The tendency to self-evaluate as overweight could increase with U.S. integration as a consequence of social integration as hypothesized, but could also derive from secular increases in actual body weight and exposure to obesity-related health messages (Altman, Van Hook and Hillemeier 2013) that have been documented for Mexican Americans and whites (Flegal et al. 2010). Therefore, we employed a rigorous set of controls, including the respondents’ CDC-defined weight classification (following standard practice Chang and Christakis 2003), birth cohort, health insurance coverage, and whether a doctor ever told the respondent she was overweight. We further examined the association between U.S. integration and weight self-evaluations *within* CDC-defined weight categories (normal weight, overweight, obese I, obese II). This permitted cleaner comparisons of women within the same objective weight categories and allowed us to test whether the findings hold for normal-weight women (BMI<25), who are the least likely target for health messages about their weight. Finally, we reanalyzed the sample while excluding women ever

told by a doctor they were overweight. Consistent results across all analyses would lend support to the idea that assimilation processes, rather than health messages, are driving the group differences.

Additionally, we aimed to overcome two often-overlooked issues related to immigrant selection. First, most studies of immigrant incorporation limit analyses to U.S. samples, and in doing so, assume that the newest immigrant arrivals represent the “baseline” group and comparisons with those of longer U.S. residence, greater integration, and higher generations to represent the effects of exposure to the United States (Hunt, Schneider and Comer 2004, Jasso et al. 2004). To gain a more complete picture of all stages of the migration and settlement process, we compared Mexicans with non-migrants in Mexico.

The second problem concerns comparison groups. If Mexican immigrants are compared to all Mexican residents we fail to account for the fact that migration from Mexico is not a random process (Massey, Durand and Malone 2002). Ideally, Mexican immigrants would be compared with their counterparts living in Mexico. To approximate, we compared Mexican immigrants to women who are most similar to actual migrants but still reside in Mexico. Our method for identifying such women is described below.

Data and Sample

We combine U.S. and Mexico data sources: (a) the National Health and Nutrition Examination Survey (NHANES) and (b) Encuesta Nacional de Salud y Nutricion (ENSANUT). NHANES is a nationally representative, cross-sectional study conducted by the Centers for Disease Control and Prevention (CDC). We used the NHANES to assess weight self-evaluations among U.S. residents. We pooled six waves (1999/2000/2001/2002/2003/2004/2005/2006/2007/2008, and 2009/2010) to ensure adequate sample sizes for Mexican immigrants. ENSANUT 2006 is a nationally representative Mexican survey that focuses on health and nutrition, similar to NHANES. We used the ENSANUT 2006 to assess weight self-evaluations among Mexican residents. For both the NHANES and ENSANUT, anthropometric data were collected by trained technicians and health data were gathered through questionnaires.

We pooled the NHANES and ENSANUT data into a single file. The analytic sample was limited to women aged 20–64 who reported being of Mexican origin, U.S.-born white, or U.S.-born black. Respondents of Mexican origin include women living in Mexico and the United States. All pregnant women (416 in ENSANUT and 1,015 in NHANES) were excluded because of confounding between BMI and pregnancy. Additionally, women with extreme BMIs (less than 18.5 or greater than 50) were excluded (253 in ENSANUT and 338 in NHANES) because our analyses required us to make comparisons within weight categories, and so few Mexican-origin women reported such extreme weights. For example, only 11 U.S.-born Mexican women had a BMI less than 18.5 and only 17 had a BMI greater than 50.

Very few cases in the pooled ENSANUT-NHANES sample had missing data. After exclusions based on racial/ethnic group, nativity, age, pregnancy, and weight status, the sample of interest consists of 25,728 cases (8,552 in NHANES; 17,176 in ENSANUT). Of

these, less than half a percent (0.44%) had missing data on the dependent variable and an additional 0.45 percent had missing data on at least one of the independent variables. After applying the sample restrictions and dropping cases with missing data, 25,499 cases (8,487 in NHANES and 17,012 in ENSANUT) remained in the final analytic sample.

We also used the 2000 Mexican Census (Ruggles et al. 2010) to estimate prediction models of living in a migrant-sending household to assess the role of selective migration (discussed below). The 2000 Mexican census data were limited to Mexican-born women ages 20–64 ($N = 2,545,981$).

Variables

Weight Self-Evaluation—The dependent variable, weight status self-evaluation, was measured with the question: *How do you consider your weight?* Respondents could choose: overweight, underweight, or about the right weight. Although we could not directly measure body satisfaction or body size preferences, the response “overweight”, when juxtaposed against “about the right weight”, suggests that the respondent feels she weighs too much. Prior research has used weight self-evaluations as a gauge of body size satisfaction (Ofosu, Lafreniere and Senn 1998). NHANES used a Spanish questionnaire for Spanish-speaking respondents. ENSANUT used an equivalent question and response options in Spanishⁱⁱ as the NHANES Spanish questionnaire version.

Body Mass Index (BMI)—Following prior research (Chang and Christakis 2003), we controlled for BMI and further compared groups within BMI categories. We used CDC-defined weight categories: normal weight ($BMI < 25$; reference), overweight ($25 \leq BMI < 30$), obese I ($30 \leq BMI < 35$), and obese II ($BMI \geq 35$). BMI is a reliable measure of body fatness used both by the CDC (Centers for Disease Control and Prevention 2011, Van Hook et al. 2012) and international health organizations (World Health Organization [WHO] and the International Association for the Study of Obesity).

Country of Residence, Race/ethnicity, and U.S. Integration—We constructed four groups that describe the respondents’ country of residence and race/ethnicity: Mexican nationals, Mexicans (U.S. residents of Mexican origin, including Mexican-born and U.S.-born), U.S.-born non-Hispanic whites (“whites”), and U.S.-born non-Hispanic blacks (“blacks”).

We further subdivided Mexicans by five different indicators of U.S. integration. The first subdivides Mexicans by a five point scale indicating the degree to which the respondent spoke English versus Spanish at home: 1=Only Spanish, 2=More Spanish than English, 3=Both Equally, 4=More English than Spanish, and 5=Only English. The second distinguishes Mexican-born who speak only Spanish or more Spanish than English, other Mexican-born, and U.S.-born Mexicans. The third distinguishes among Mexican-born who arrived as adults age 20+ (1.0 generation), Mexican-born who arrived as children or adolescents age 0–19 (1.5 generation), and U.S.-born Mexicans. We chose age 20 as the cut-

ⁱⁱENSANUT asked, “Considera usted que...?” The response options were (1) tiene sobrepeso, (2) tiene obesidad, (3) esta bajo de peso, (4) esta bien de peso. An ENSANUT response of 1 or 2 were considered equivalent to an NHANES response of overweight.

off because prior research suggests that immigrants who arrived in the U.S. as adolescents or children are more likely to self-evaluate as overweight (Lopez, Blix and Blix 1995)ⁱⁱⁱ. The fourth indicator subdivides Mexicans by generational status: 1.0, 1.5, 2nd, and 3rd. The fifth subdivides Mexican by an acculturation scale. The acculturation scale is the average of responses, ranging from 1="Spanish only" to 5="English only", to questions concerning the language the respondent reads and speaks in, used as a child, usually speaks at home, thinks in, and uses with friends. Generational status and the acculturation scale were only available in the 1999/00, 2001/02, and 2003/04 NHANES, so analyses using these last two indicators were conducted on a smaller NHANES sample (NHANES N = 3,875; total N = 20,887 when combined with ENSANUT).

Educational Attainment—The racialization hypothesis predicts differential outcomes by SES. We used educational attainment as an indicator of SES. Education is a strong predictor of health outcomes (Freese and Lutfey 2011). Other research has shown when studying weight outcomes, education may be a better indicator of SES than income or poverty status because it is less likely to be affected by a person's body weight (Zhang and Wang 2004). We classified educational attainment categorically as less than high school, high school, and some college or more (reference category). In doing so, we are not constraining the effects of education to be the same in Mexico and the U.S. Instead, a higher level of education in either country entails a higher socioeconomic status regardless of the actual value. In sensitivity analyses, we tested percentile income respective to country as an alternative SES indicator and found substantively similar results (available from authors).

Controls—Socio-demographic controls included marital status (1=married), age, age-squared, and birth cohort to control for changing ideas about weight (born in the 1950s (reference group), 1960s, 1970s, and 1980s). We also controlled for whether the respondent has any form of health insurance coverage, whether a doctor ever told them the respondent she was overweight (Post et al. 2011), and smoking behavior (never smoked, current smoker, and former smoker) because of the association between smoking, weight, and dieting behaviors (French and Jeffery 1995).

Means for all analytic variables for all women and for Mexican nationals, Mexican immigrants, and U.S.-born Mexican, black, and white women are displayed in Table 1.

Weighting and Adjustments for Migration Selection

All analyses were weighted using the provided ENSANUT and NHANES examination weights, normalized within country^{iv}. Additionally, we adjusted all standard errors to account for the clustered sampling design of the ENSANUT and NHANES using the `svy` commands in Stata 11.1.

To adjust for selective migration from Mexico to the United States, we used a "migration-adjusted weight" for ENSANUT respondents, assigning greater weight to respondents who

ⁱⁱⁱAge at arrival was estimated by subtracting duration of U.S. residence from the respondent's age at examination. Because data on duration of U.S. residence is categorized in the NHANES, we approximated duration as the mid-point of the reported category. Duration of residence categories were less than one year, 1–4, 5–9, 10–14, 15–19, 20–29, 30–39, 40–49, and 50 or more years.

^{iv}They are multiplied by a constant so that they sum to the sample size within each country.

are likely to live in a migrant-sending household. We first estimated the probability of living in a migrant-sending household for all Mexican respondents. We focused on identifying migrant-sending households because prior research shows that Mexican residents who live in migrant-sending households are more likely to migrate themselves than others (Massey, Durand and Malone 2002). The ENSANUT does not indicate the migration status of respondents' households, so we estimated it from a prediction equation estimated on the 2000 Mexican Census (as a function of age, marital status, educational attainment, insurance coverage, state, population size of municipio, percentage of migrants in the municipio, and interactions with educational attainment with the percentage of migrants in the municipio). The coefficients were used to estimate the predicted probability for women in the ENSANUT using the predict command in Stata 11.1. We then multiplied the ENSANUT sampling weight by the probability of living in a migrant household to create the migration-adjusted weight. In sensitivity tests, the application of this adjusted weight produces estimates that are more closely representative of Mexicans living in migrant-sending households (and are therefore more similar to actual Mexican immigrants) than the unadjusted estimates. The weight construction process is described in further detail in the Appendix.

Results

Descriptive Analysis

To evaluate the two major hypotheses, we examined differences in weight self-evaluations across country of residence, nativity, and race/ethnicity groups by CDC weight classification and educational level (Table 2). The descriptive results were weighted with the unadjusted sampling weight, and therefore did not account for migration selectivity. The top panel presents the percentage of women classified as either "obese I or obese II" according to CDC standards ($BMI \geq 30$) and, among these women, the percentage who self-evaluated as overweight. Across all educational levels, obesity prevalence increased with U.S. exposure among Mexican-origin women, with the lowest prevalence among Mexican nationals, higher among Mexican immigrants, and highest among U.S.-born Mexicans. U.S.-born blacks were the heaviest of all groups, and U.S.-born white women weighed less than U.S.-born blacks and Mexicans (i.e., similar to Mexican nationals and Mexican immigrants). The difference between Mexican nationals and U.S.-born Mexicans is greatest among women with the most education. For example, the difference is 9.4 percentage points – 40.1 minus 49.5 percent – among those with less than high school, but 16.8 percentage points among women with at least some college. This departs from prior work, which finds that foreign-born adults with the lowest education levels experience the greatest gains in BMI (Kaushal 2009, Sanchez-Vaznaugh et al. 2008), but this discrepancy may be due to the fact that we compare across generations rather than by duration of residence.

More to the point, among obese I or II women, Mexicans with more U.S. exposure were more likely to self-evaluate as overweight, increasing from Mexican nationals to Mexican immigrants to U.S.-born Mexicans. Consistent with the social assimilation perspective, Mexican immigrant and U.S.-born Mexican women's tendency to self-evaluate as overweight approached the levels observed among U.S.-born white women (H2a), even

among those with the least education (H2b). U.S.-born blacks emerge as the least likely of the U.S.-resident groups to self-evaluate as overweight, especially at lower educational levels.

As discussed earlier, one interpretation of these findings is that Mexican women acculturate toward white women's weight norms. Another possibility is that, over time in the U.S., Mexican women pick up health messages and adjust their assessment to more accurately reflect their CDC-defined weight status. To test the latter, we examined weight evaluations among a group that would not qualify as overweight by medical standards: normal-weight women (BMI <25). Overweight/obese women who self-evaluate as overweight may be more accurate in their appraisals and could be responding to the standards established by the medical community. On the other hand, normal weight women who self-evaluate as overweight are unlikely to be responding to medical standards.

As shown in the lower panel of Table 2, U.S.-born whites were the most likely to be normal weight, U.S.-born blacks the least likely, and Mexican women fell in between. Among normal weight women, we see the same pattern as among obese I and II women. The tendency to self-evaluate as overweight increased with U.S. exposure among Mexican women at all educational levels, converging or surpassing levels observed among white women, and diverging from U.S.-born black women. Overall, the descriptive analyses provide initial support for the hypothesis predicted by the social assimilation perspective.

Multivariate Models of Weight Self-evaluations

Support for the hypotheses predicted by the social assimilation perspective remained strong after employing more detailed measures of U.S. integration and controlling for socioeconomic and demographic factors (Table 3). We estimated five logistic regression models that predict overweight self-evaluation (1=overweight, 0=about the right weight/underweight) as a function of the five different indicators of U.S. integration. The models controlled for BMI weight category, educational attainment, whether a doctor ever said the respondent was overweight, and the other controls (not shown), and adjust for migration selection by employing the migration-adjusted weight.

All five specifications suggest that Mexican nationals and U.S.-born blacks have nearly identical odds of self-evaluating as overweight, and much lower odds than U.S.-born whites. Additionally, the least integrated Mexican women are significantly less likely than U.S.-born whites to evaluate themselves as overweight and exhibit similar levels as among Mexican nationals and U.S.-born blacks. However, Mexican women who are more socially integrated are more likely to evaluate themselves as overweight, and the most socially integrated Mexicans show patterns that are indistinguishable from U.S.-born whites. For example, Model 1 in Table 3 shows that both Mexican nationals and U.S.-born blacks are about 40 percent as likely as U.S.-born whites to self-evaluate as overweight (OR=0.39 and 0.40 for Mexican nationals and U.S.-born blacks, respectively), net of actual body-mass index and other controls. This difference narrows among Mexicans who only speak Spanish (OR = 0.64). As English becomes more dominant, the difference from U.S.-born whites steadily narrows and loses statistical significance. Models 2 and 3 (Table 2) show similar odds ratios for Mexican nationals and U.S.-born blacks, but make further distinctions among Mexicans,

again showing consistent patterns. Among foreign-born Mexicans, only those who speak only Spanish or more Spanish than English are significantly less likely to self-evaluate as overweight (Model 2, OR=0.63). Other foreign-born and U.S.-born Mexicans are not significantly different from U.S.-born whites (OR=0.85 and OR=1.26, respectively). Model 3 shows that the 1.0 generation (arrived age 20+) are significantly less likely than U.S.-born whites to self-evaluate as overweight (OR=0.58), while the 1.5 generation (arrived age 0–19) are not significantly different (OR=.80).

Models 4 and 5 further distinguish among Mexicans by generational status and the acculturation scale. Because the availability of these measures is limited to the 1999–2003 NHANES, we estimated these models on a smaller sample that excludes post-2003 NHANES data. Nevertheless, the results reiterate the other findings. Mexican women in Mexico and Mexican immigrant women at the beginning stages of the integration process had weight self-evaluations similar to those of U.S.-born blacks, but more socially integrated or U.S.-born women espoused weight norms similar to white women's.

Educational Differences

The acculturation pattern observed in Table 3 holds even among those with low educational attainment. To demonstrate this, we tested interaction effects between educational attainment and the five indicators of U.S. integration. Because group comparisons of logistic regression coefficients may be biased due to group differences in error variances (Allison 1999, Williams 2009), we estimated heterogeneous choice models to adjust for this potential problem (Williams 2010). The results were nearly identical to the standard logistic regression results, so we present the latter here. The interaction terms were statistically significant ($p<0.05$), indicating that U.S. integration patterns varied by level of education. The results were extremely similar across the integration indicators, so we only present results from the nativity and age at arrival combination (results available upon request). Predicted probabilities (generated from Stata's *margins* command) are plotted to interpret the interaction effects (Figure 1).

Consistent with the social assimilation hypothesis (H2b), the positive association between U.S. integration and overweight self-evaluations can be observed at all educational levels. Even among women with less than a high school degree, the tendency to self-evaluate as overweight was lowest among Mexican nationals and U.S.-born blacks, higher among Mexican 1.0 generation immigrants, still higher among 1.5 generation immigrants, and highest among U.S.-born Mexican and white women.

Testing Alternative Explanations

To explore whether these patterns might be driven by Mexican women's exposure to U.S. health messages or interactions with medical professionals, we examined whether the results differed across weight categories. We included interaction terms between women's CDC-defined weight category and the indicators of U.S. integration, following the same methodology as for the education interactions. The interaction terms were significant ($p<0.01$) and we graphed predicted probabilities in Figure 2. Similar to the earlier results, the probability of self-evaluating as overweight was positively associated with U.S. social

integration among Mexican women, either converging with U.S.-born whites or significantly exceeding them (among normal weight Mexican women). Post-estimation tests revealed that the group differences were statistically significant as a block among normal weight and overweight women, but weaker and insignificant among the two heaviest weight categories. Because we found strong U.S. integration effects among women who were not overweight by CDC definitions, it seems unlikely that Mexican women were adjusting their self-evaluations in response to U.S. health messages about weight. If U.S.-integrated, normal weight Mexican women were taking cues from U.S. health messages and adjusting their assessments to more accurately reflect U.S. standards, they would be less likely, not more likely, to say they are overweight.

As a final check, we re-estimated the models in Tables 3 and 4 on the subset of women who had never been told by a doctor that they were overweight ($N = 20,623$, or 81% of the original sample). The results were nearly identical (available upon request), further suggesting that interaction with the U.S. medical system is probably not driving the results.

Discussion

Our study explores how Mexicans' weight self-evaluations differ by level of U.S. integration, thus highlighting an important mental health dimension of the immigrant assimilation process. The racialization perspective suggests that assimilation processes may lead to a pattern in which Mexican immigrants' body size norms would remain stable (H1a), or possibly even converge with those held by other minority groups in the United States (H1b). On the other hand, the social assimilation perspective predicts that Mexicans' body size norms would converge to those of non-Hispanic white natives (H2a).

Consistent with the second hypothesis (H2a), social integration into the United States (as indicated by multiple indicators of acculturation: language, age-at-arrival, generational status, and an acculturation scale) was associated with the tendency of Mexicans to evaluate themselves as overweight. This pattern remained after accounting for respondents' actual BMI, interactions with the U.S. health care system, birth cohort, and other socio-demographic characteristics. Moreover, these basic patterns did not vary by educational attainment. Even among those who are presumably most at risk of a racialized process of assimilation (i.e., those with less than a high school education), we observed patterns of convergence by U.S. integration toward white women's weight norms and divergence from black women. It is possible that the racialization perspective is not well suited for understanding this particular integration process or that these data do not allow us to see how it is operating.

We cannot directly observe the mechanisms underlying these patterns. However, our supplemental analyses discount the idea that Mexican women adjust their weight evaluations in response to interactions with U.S. doctors about their weight status. Additionally, the results are inconsistent with the idea that Mexican women take cues about weight solely from family members and co-ethnics. As shown in Table 2, obesity prevalence increases with time in the U.S. among Mexicans, so they also become more likely to have obese friends and family members. If Mexicans took cues from co-ethnics, they would become

increasingly likely to see heavier body types as average and more likely to report themselves to be normal weight. But in fact, the opposite occurs.

One possibility is that Mexican women who are more integrated in the United States are more likely to make social comparisons with white women when constructing their body weight self-evaluations. Social comparison theory emphasizes that people do not evaluate themselves according to national or international standards, but rather, in relation to others in their social environment (Festinger 1954), and is often used by psychologists to explain weight self-evaluations and body dissatisfaction (Myers and Crowther 2009). Festinger (1954) distinguished between lateral comparisons with peers and upward comparisons with higher status groups, and argued that upward social comparisons involve social processes in which people *adjust* their opinions or judgments to match those held by groups they are most “attracted to” or wish to belong. This idea is similar to Alba and Nee’s (2003) description of how immigrants attempt to integrate with higher social status groups such as whites through acculturation (Alba and Nee 2003, Vallejo 2012). Interpreted in this light, the greater tendency to self-evaluate as overweight among more integrated Mexican women may come about because they have incentives to adjust their weight norms to match those held by non-Hispanic white women. This resembles other examples of how ethnic groups have attempted to “whiten” themselves (Loewen 1971). One poignant story was told by Domingo Martinez on “This American Life”, quoted at the beginning of this article, about how his sisters dyed their hair blond and changed their names, clothing, and conversation style in an exaggerated effort to present themselves as “rich and white” as possible.

On the whole, the results suggest that social assimilation processes are likely to take a toll on Mexican women’s mental health. The results are consistent with the negative health assimilation model which emphasizes that the immigrant health advantage declines over time by duration and generation (Abraido-Lanza, Chao and Florez 2005). Consistent with prior research on adult obesity among immigrants (Antecol and Bedard 2006, Kaushal 2009), our descriptive findings show a positive association of obesity with increasing U.S. exposure (measured by U.S. residence and birthplace) among Mexican women, and our main findings show that these changes are accompanied by growing body dissatisfaction among both normal and overweight/obese women. Such changes may cause significant psychological harm, particularly among normal weight women. Importantly, our findings revealed that the association of U.S. integration with overweight self-evaluations was strongest among *normal-weight* Mexican women. In fact, normal weight U.S.-born Mexican women were significantly *more likely* to say they were overweight than their white counterparts. This is concerning because normal and underweight people who evaluate themselves as overweight are more likely to be depressed, have low self-esteem, and have disordered eating (Atlantis and Ball 2008, Chang and Christakis 2003, Kunkel 1987, Raudenbush and Zellner 1997, Strauss 1999). This may be particularly acute for groups undergoing acculturation as acculturative stress is associated with body dissatisfaction among Mexican women in the U.S. (Perez et al. 2002).

Of course, it is important to keep in mind that over 70 percent of Mexican-origin women, regardless of what country they were born in or live, are already overweight or obese. Some suggest that overweight people who view themselves as overweight may be more responsive

to health messages or interventions designed to improve diet and reduce weight and would be more proactive against future weight gain (Post et al. 2011). However, other evidence suggests that social stigma associated with overweight and obesity may make it even more difficult to lose weight (Brewis 2014) and that efforts to lose weight often fail due to fad diets, unsustainable eating practices, and unhealthy cycles of losing and gaining weight (Mann et al. 2007). This criticism suggests that an increased tendency self-evaluate as overweight is unlikely to improve physical health for Mexican women. This debate reflects a tension between public health advocates who view health consequences of obesity and aim to reduce its prevalence and those who worry that interventions would serve only to be a source of discrimination and stigma. There is a need to develop interventions that reduce the health risks of obesity while also reducing stigma.

We note several limitations. First, we used cross-sectional data to deduce what are probably longitudinal processes. We extended beyond prior research by comparing cross-sectional samples of Mexicans living in both Mexico and the United States using a novel binational study design, but ideally we would follow immigrants as they move from Mexico to the United States to assess how their weight self-evaluations and weight changes over time. Second, we lacked measures to assess the mechanisms underlying the patterns we observe. Thus our ideas about the social comparison mechanisms remain speculative. Third, it is unclear whether the respondents were referring to an internal or external standard for evaluating their weight status or which group(s) one is using to assess weight appropriateness. Chang and Christakis also recognized this limitation: “One can recognize that one is considered overweight by overarching social standards, yet still personally consider one’s weight to be just right” (2003: 337). Finally, future research is needed to address self-evaluations among Mexican immigrant men; such analyses would need to examine body attributes that are relevant for men, such as height or muscular build.

Despite these caveats, our finding that with increasing U.S. integration Mexican women’s weight self-evaluations converge with those of white women and diverge from the patterns observed among black women is intriguing. It may reflect, in the words of Park and Burgess, “a process of interpenetration and fusion in which persons and groups acquire the memories, sentiments, and attitudes of other persons and groups” (1921). Although we find support for the new assimilation theory’s expectations, which predict acculturation toward more socially advantaged groups, the irony is that in the case of weight evaluations, this assimilation pathway does not lead to better mental health outcomes. Thus, the results provide a reminder that assimilation may be an inherently stressful social process for Mexican women that is deeply-personal and possibly psychologically harmful.

Appendix

Selective Migration and Weight Evaluations

We aimed to compare women living in Mexico with their counterparts living in the United States. We could not simply compare all women in Mexico with Mexican-born women in the United States because migration is not a random process. In particular, weight self-evaluations are likely to vary among Mexican women and may be related to the likelihood of

migration. Here, we first discuss how weight self-evaluations among Mexican women are likely to be related to migration, and we then explain how we adjusted our estimates for these anticipated selection effects.

We anticipated that two groups of Mexican women would be particularly likely to see themselves as overweight. The first consists of women who are very unlikely to migrate to the United States. Many such women reside in urban areas, have little incentive to migrate because of their access to labor and consumer markets, and may also be exposed to international media and standards of beauty, which are rapidly emphasizing thinness. The second group consists of women who have a very high likelihood of migrating. Many such women live in localities with very high levels of international migration, and like the first group, may be exposed to U.S. media and preferences for thinness. In contrast, we anticipate that women with moderate probabilities of living in a migrant-sending household may have limited exposure to international media and to U.S. cultural norms, and therefore may be less likely to report that they are overweight.

To explore this issue empirically, we first estimated the likelihood of living in a migrant-sending household among women in Mexico, which is highly predictive of actual migration (Massey, Durand, and Malone 2002). The ENSANUT does not indicate the migration status of respondents' households, so we had to estimate it based on Mexican Census data. Specifically, we identified migrant-sending households in the Mexican Census as those containing at least one member who is currently living in the United States or who lived in the United States five years earlier. We estimated a logistic regression model predicting household migration status for women ages 20–64. The independent variables included age, age-squared, age-cubed, marital status, educational attainment, the percentage of U.S. immigrants in the municipio and its interaction with educational attainment, health insurance coverage, municipio population size (logged) and state (coefficients and odds ratios shown in Table A1). We next used the coefficients from this model to estimate the predicted probability for women in the ENSANUT (probabilities ranged from 0 to 0.47). Women in non-migrant households were tightly clustered around a very low probability (around 0.05), while women in migrant households were more represented at moderate and high probabilities.

After generating the predicted probability of living in a migrant-sending household, we used this variable in three different ways: (1) as an independent variable in logistic regression models to explore how migration selectivity is associated with weight evaluations; (2) as a way to limit the sample to those who are most likely to migrate; and (3) as a way to weight the Mexican sample so that it better represents those who are most likely to migrate. The results are shown in Table A2.

The logistic regression model predicting overweight self-evaluations among Mexican residents only (Model 1) includes the probability of living in a migrant household and controls for BMI, BMI-squared, marital status, age, birth cohort, health insurance, and smoking status (coefficients for controls not shown). As expected, the odds of self-evaluating as overweight was higher among both those with a low migration probability (i.e.,

<0.20) and those with the highest migration probability (0.35), but lower among those with moderate probabilities.

Next, we explored how the results differed when we dropped from the sample Mexican women with the lowest probability of living in a migrant-sending household. As a baseline, Model 2 was estimated on all Mexican and U.S. women (i.e, the pooled ENSANUT-NHANES), and indicated that Mexican residents were 35 percent as likely to self-evaluate as overweight as U.S.-born white women. However, when we excluded Mexican women with a migration probability less than 0.1 from the sample (Model 3), the results showed an even larger gap, with Mexican residents only 30 percent as likely to self-evaluate as overweight. When we further restricted the sample and excluded Mexican women with probabilities less than 0.2 (Model 4) and less than 0.3 (Model 5), the odds ratio for Mexican residents was even lower (0.26 and 0.24 respectively). Finally, we weighted the model by a migration-adjusted weight, which was constructed as the sampling weight multiplied by the probability of living in migrant-sending household. After applying this weight in Model 6, Mexican residents were only 31 percent as likely as U.S.-born white women to self-evaluate as overweight, which was less than if we had included all Mexican women in the sample. Because we found evidence that women who are selected into migration streams are less likely to self-evaluate as overweight, we applied the migration-adjusted weight in all subsequent analyses.

Table A1

Model Predicting Living in a Migrant-sending Household, Mexican Women, 2000 (logistic regression coefficients and odds ratios)

	B	Odds Ratio
Age	-0.352***	0.703
-squared	0.009***	1.009
-cubed	0.000***	1.000
Married	-0.028***	0.972
9-11th grade	0.002	1.002
High School Graduate	0.005	1.005
College Graduate	0.140***	1.150
% Migrants in Municipio	0.409***	1.505
× 9-11th grade	-0.018***	0.982
× High School Graduate	-0.083***	0.920
× College Graduate	-0.172***	0.842
% Migrants in Municipio-Square	-0.016***	0.984
× 9-11th grade	0.002***	1.002
× High School Graduate	0.006***	1.006
× College Graduate	0.010***	1.010
Has Health Insurance	-0.291***	0.748
Municipio Population (logged)	0.021***	1.021
Intercept	1.214***	3.367

	B Odds Ratio
Number	2,545,981
Pseudo R-squared	0.08

Source: 2000 Mexican Census (10% sample; IPUMS-International)

Sample: Women ages 20–64 living in Mexico.

Note: Model includes state fixed effects.

Table A2

Selective Migration and Overweight Self-classification (logistic regression odds ratios)

		Pooled Mexico & U.S. Samples					
	Mexico Sample Only	All Women	Sample Excludes Mexican Residents with Probability of Living in Migrant-sending HH:			All women, Migration weight	
	Model 1	Model 2	< 0.1	< 0.2	< 0.3	Model 6	
Probability of Living in a Migrant-sending Household (REF = <0.05)							
0.05 – 0.09	1.40***	—	—	—	—	—	
0.10 – 0.14	1.34**	—	—	—	—	—	
0.15 – 0.19	1.31*	—	—	—	—	—	
0.20 – 0.24	1.23	—	—	—	—	—	
0.25 – 0.29	1.20	—	—	—	—	—	
0.30 – 0.34	1.35	—	—	—	—	—	
0.35 – 0.39	1.73 +	—	—	—	—	—	
0.40+	1.65**	—	—	—	—	—	
Country, Generation, and Race/ethnicity (REF = US-born Whites)							
Mexican Residents	—	0.35***	0.30***	0.26***	0.24***	0.31***	
Mexican Immigrants	—	0.71***	0.63***	0.60***	0.58***	0.62***	
US-born Mexicans	—	1.07	1.07	1.08	1.08	1.08	
US-born Blacks	—	0.35***	0.35***	0.33***	0.32***	0.33***	
N	17,248	26,069	14,063	10,503	9,432	26,069	

* p<.05

** p<.01

*** p<.001

Note: Models control for BMI, BMI-squared, marital status, age, birth cohort, health insurance, and smoking status.

Source and Sample: See Table 2

References

- Abraido-Lanza, Ana F., Chao, Maria T., Florez, Karen R. Do Healthy Behaviors Decline with Greater Acculturation?: Implications for the Latino Mortality Paradox. *Social Science & Medicine*. 2005; 61(6):1243–55. [PubMed: 15970234]
- Ahluwalia, Indu B., Ford, Earl S., Link, Micheal, Bolen, Julie C. Acculturation, Weight, and Weight-Related Behaviors among Mexican Americans in the United States. *Ethnicity & Disease*. 2007; 17:643–49. [PubMed: 18072373]
- Akresh, Ilana Redstone. Overweight and Obesity among Foreign-Born and Us-Born Hispanics. *Biodemography and Social Biology*. 2008; 54(2):183–99. [PubMed: 19350754]

- Alba, R., Nee, V. *Remaking the American Mainstream: Assimilation and Contemporary Immigration*. Cambridge: Harvard University Press; 2003.
- Alba, Richard, Kasinitz, Philip, Waters, Mary C. Commentary: The Kids Are (Mostly) Alright: Second-Generation Assimilation: Comments on Haller, Portes and Lynch. *Social Forces*. 2011; 89(3):763–73.
- Alegría, Margarita, Mulvaney-Day, Norah, Torres, Maria, Polo, Antonio, Cao, Zhun, Canino, Glorisa. Prevalence of Psychiatric Disorders across Latino Subgroups in the United States. *American Journal of Public Health*. 2007; 97(1):68–75. [PubMed: 17138910]
- Allan, Janet D., Mayo, Kelly, Michel, Yvonne. Body Size Values of White and Black Women. *Research in Nursing & Health*. 1993; 16(5):323–33. [PubMed: 8210470]
- Allison, Paul D. Comparing Logit and Probit Coefficients across Groups. *Sociological methods & research*. 1999; 28(2):186–208.
- Altman, Claire E., Van Hook, Jennifer, Hillemeier, Marianne. *The Association of Obesity and Self-Rated Health across Periods and Cohorts*. 2013
- Antecol, Heather, Bedard, Kelly. Unhealthy Assimilation: Why Do Immigrants Converge to American Health Status Levels? *Demography*. 2006; 43(2):337–60. [PubMed: 16889132]
- Argeseanu Cunningham, Solveig, Ruben, Julia D., Venkat Narayan, KM. Health of Foreign-Born People in the United States: A Review. *Health & place*. 2008; 14(4):623–35. [PubMed: 18242116]
- Atlantis E, Ball K. Association between Weight Perception and Psychological Distress. *International Journal of Obesity*. 2008; 32:715–21. [PubMed: 18408736]
- Bhugra, Dinesh. Migration and Mental Health. *Acta Psychiatrica Scandinavica*. 2004; 109(4):243–58. [PubMed: 15008797]
- Borjas, George. *Mexican Immigration to the United States*. Chicago: University of Chicago Press; 2007.
- Breslau, Joshua, Aguilar-Gaxiola, Sergio, Borges, Guilherme, Kendler, Kenneth S., Su, Maxwell, Kessler, Ronald C. Risk for Psychiatric Disorder among Immigrants and Their Us-Born Descendants: Evidence from the National Comorbidity Survey-Replication. *The Journal of nervous and mental disease*. 2007; 195(3):189. [PubMed: 17468677]
- Brewis, Alexandra A. Stigma and the Perpetuation of Obesity. *Social Science & Medicine*. 2014; 118:152–58. [PubMed: 25124079]
- Cachelin, Fary M., Rebeck, Ramona, Chung, Grace, Pelayo, E. Does Ethnicity Influence Body-Size Preference? A Comparison of Body Image and Body Size. *Obesity Research*. 2002; 10(3):158–66. [PubMed: 11886938]
- Cachelin, Fary M., Monreal, Teresa K., Juarez, Laura C. Body Image and Size Perceptions of Mexican American Women. *Body Image*. 2006; 3:67–75. [PubMed: 18089210]
- Caldwell, Melissa B., Brownell, Kelly D., Wilfley, Denise E. Relationship of Weight, Body Dissatisfaction, and Self-Esteem in African American and White Female Dieters. *International Journal of Eating Disorders*. 1997; 22:127–30. [PubMed: 9261649]
- Cash, Thomas F., Brown, Timothy A. Gender and Body Images: Stereotypes and Realities. *Sex Roles*. 1989; 21(5–6):361–73.
- Cawley, John. The Impact of Obesity on Wages. *Journal of Human resources*. 2004; 39(2):451–74.
- Centers for Disease Control and Prevention. *About Bmi for Adults*. Atlanta, GA: Centers for Disease Control and Prevention; 2011. 2011
- Chamorro, Rebeca, Flores-Ortiz, Yvette. Acculturation and Disordered Eating Patterns among Mexican American Women. *International Journal of Eating Disorders*. 2000; 28(1):125–29. [PubMed: 10800023]
- Chang, Virginia W., Christakis, Nicholas A. Self-Perception of Weight Appropriateness in the United States. *American Journal of Preventive Medicine*. 2003; 24(4):332–39. [PubMed: 12726871]
- Christakis, Nicholas A., Fowler, James. The Spread of Obesity in a Large Social Network over 32 Years. *The New England Journal of Medicine*. 2007; 357(4):370–79. [PubMed: 17652652]
- Counihan CM. Food Rules in the United States: Individualism, Control, and Hierarchy. *Anthropological Quarterly*. 1992; 65(2):55–66.

- Crago, Marjorie, Shisslak, Catherine M., Estes, Linda S. Eating Disturbances among American Minority Groups: A Review. *International Journal of Eating Disorders*. 1996; 19(3):239–48. [PubMed: 8704722]
- Crandall, Christian S., Martinez, Rebecca. Culture, Ideology, and Anti-Fat Attitudes. *Personality and Social Psychology Bulletin*. 1996; 22:1165–76.
- Drumond Andrade, Flavia C., Raffaelli, Marcela, Teran-Garcia, Margarita, Jerman, Jilber. Weight Status Misperception among Mexican Young Adults. *Body Image*. 2012; 9(1):184–88. [PubMed: 22104126]
- Festinger, Leon. A Theory of Social Comparison Processes. *Human Relations*. 1954; 7(2):117–40.
- Fitzgibbon ML, Blackman LR, Avellone ME. The Relationship between Body Image Discrepancy and Body Mass Index across Ethnic Groups. *Obesity Research*. 2000; 8:582–89. [PubMed: 11156434]
- Flegal, Katherine, Carroll, Margaret, Ogden, Cynthia. Prevalence and Trends in Obesity among Us Adults, 1999–2008. *Journal of the American Medical Association*. 2010; 303(3):235–41. [PubMed: 20071471]
- Flegal, Katherine M., Carroll, Margaret D., Ogden, Cynthia L., Curtin, Lester R. Prevalence and Trends in Obesity among Us Adults, 1999–2008. *JAMA: the journal of the American Medical Association*. 2010; 303(3):235–41. [PubMed: 20071471]
- Flegal, Katherine M., Carroll, Margaret D., Kit, Brian K., Ogden, Cynthia L. Prevalence of Obesity and Trends in the Distribution of Body Mass Index among Us Adults, 1999–2010. *JAMA: the journal of the American Medical Association*. 2012; 307(5):491–97. [PubMed: 22253363]
- Freese, Jeremy, Lutfey, Karen. Fundamental Causality: Challenges of an Animating Concept for Medical Sociology. In: Pescosolido, B.Martin, J.McLeod, J., Rogers, A., editors. *The Handbook of the Sociology of Health, Illness, and Healing*. New York: Springer Publishing; 2011. p. 67–81.
- French, Simone, Jeffery, Robert. Weight Concerns and Smoking: A Literature Review. *Annals of Behavioral Medicine*. 1995; 17(3):234–44. DOI: 10.1007/bf02903918 [PubMed: 24203535]
- Frisco, Michelle L., Houle, Jason N., Martin, Molly A. The Image in the Mirror and the Number on the Scale: Weight, Weight Perceptions, and Adolescent Depressive Symptoms. *Journal of Health and Social Behavior*. 2010; 51(2):215–28. [PubMed: 20617760]
- Garcia Calderon, Carola. Nuevas Representaciones Femeninas En Los Medios De Comunicación En México. *Revista Teorica del Departamento de Ciencias de la Comunicacion y de la informacion, Univiersidad de Playa Ancha*. 2008; 4(8):1–6.
- Goel, Mita Sanghavi, McCarthy, Ellen P., Phillips, Russell S., Wee, Christina C. Obesity among Us Immigrant Subgroups by Duration of Residence. *JAMA*. 2004; 292(23):2860–67. DOI: 10.1001/jama.292.23.2860 [PubMed: 15598917]
- Gordon, Kathryn H., Castro, Yessenia, Sitnikov, Lilya, Holm-Denoma, Jill M. Cultural Body Shape Ideals and Eating Disorder Symptoms among White, Latina, and Black College Women. *Cultural Diversity and Ethnic Minority Psychology*. 2010; 16(2):135–43. [PubMed: 20438151]
- Grabe, Shelly, Hyde, Janet Shibley. Ethnicity and Body Dissatisfaction among Women in the United States: A Meta-Analysis. *Psychological Bulletin*. 2006; 132(4):622–40. [PubMed: 16822170]
- Haller, William, Portes, A., Lynch, Scott M. Dreams Fulfilled, Dreams Shattered: Determinants of Segmented Assimilation in the Second Generation. *Social Forces*. 2011; 89(3):733–62.
- Hunt, Linda M., Suzanne, Schneider, Brendon, Comer. Should “Acculturation” Be a Variable in Health Research? A Critical Review of Research on Us Hispanics. *Social Science & Medicine*. 2004; 59(5):973–86. [PubMed: 15186898]
- Huntington, Samuel. *Who Are We: The Challenges to America’s National Identity*. New York: Simon & Schuster; 2004.
- Jasso, Guillermina, Massey, Douglas S., Rosenzweig, Mark R., Smith, James P. Immigrant Health: Selectivity and Acculturation. In: Anderson, NB.Bulatao, RA., Cohen, B., editors. *Critical Perspectives on Racial and Ethnic Differences in Health in Late Life*. Washington, DC: National Academies Press; 2004. p. 227–66.
- Johnsen, Lisa, Spring, Bonnie, Pingitore, Regina, Somerfeld, Beth K. Smoking as Subculture? Influence on Hispanic and Non-Hispanic White Women’s Attitudes toward Smoking and Obesity. *Health Psychology*. 2002; 21(3):279–87. [PubMed: 12027034]

- Kasinitz, Philip, Mollenkopf, John H., Waters, Mary C., Holdaway, Jennifer. *Inheriting the City: The Second Generation Comes of Age*. Cambridge, MA: Harvard University Press; 2008.
- Kaushal, Neeraj. Adversities of Acculturation? Prevalence of Obesity among Immigrants. *Health Economics*. 2009; 18(3):291–303. [PubMed: 18464286]
- Kemper, Karen A., Sargent, Roger A., Drane, J Wanzer, Valois, Robert F., Hussey, James R. Black and White Females' Perceptions of Ideal Body Size and Social Norms. *Obesity Research*. 1994; 2:117–26. [PubMed: 16353613]
- Kunkel ME. Body Weight Perceptions, Body Mass Index, and Dieting Practices of South Carolina Adults. *Journal of the American Dietetic Association*. 1987; 87(9):1217–18. [PubMed: 3624712]
- Lee, Jennifer, Bean, Frank D. *The Diversity Paradox: Immigration and the Color Line in Twenty-First Century America*. New York: Russell Sage Foundation; 2010.
- Loewen, James. *The Mississippi Chinese: Between Black and White*. Cambridge, MA: Harvard University Press; 1971.
- Lopez, Ester, Blix, Glen Garry, Blix, Arlene Gray. Body Image of Latinas Compared to Body Image of Non-Latina White Women. *Health Values: The Journal of Health Behavior, Education & Promotion*. 1995; 19(6):3–10.
- Lovejoy, Meg. Disturbances in the Social Body: Differences in Body Image and Eating Problems among African American and White Women. *Gender and Society*. 2001; 15(2):239–61.
- Mann T, Tomiyama AJ, Westling E, Lew AM. Medicare's Search for Effective Obesity Treatments: Diets Are Not the Answer. *American Psychologist*. 2007; 62(3):220–33. [PubMed: 17469900]
- Massey, Douglas S., Durand, Jorge, Malone, Nolan. *Beyond Smoke and Mirrors: Mexican Immigration in an Era of Economic Integration*. New York: Russell Sage Foundation Publications; 2002.
- McLaren, Lindsay. Socioeconomic Status and Obesity. *Epidemiologic Reviews*. 2007; 28(1):29–48.
- Myers, Taryn A., Crowther, Janis H. Social Comparison as a Predictor of Body Dissatisfaction: A Meta-Analytic Review. *Journal of Abnormal Psychology*. 2009; 118(4):683–98. [PubMed: 19899839]
- National Institute for Health. *The Practical Guide: Identification, Evaluation, and Treatment of Overweight and Obesity in Adults*. 2000 Vol.
- Nicklett, Emily J., Burgard, Sarah A. Downward Social Mobility and Major Depressive Episodes among Latino and Asian-American Immigrants to the United States. *American Journal of Epidemiology*. 2009; 170(6):793–801. [PubMed: 19671834]
- Ofofu HB, Lafreniere KD, Senn CY. Body Image Perception among Women of African Descent: A Normative Context? *Feminism & Psychology*. 1998; 8(3):303–23.
- Ortega, Alexander N., Rosenheck, Robert, Alegria, Margarita, Desai, Rani A. Acculturation and the Lifetime Risk of Psychiatric and Substance Use Disorders among Hispanics. *The Journal of nervous and mental disease*. 2000; 188(11):728–35. [PubMed: 11093374]
- Oza-Frank, Reena, Cunningham, Solveig A. The Weight of Us Residence among Immigrants: A Systematic Review. *Obesity Reviews*. 2010; 11(4):271–80. [PubMed: 19538440]
- Paeratakul, Sahaspor, White, Marney A., Williamson, Donald A., Ryan, Donna H., Bray, George A. Sex, Race/Ethnicity, Socioeconomic Status, and Bmi in Relation to Self-Perception of Overweight. *Obesity Research*. 2002; 10(5):345–50. [PubMed: 12006633]
- Park, Robert E., Burgess, Ernest W. *Introduction to the Science of Sociology*. Chicago: University of Chicago Press; 1921.
- Perez M, Voelz ZR, Pettit JW, Joiner TE. The Role of Acculturative Stress and Body Dissatisfaction in Predicting Bulimic Symptomatology across Ethnic Groups. *International Journal of Eating Disorders*. 2002; 31:442–54. [PubMed: 11948649]
- Perreira, Krista, Kathleen, Harris, Lee, D. Making It in America: High School Completion by Immigrant and Native Youth. *Demography*. 2006; 43(3):511–36. [PubMed: 17051825]
- Pompper, Donnaly, Koenig, Jessica. Cross-Cultural-Generational Perceptions of Ideal Body Image: Hispanic Women and Magazine Standards. *Journalism and Mass Communication Quarterly*. 2004; 81(1):89–107.

- Poran, Maya. Denying Diversity: Perceptions of Beauty and Social Comparison Processes among Latina, Black, and White Women. *Sex Roles*. 2002; 47(1/2):65–81.
- Portes A, Zhou M. The New Second Generation: Segmented Assimilation and Its Variants. *Annals of the American Academy of Political and Social Science*. 1993; 530:74–96.
- Portes A, Fernandez-Kelly Patricia, Haller William. Segmented Assimilation on the Ground: The New Second Generation in Early Adulthood. *Ethnic and Racial Studies*. 2005; 28(6):1000–40.
- Portes A. Migration, Development, and Segmented Assimilation: A Conceptual Review of the Evidence. *The Annals of the American Academy of Political and Social Science*. 2007; 610(1):73–97.
- Post, Robert E., Mainous, Arch G., Gregorie, Seth H., Knoll, Michele, Diaz, Vanessa A., Saxena, Sonia. The Influence of Physician Acknowledgement of Patients' Weight Status on Patient Perceptions of Overweight and Obesity in the United States. *Archives of Internal Medicine*. 2011; 171(4):316–21. [PubMed: 21357807]
- Raudenbush, Bryan, Zellner, Debra A. Nobody's Satisfied: Effects of Abnormal Eating Behaviors and Actual and Perceived Weight Status on Body Image Satisfaction in Males and Females. *Journal of Social and Clinical Psychology*. 1997; 16(1):95–110.
- Roberts, Alan, Cash, Thomas F., Feingold, Alan, Johnson, Blair T. Are Black-White Differences in Females' Body Dissatisfaction Decreasing? A Meta-Analytic Review. *Journal of Consulting and Clinical Psychology*. 2006; 74(6):1121–31. [PubMed: 17154741]
- Root, Maria P. Disordered Eating in Women of Color. *Sex Roles*. 1990; 22:525–36.
- Ruggles, Steven, Alexander, J Trent, Goeken, Ronald, Genadek, Katie, Schroeder, Matthew B., Sobek, Matthew. Integrated Public Use Microdata Series, Current Population Survey: Version 3.0. U. o. Minnesota. Minneapolis. , editor. 2010.
- Saguy, Abigail C. What's Wrong with Fat?. New York: Oxford University Press; 2013.
- Saguy, Abigail C., Gruys, Kjerstin. Morality and Health: News Media Constructions of Overweight and Eating Disorders. *Social Problems*. 2010; 57(2):231–50.
- Salas-Wright, Christopher P., Kagotho, Njeri, Vaughn, Michael G. Mood, Anxiety, and Personality Disorders among First and Second-Generation Immigrants to the United States. *Psychiatry research*. 2014
- Sanchez-Vaznaugh, Emma V., Kawachi, Ichiro, Subramanian, SV., Sánchez, Brisa N., Acevedo-Garcia, Dolores. Differential Effect of Birthplace and Length of Residence on Body Mass Index (Bmi) by Education, Gender and Race/Ethnicity. *Social Science & Medicine*. 2008; 67(8):1300–10. doi: <http://dx.doi.org/10.1016/j.socscimed.2008.06.015>. [PubMed: 18657344]
- Sánchez-Vaznaugh, Emma V., Kawachi, Ichiro, Subramanian, SV., Sánchez, Brisa N., Acevedo-Garcia, Dolores. Do Socioeconomic Gradients in Body Mass Index Vary by Race/Ethnicity, Gender, and Birthplace? *American Journal of Epidemiology*. 2009; 169(9):1102–12. [PubMed: 19299405]
- Sobal, Jeffery, Stunkard, Albert J. Socioeconomic Status and Obesity: A Review of the Literature. *Psychological Bulletin*. 1989; 105(2):260–75. [PubMed: 2648443]
- Strauss RS. Self-Reported Weight Status and Dieting in a Cross-Sectional Sample of Young Adolescents: National Health and Nutrition Examination Survey Iii. *Archives of Pediatrics & Adolescent Medicine*. 1999; 153:741–47. [PubMed: 10401809]
- Telles, Edward E., Ortiz, Vilma. *Generations of Exclusion*. New York: Russell Sage Foundation; 2008.
- Thompson, Becky W. *A Hunger So Wide and Deep: A Multiracial View of Women's Eating Problems*. Minneapolis: University of Minnesota Press; 1994.
- U.S. Bureau of the Census. Summary File 1. 2010
- Valdez, Zulema. Segmented Assimilation among Mexicans in the Southwest. *The Sociological Quarterly*. 2006; 47(3):397–424.
- Vallejo, Jody Agius. Socially Mobile Mexican Americans and the Minority Culture of Mobility. *American Behavioral Scientist*. 2012; 56(5):666–81.
- Van Hook, Jennifer, Baker, Elizabeth, Altman, Claire E., Frisco, Michelle L. Canaries in a Coalmine: Immigration and Overweight among Mexican-Origin Children in the Us and Mexico. *Social Science & Medicine*. 2012; 74(2):125–34. [PubMed: 22153862]

- Vega, William A., Kolody, Bohdan, Aguilar-Gaxiola, Sergio, Alderete, Ethel, Catalano, Ralph, Caraveo-Anduaga, Jorge. Lifetime Prevalence of Dsm-Iii-R Psychiatric Disorders among Urban and Rural Mexican Americans in California. *Archives of General Psychiatry*. 1998; 55(9):771–78. [PubMed: 9736002]
- Viladrich, Anahí, Yeh, Ming-Chin, Bruning, Nancy, Weiss, Rachael. “Do Real Women Have Curves?” Paradoxical Body Images among Latinas in New York City. *Journal of Immigrant Minority Health*. 2009; 11:20–28. [PubMed: 18807271]
- Williams, Richard. Using Heterogeneous Choice Models to Compare Logit and Probit Coefficients across Groups. *Sociological methods & research*. 2009; 37(4):531–59.
- Williams, Richard. Fitting Heterogeneous Choice Models with Oglm. *Stata Journal*. 2010; 10(4):540–67.
- Winkleby MA, Gardner CD, Taylor CB. The Influence of Gender and Socioeconomic Factors on Hispanic/White Differences in Body Mass Index. *PREVENTIVE MEDICINE*. 1996; 25:203–211. [PubMed: 8860286]
- Zhang, Qi, Wang, Youfa. Trends in the Association between Obesity and Socioeconomic Status in U.S. Adults: 1971 to 2000. *Obesity Research*. 2004; 12(10):1622–32. [PubMed: 15536226]

Figure 1.

Predicted Percentage Self-classifying as Overweight by Country of residence, Nativity, Age at Arrival, and Educational Attainment

^asignificantly different from U.S.-born Whites

Figure 2.

Predicted Percentage Self-classifying as Overweight by Country of residence, Nativity, Age at Arrival, and BMI Category

^asignificantly different from U.S.-born Whites

Table 1
Descriptive Statistics of Analytic Sample, by Country of Residence, Race/ethnicity, and Nativity

	Pooled Sample (ENSANUT & NHANES)	US Residents (NHANES)			
		Mexican Nationals (ENSANUT)	Mexican Immigrants	US-born Mexicans	US-born Whites
All Women (N)	25,499	17,012	1,320	904	2,005
Self-Evaluated as Overweight (%)	59.0	54.1	65.0	75.7	69.0
CDC Weight Category based on BMI					
Overweight or Obese, BMI ≥ 25 (%)	69.6	72.6	74.3	72.8	79.6
Overweight, 25 ≤ BMI < 30 (%)	34.0	37.5	36.2	28.3	26.5
Obese I, 30 ≤ BMI < 35 (%)	21.5	23.1	23.6	24.2	24.2
Obese II, BMI ≥ 35 (%)	14.0	12.0	14.5	20.3	28.9
Doctor ever told R she was overweight (%)	19.2	10.8	30.9	36.7	41.7
1.0 Generation (arrived age 20+) (%)	—	—	57.4	—	—
Language Spoken at Home (%)					
Only Spanish	—	—	70.4	4.7	—
More Spanish than English	—	—	14.6	6.1	—
Both Equally	—	—	8.9	20.3	—
More English than Spanish	—	—	4.0	26.6	—
Only English	—	—	2.1	42.3	—
Age (mean)	39.7	38.6	37.9	37.6	40.6
Decade of birth (%)					
Before 1950	11.3	7.9	9.2	12.0	15.1
1950s	19.6	16.6	16.6	18.8	24.7
1960s	25.6	25.9	30.9	20.6	25.5
1970s	25.6	28.1	29.9	31.1	22.5
1980s	17.9	21.5	13.4	17.5	12.3
Married (%)	55.8	55.5	61.8	48.4	29.5
Education (%)					
Less Than High School	39.8	51.6	66.3	25.3	24.7
High school Degree or Some College	23.4	23.0	15.7	26.6	24.4
College Degree	36.8	25.4	18.0	48.1	50.9

	Pooled Sample (ENSANUT & NHANES)	US Residents (NHANES)			
		Mexican Nationals (ENSANUT)	Mexican Immigrants	US-born Mexicans	US-born Whites
Has Health Insurance (%)	60.0	49.4	38.1	70.1	78.3
Smoking Status (%)					
Current Smoker	14.3	9.2	9.7	17.7	25.2
Former Smoker	10.4	5.5	9.6	15.0	11.9
Never Smoked	75.3	85.3	80.7	67.3	62.9
					85.4
					25.9
					22.4
					51.6

Source: NHANES (1999–2009) and ENSANUT 2006

Sample: Non-pregnant women ages 20–64 living in the United States or Mexico. U.S. residents are restricted to Mexican-born immigrants, US-born Mexicans, US-born whites, and US-born blacks.

Table 2

Group and Educational Differences in Weight and Weight Self-Evaluations

	All	Less than High School	High School	More Than High School
<u>% Obese I or Obese II (BMI ≥ 30)</u>				
Mexican Nationals	35.1	40.1	33.0	26.6
Mexican-born Immigrants	38.1	41.3	28.7	34.9
U.S.-born Mexicans	44.5	49.5	41.9	43.4
U.S.-born Blacks	53.1	54.0	52.9	52.8
U.S.-born Whites	33.1	41.9	37.5	29.9
<u>% Self-reported as Overweight Among Obese I or Obese II Women</u>				
Mexican Nationals	83.5	79.0	88.5	91.8
Mexican-born Immigrants	89.5	87.0	97.6	95.0
U.S.-born Mexican	94.9	94.7	93.6	95.8
U.S.-born Blacks	90.2	83.0	88.8	94.4
U.S.-born Whites	97.5	94.3	98.0	98.0
<u>% Normal-Weight Women (BMI < 25)</u>				
Mexican Nationals	27.4	21.8	29.7	36.5
Mexican-born Immigrants	25.7	21.2	36.2	33.0
U.S.-born Mexican	27.2	21.4	24.3	31.8
U.S.-born Blacks	20.4	20.5	19.5	20.7
U.S.-born Whites	40.5	30.4	36.4	43.8
<u>% Self-reported as Overweight Among Normal-weight Women</u>				
Mexican Nationals	15.8	10.6	20.7	18.5
Mexican-born Immigrants	22.5	20.3	31.2	19.4
U.S.-born Mexican	39.0	27.6	43.6	41.1
U.S.-born Blacks	15.0	7.1	17.7	17.6
U.S.-born Whites	34.8	28.9	36.9	34.8

Source and Sample: See Table 1

Table 3
Association between various indicators of U.S. social integration and overweight self-classification (logistic regression odds ratios)

	Model 1	Model 2	Model 3	Model 4	Model 5
<u>Country, Race/ethnicity, and Language Usage (REF = U.S.-born Whites)</u>					
Mexican Nationals	0.39 ^{***, b}	—	—	—	—
Mexicans (FB & USB)					
Only Spanish	0.60 ^{***, a}	—	—	—	—
More Spanish than English	0.68 ^{*, a}	—	—	—	—
Both Equally	0.94 ^{a, b}	—	—	—	—
More English than Spanish	1.06 ^{a, b}	—	—	—	—
Only English	1.27 ^{a, b}	—	—	—	—
U.S.-born Blacks	0.40 ^{***, b}	—	—	—	—
<u>Country, Race/ethnicity, Nativity, and Language (REF = U.S.-born Whites)</u>					
Mexican Nationals	—	0.39 ^{***, b}	—	—	—
Mexican-born, Only/More Spanish than Eng.	—	0.60 ^{***, a}	—	—	—
Other Mexican-born	—	0.83 ^a	—	—	—
U.S.-born Mexican	—	1.13 ^{a, b}	—	—	—
U.S.-born Blacks	—	0.40 ^{***, b}	—	—	—
<u>Country, Race/ethnicity, Nativity, and Age at Arrival (REF = U.S.-born Whites)</u>					
Mexican Nationals	—	—	0.39 ^{***, b}	—	—
Mexican-born, 1.0 generation	—	—	0.54 ^{***, a}	—	—
Mexican-born, 1.5 generation	—	—	0.80 ^{a, b}	—	—
U.S.-born Mexican	—	—	1.14 ^{a, b}	—	—
U.S.-born Blacks	—	—	0.40 ^{***, b}	—	—
<u>Country, Race/ethnicity, and Generation (REF = U.S.-born Whites)</u>					
Mexican Nationals	—	—	—	0.33 ^{***, b}	—
Mexican-born, 1.0 generation	—	—	—	0.57 ^{***, a}	—
Mexican-born, 1.5 generation	—	—	—	0.79 ^{a, b}	—

	Model 1	Model 2	Model 3	Model 4	Model 5
2nd Generation Mexican	—	—	—	1.26 ^{a, b}	—
3rd+ Generation Mexican	—	—	—	1.36 ^a	—
U.S.-born Blacks	—	—	—	0.41 ^{***}	—
<u>Country, Race/ethnicity, & Acculturation (REF = U.S.-born Whites)</u>					
Mexican Nationals	—	—	—	—	0.32 ^{***, b}
Mexicans (FB & USB)	—	—	—	—	0.58 ^{***, a}
Lowest Acculturation (1)	—	—	—	—	0.86 ^a
Low Acculturation (2)	—	—	—	—	1.16 ^{a, b}
Moderate Acculturation (3)	—	—	—	—	1.22 ^{a, b}
High Acculturation (4)	—	—	—	—	1.51 ^{a, b}
Highest Acculturation (5)	—	—	—	—	0.41 ^{***}
U.S.-born Blacks	—	—	—	—	—
<u>Key Controls</u>					
<u>Weight Category (REF = Normal Weight)</u>					
Overweight (25 BMI < 30)	9.19 ^{***}	9.17 ^{***}	9.18 ^{***}	8.38 ^{***}	8.40 ^{***}
Obese I (30 BMI < 35)	27.30 ^{***}	27.22 ^{***}	27.28 ^{***}	27.90 ^{***}	27.97 ^{***}
Obese II (BMI ≥ 35)	62.21 ^{***}	62.08 ^{***}	62.16 ^{***}	72.08 ^{***}	72.17 ^{***}
Doctor ever told R she was overweight	2.67 ^{***}	2.67 ^{***}	2.67 ^{***}	2.74 ^{***}	2.74 ^{***}
Less Than High School	0.52 ^{***}	0.52 ^{***}	0.52 ^{***}	0.52 ^{***}	0.53 ^{***}
High School	0.99	0.99	0.99	1.01	1.01
N	25,499	25,499	25,499	20,887	20,887

⁺ p < .10

* p < .05

** p < .01

*** p < .001;

^a significantly different from Mexican residents;

^b significantly different from Mexican Only Spanish (Model 1), Mexican-born Spanish (Model 2) or Mexican-born, Arrived age 20+ (Models 3 & 4), and Lowest

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Acculturation Level (Model 5). Source and Sample, see Table 1.

Note: All models control for marital status, age, birth cohort, health insurance, and smoking status.

All of the models are weighted using the migration-adjusted weight.