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Determinants of Latina Obesity in the United States

The Role of Selective Acculturation

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Obesity has reached epidemic proportions in the United States. Hispanic American women in particular have higher rates of obesity than their non-Hispanic White counterparts. In this article, the authors review the existing literature on acculturation as it relates to obesity and health behaviors among U.S. Hispanic women. In addition, a conceptual framework is proposed to examine factors contributing to obesity through "selective acculturation." This concept challenges traditionally held unilateral assumptions that underscore Hispanic women's unhealthful behavioral patterns by explaining a process whereby Hispanic women both maintain some older health-related behaviors and acquire new ones once they settle in a new culture.

Keywords: *Hispanics; obesity; acculturation; body mass index; nutrition*

Hispanic women living in the United States have a higher prevalence of obesity than do their non-Hispanic White counterparts (National Center for Health Statistics, 2004). This disparity exists against a larger backdrop of what has been called the Hispanic Health Paradox (Franzini, Ribble, & Keddie, 2001), which refers to the phenomenon of newly arrived Hispanics who generally have better health status, such as lower obesity and mortality rates, than the U.S. population overall (Gordon-Larsen, Harris, Ward, & Popkin, 2003). However, over time much of this health advantage disappears; as years go by, both female and male Hispanic immigrants and those of subsequent generations tend to have increased rates of obesity and diabetes that surpass those of non-Hispanic Whites (Gordon-Larsen et al., 2003).

Researchers have proposed various explanations for such initial discrepancies and why they change over time. Theorists have become interested in the role of acculturation, which can be briefly defined as the process of acquiring and internalizing the prevailing attitudes, beliefs, and behaviors of a new culture, either to supplement or to replace those of one's culture of origin (Hazuda, Haffner, Stern, & Eifler, 1988; Vega & Amaro, 1994). Immigrants may arrive in the United States with culturally driven protective behaviors such as nonobesogenic dietary patterns.

Certain of these protective behaviors appear to change through acculturation, and it is thought that this phenomenon may help explain the eventual increases in obesity seen in Hispanic Americans. Even if a large portion of the Hispanic population carries the so-called "obesity genes" (Malis et al., 2005; Tanko et al., 2005), this predisposition is more likely to express itself in the presence of an environment and behaviors that are obesogenic. Among environmental variables such as access to healthful food, opportunities to engage in physical activity, and health care use and access, acculturation shows promise as a modifiable determinant of healthy weight in the Hispanic population.

Acculturation offers a potential mechanism for influencing and perhaps improving on protective health behaviors and thus is of interest to those studying obesity in immigrants. At this point in time, acculturation is not completely understood, and several major theories are energetically debated in the literature, in particular in relation to the Hispanic Health Paradox (Abraido-Lanza,

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Chao, & Florez, 2005; Hunt, Schneider, & Comer, 2004; Jasso, Massey, Rosenzweig, & Smith, 2004; Landrine & Knonoff, 2004; Lara, Gamboa, Kahramanian, Morales, & Hayes Bautista, 2005). Of these theories—the healthy immigrant hypothesis, the salmon bias hypothesis, socioeconomic status (SES) as a determinant, and segmented acculturation—the last two consider acculturation as a fundamental force. The theories may be summarized as follows.

The healthy immigrant hypothesis is based on evidence that individuals who immigrate self-select and are likely to be healthier and have other advantages such as superior psychological support. Thus, they are heartier and more resilient in spite of their typically lower SES and the presence of other determinants of obesity and related conditions.

The salmon bias hypothesis rests on the possibility that mortality rates are artificially low because Hispanics who are ill or aging return to their birth country to die (Franzini et al., 2001). However, U.S.-born Hispanics, who presumably want to spend their last years in the United States with their families, Cubans who cannot return to Cuba for political reasons, and Puerto Ricans whose deaths are recorded in U.S. vital statistics also have lower mortality rates (Franzini et al., 2001).

SES as a determinant is a theory that emerged from the observation that acculturation has mixed effects on behavioral risk factors and health outcomes such as obesity. There is considerable variation in health among subgroups, for which differences in SES may provide a partial explanation (Hajat, Lucas, & Kington, 2000; National Research Council, 2002).

Segmented acculturation proposes that a form of acculturation may be emerging that is not linear, steady, or continuous but that occurs in segments and results in either upward economic mobility and greater health or downward mobility and plummeting health (Portes & Zhou, 1993).

Although these theories are supported by the evidence, they fall short of providing the basis for a satisfactory model that can be operationalized to guide practice, research, or policy. A new conceptual framework is needed to better explain disparities and serve as a testable framework for interventions. This article takes a step in that direction and considers Hispanic Americans as the culturally unique and transitioning population that they are.

Because obesity most frequently results from dietary and physical activity behaviors that lead to an imbalance in energy, determining and supporting cultural factors related to nonobesogenic health behaviors, such as eating

less and exercising more, may be one means of preserving healthy weight among Hispanic immigrants. This in turn may have a major impact on the health of the nation because obesity is a risk factor for many chronic conditions and increased mortality (Pi-Sunyer, 2002). According to the U.S. Census Bureau (2003a), Hispanics compose the largest minority ethnic group in the United States. Lending more urgency to the problem, the proportion of Hispanics in the United States is expected to double by the year 2050, becoming nearly 25% of the population (Henry J. Kaiser Family Foundation, 2003). Therefore, attention to this group is crucial to ensure the health of all Americans in the long run.

Being overweight in general carries risk, but the health risk for obesity is better established (McTeague et al., 2003) and is thus of greater concern. Although obesity is a risk factor for many chronic diseases for both genders, Hispanic women are of particular interest for several reasons. First, they are at a higher risk for obesity than are Hispanic men and non-Hispanic White women. Second, obesity and pregestational and gestational diabetes in a woman increase the risk of adverse birth outcomes and the risk of adult obesity and diabetes in her offspring (Rosenberg, Garbers, Lipkind, & Ann, 2005). Hispanic women generally have a high birth rate, and their body weight and health status can therefore play major roles in the well-being of a significant portion of the next generation and beyond.

To date, there has been limited review of the literature focusing on Hispanic women, acculturation, obesity, and health behaviors. Therefore, in this article, we review the existing literature on acculturation as it relates to obesity and health behaviors that are associated with increased risk of obesity and conclude that there exists a specific pattern of acculturation that can be thought of as “selective.” We first examine acculturation as it affects obesity prevalence, diet, and physical activity patterns and health care utilization. We then discuss the major methodological problems with data collection that undermine the confidence with which researchers can draw conclusions. We progress beyond the major theoretical explanations for the paradoxes in Hispanic women’s obesity and health in the United States and describe “selective acculturation” as an alternative explanation. With selective acculturation as a fresh focus, we propose recommendations for future research, practice or program, and policy decisions. Our findings and conclusions may provide unique insights about how to tackle the problem of Hispanic obesity and lead to sensible policy proposals on how to design successful interventions.

Evidence of Acculturation as a Determinant in U.S. Hispanic Women

To examine acculturation as it affects obesity prevalence, diet and physical activity patterns, and health care utilization, a literature review was performed. Articles published from 1985 through January 2006 were located on scientific online databases: Medline, PsycINFO, and Social Sciences Abstracts. Keywords used were *immigrant, Latino, Hispanic, women, ethnic, culture, acculturation, assimilation, selective acculturation, obesity, weight, overweight, nutrition, diet, physical activity, exercise, and health*. Articles considered were limited to those published in peer-reviewed journals. Some small, localized research projects provided relevant data worthy of inclusion but of limited value because of small sample sizes. Therefore, studies based on analysis of data from major national and regional surveys were favored. They include the National Health and Nutrition Examination Survey (NHANES; Flegal, Ogden, & Carroll, 2004), the Hispanic Health and Nutrition Examination Survey (HHANES; Khan, Sobal, & Martorell, 1997), the National Health Interview Survey (NHIS; Flegal, Carroll, Ogden, & Johnson, 2002; Goel, McCarthy, Phillips, & Wee, 2004; Kaplan, Huguet, Newsom, & McFarland, 2004; Khan et al., 1997; Liao et al., 1998; Singh & Siahpush, 2002), and the National Longitudinal Study of Adolescent Health (Gordon-Larsen et al., 2003; Sorlie, Backlund, Johnson, & Rogot, 1993).

The following section presents findings from the literature regarding the influence of acculturation on obesity and related behaviors.

Acculturation and Obesity

Early local studies of small population samples of Hispanic Americans suggested that women who were more acculturated had higher body weight than did the less acculturated (Hazuda, Mitchell, & Haffner, 1991; Massara, 1989; Pawson, Martorell, & Mendoza, 1991). National surveys such as NHANES and HHANES have supported these findings. An examination of HHANES data suggested that acculturation was linked with BMI (body mass index) among Mexican Americans (Khan et al., 1997). However, women in the second and third generations had higher BMIs. The authors concluded that behaviors and body weight are influenced in different ways by the various components of acculturation and that adopting the host country's language also has different effects on body weight among generations (Khan et al., 1997). In another study, researchers analyzed data from the National Longitudinal Study of Adolescent Health and noted a "striking increase" in overweight between

first- and second-generation immigrants. Their analysis indicated that longer residence in the United States was associated with increased overweight status among Puerto Rican and Cuban Americans but not among Mexican Americans (Gordon-Larsen et al., 2003). They found U.S.-born Hispanics exhibited more highly acculturated overweight-related behaviors such as inactivity and diets with higher intake of fast foods and lower intake of fruits and vegetables than foreign-born immigrants.

More recently, Goel and colleagues (2004) used the 2000 NHIS data to study obesity among U.S. immigrants subgroups by duration of residence. They found that foreign-born Hispanics were less likely to be obese than the U.S.-born and that the longer Hispanic immigrants resided in the United States, the higher their BMI. It is interesting that, in this study, BMI did not increase substantially until immigrants had lived in the United States for 10 years—which the authors interpreted as a possible "threshold effect." These results supported those of an analysis of the 1993-1994 NHIS (Singh & Siahpush, 2002) as well as those of an analysis of 1998 NHIS data (Kaplan et al., 2004). The latter analysis found a remarkable fourfold increase in the risk of obesity in longer-term immigrants (≥ 15 years) compared to immigrants of 5 years or less.

The association between acculturation and obesity seems consistent and strong. However, as we demonstrate in the next section, the relationships between acculturation and obesity-related behaviors including diet and physical activity, as well as SES and accessibility patterns, are neither clear nor consistent.

Acculturation and Dietary Patterns

Epidemiological studies have consistently shown that dietary factors, including high-fat foods, are associated with obesity as well as several chronic diseases (Krauss et al., 2000). Recent data also strongly suggest that an excess of foods that are dense in sugar and/or high-fructose corn syrup may also play a role in the increase in obesity and diabetes (Brand-Miller, Holt, Pawlak, & McMillan, 2002; Gross, Li, Ford, & Liu, 2004; Ludwig, 2000; Wylie-Rosett, Segal-Isaacson, & Segal-Isaacson, 2004). On the other hand, high consumption of fruits and vegetables and whole-grain foods and limited consumption of saturated fats from red meats are associated with decreased risk for these chronic conditions (Krauss et al., 2000). Thus, traditional Hispanic diets, with their emphasis on fruits, vegetables, whole grains, and legumes and traditional Mexican foods such as cornbread, tortillas, beans, and rice, and lower intakes of desserts and added fats (Dixon, Sundquist, & Winkleby,

2000) may be protective. In fact, when researchers used the Healthy Eating Index (developed by the U.S. Department of Agriculture), they discovered that people who spoke Spanish ate more healthful diets than both non-Hispanic Whites and Hispanic English speakers (Aldrich & Variyam, 2000). The Hispanics who spoke English were assumed to be more acculturated, suggesting that acculturation is accompanied by an erosion in the quality of the diet. Other researchers found that first-generation Mexican women had a more healthful diet than did second-generation Hispanic women, whose poorer diet resembled that of non-Hispanic White women. Using data from NHANES III (1988 to 1994), researchers found similar results regarding intake of several vitamins, minerals, and fiber (Dixon et al., 2000). These studies and others (Aldrich & Variyam, 2000; Guendelman & Abrams, 1995; McArthur, Anguiano, & Nocetti, 2001; Neuhaus, Thompson, Coronado, & Solomon, 2004) have demonstrated that as acculturation and income increase, the relatively healthful Hispanic immigrant diet deteriorates.

Acculturation and Physical Activity Patterns

Lack of physical activity is associated with increased risk of obesity and obesity-related outcomes such as mortality and morbidity from coronary heart disease, high blood pressure, and diabetes (Centers for Disease Control and Prevention [CDC], 1996). Most studies of physical activity have measured leisure-time physical activity (LTPA), and the most recent data (2004) indicate that Hispanic women have the highest rate of inactivity—39.6% (CDC, 2005).

There are few studies that focus on the determinants of physical activity in minority women and even fewer focusing on Hispanic women. However, in contrast to the situation with diet, acculturation appears to improve the level of physical activity in both men and women. Analysis of NHANES III (1988 to 1994) revealed that inactivity was lower among those Hispanics who spoke mostly English, those who had lived in the United States for 5 years or more, and those who were born in the United States. The difference was striking—women who were less acculturated had a 58% rate of inactivity, compared to 28% for those who were more acculturated. In the Women's Cardiovascular Health Network Project, first-generation Hispanic women with English language acculturation and those who were younger than 25 years of age when they arrived in the United States were more likely to report being physically active. However, the length of residence, another common proxy for acculturation,

was not a factor (Evenson, Sarmientoa, & Ayala, 2004). In this and in other studies, Hispanic women named many sociocultural or acculturation barriers to physical activity including gender roles, language difficulties, and peer pressure (Eyler et al., 2002a, 2002b; Eyler, Matson-Koffman, et al., 2003; Eyler, Wilcox, et al., 2002; Juarbe, 1998; Juarbe, Lipson, & Turok, 2003).

Acculturation and Accessibility—Availability Patterns

The physical environment for Hispanics can either support or limit their power to engage in healthy behaviors, regardless of their awareness or beliefs (Green, Potvin, & Richard, 1996). Acculturation may affect Hispanics' diet and physical activity through changes in the availability and accessibility of healthful food and opportunities to engage in physical activity in their environment. Acculturation also influences access to health care, which in turn can influence health behaviors related to obesity.

Access to healthful food. It may seem paradoxical that food insecurity (limited or uncertain availability of nutritionally adequate or safe foods; Hamilton et al., 1997) is associated with overweight status or obesity (Adams, Grummer-Strawn, & Chavez, 2003; Townsend, Pearson, Love, Achterberg, & Murphy, 2001). However, individuals from food-insecure households often have limited financial resources (Rose, Basiotis, & Klein, 1995) and consume more low-cost but energy-dense foods to maintain adequate energy intake (Basiotis, 1992), which can lead to consumption of foods that are higher in fat and calories (Cox & Mela, 2000). The environmental characteristics of the neighborhoods in which immigrants live can strongly influence their dietary patterns. Researchers have found that healthful foods such as fresh vegetables are harder to find in poor urban neighborhoods compared to affluent areas (Horowitz, Colson, Hebert, & Lancaster, 2004; Zenk et al., 2005). Furthermore, although people living in low-income neighborhoods generally have poor access to stores that sell healthful foods, they often have easy access to fast-food restaurants (McDonald & Nelson, 1991; Morland, Wing, Roux, & Poole, 2002). In addition, the cheaper, more accessible foods that are available in low-income neighborhoods tend to be energy dense and high in fat and sugar (Cummins & Macintyre, 2002). Other acculturation- or SES-related factors found to affect food access are lack of familiarity with the community, language barriers, and lack of transportation to food markets where fresh or familiar foods are sold (McArthur et al., 2001).

Access to exercise facilities and programs. Several studies of Hispanic Americans and physical activity have demonstrated that access barriers included lack of transportation, lack of facilities or programs, personal or neighborhood safety concerns, and cost (Evenson, Sarmiento, Tawney, Macon, & Ammerman, 2003; Eyler et al., 2002a, 2002b; Eyler, Wilcox, et al., 2002; Marquez, McAuley, & Overman, 2004). Characteristics of the physical environment such as sidewalks, heavy traffic, streetlights, hills, unattended dogs, crime, seeing others exercise, enjoyable scenery, and condition of parks affect psychological and physical comfort and therefore access to physical activity opportunities (King et al., 2000). In addition, people living in low-income and high-minority neighborhoods often have reduced access to physical activity facilities such as parks and public recreation centers (Estabrooks, Lee, & Gyurcsik, 2003; Gordon-Larsen, Nelson, Page, & Popkin, 2006).

Access to health care and health promotion education. Health care providers can be a source of information and guidance regarding behaviors related to obesity prevention. Yet lower SES is associated with less use of health care services. Moreover, even when health insurance is available, the care provided to the poor may be of lower quality (Fiscella, Franks, Gold, & Clancy, 2000). Compounding the difficulty with access, Hispanic people are 3 times more likely to be uninsured than are non-Hispanic White people (CDC, 2005). Similarly, Hispanic people are less likely to have a regular place to go for medical care than are non-Hispanic White people (CDC, 2005). Studies show Hispanics spend much less on health insurance than others because of lack of funds or unfamiliarity with the idea of “buying insurance,” because health systems in their native countries may be government run (Mohanty et al., 2005). In addition, Hispanics experience language and transportation barriers to health care, difficulties in communicating with doctors (Timmins, 2002), and lack of bilingual providers and Spanish-language health materials (Russell & McCammon, 1995). Foreign-born Hispanics are less likely to report having received dietary counseling than U.S.-born Whites, but they were not less likely to report having received exercise counseling (Goel et al., 2004).

An Alternative Form of Acculturation

Acculturation has generally been associated with obesity and with obesogenic health behaviors such as high caloric intake and sedentary behavior (Hajat et al., 2000). However, at this point in time, the data are not clear or

consistent. For example, acculturation has been found to have opposite effects on healthy diet and amount of physical activity; some studies show a strong acculturation effect, whereas others show little or none. In addition, studies of acculturation's effects have several methodological limitations, making it problematic to compare study results and leading to disparate conclusions. In this section, we summarize the major methodological limitations, gaps, and inconsistencies in the research to date. We then build on the prior theories that have emerged and propose a new concept of “selective acculturation” that may serve both as a means of explaining the contradictions and as a framework for future research.

Gaps in the Acculturation Research

Many researchers have acknowledged problems with data quality in studies regarding acculturation effects on Hispanic body weight and health (National Research Council, 2002). These issues include questions about the validity of acculturation and other measures and problems related to the heterogeneity of the Hispanic population as well as data gathering and analysis.

Problems with measuring acculturation. Methods of measuring acculturation have not been standardized, and researchers have not always been clear or consistent regarding the standards of measurement they used to assess acculturation. An early, widely used acculturation scale was developed by Cuellar, Harris, and Jasso (1980). It identifies and measures four factors: (a) language familiarity, usage, and preference; (b) ethnic identity and generation; (c) cultural heritage and exposure; and (d) ethnic interaction. Among the variables that have been utilized more recently to measure the degree of acculturation are self-identified ethnicity and race (Flegel et al., 2004), the number of generations the respondent's family has lived in the United States, the language preference of the respondent (Khan et al., 1997), country of birth and number of years of U.S. residence (Singh & Siahpush, 2002), and language spoken at home and proportion of foreign-born neighbors (Gordon-Larsen et al., 2003). In addition, instruments that are closely related to acculturation measures such as the Cultural Affiliation Scale—the extent to which individuals attribute their health behaviors and attitudes to the traditions of their self-identified cultural group—have been developed (Mood, 1996; Yu, Wu, & Mood, 2005).

Because acculturation may also differ by age, geography, legal status, and gender, these measures make certain assumptions and fail to convey the complexity and

nuances of acculturation (Crespo, Smit, Andersen, Carter-Pokras, & Ainsworth, 2000; Dixon et al., 2000). In addition, acculturation scales usually assume a straightforward, linear progression in which old cultural habits are replaced with recently acquired ones, but a bidimensional or other more sensitive model (Lara et al., 2005) may be needed to detect relationships among acculturation, obesity, diet, and physical activity patterns.

Heterogeneity. The U.S. Hispanic population is quite heterogeneous, with great diversity in country of origin, culture, history, race, immigrant experience, duration of residence, and SES (Hajat et al., 2000; National Research Council, 2002). This diversity poses research challenges in that data are difficult to compare and generalize to the “Hispanic” population. A majority (25 million, or more than 60%) are of Mexican origin (U.S. Census Bureau, 2003a), and therefore most research has been conducted on Mexican Americans (Therrien & Ramirez, 2000). However, there is also a substantial proportion (15 million) of Cuban and Puerto Rican origins as well as individuals from Central and South America, Dominicans, and European Spaniards (U.S. Census Bureau, 2003a). National surveys and censuses usually base Hispanic ethnicity on uncertain methods of categorization. Recognizing these shortcomings, tactics and terminology have changed over time (National Research Council, 2002), allowing a more detailed and nuanced self-categorization according to Hispanic as well as race categories. This further complicates data collection because different racial backgrounds imply different life experiences (National Research Council, 2002), and more diverse categorizations have revealed differences in obesity rates among subgroups and in acculturation effects as well (Loria et al., 1995; National Center for Health Statistics, 2004).

Methods of data collection and analysis. Not unlike other large population-based studies, most of the large databases on Hispanic immigrant health use data-collection techniques that are subject to inaccuracy and bias. These include self-reported information about weight and height and diet and physical activity recall. Self-report may lead to recall bias and be subject to cultural interpretation. Furthermore, the source of the data is self-selected respondents who agreed to participate. Health measurements are not clinically confirmed, and the language in which the interviews are conducted has been found to affect self-reported health status (Angel & Guarnaccia, 1989). Critics have specifically questioned the accuracy of Hispanic mortality rates, a key component in the Hispanic Health Paradox (Franzini et al.,

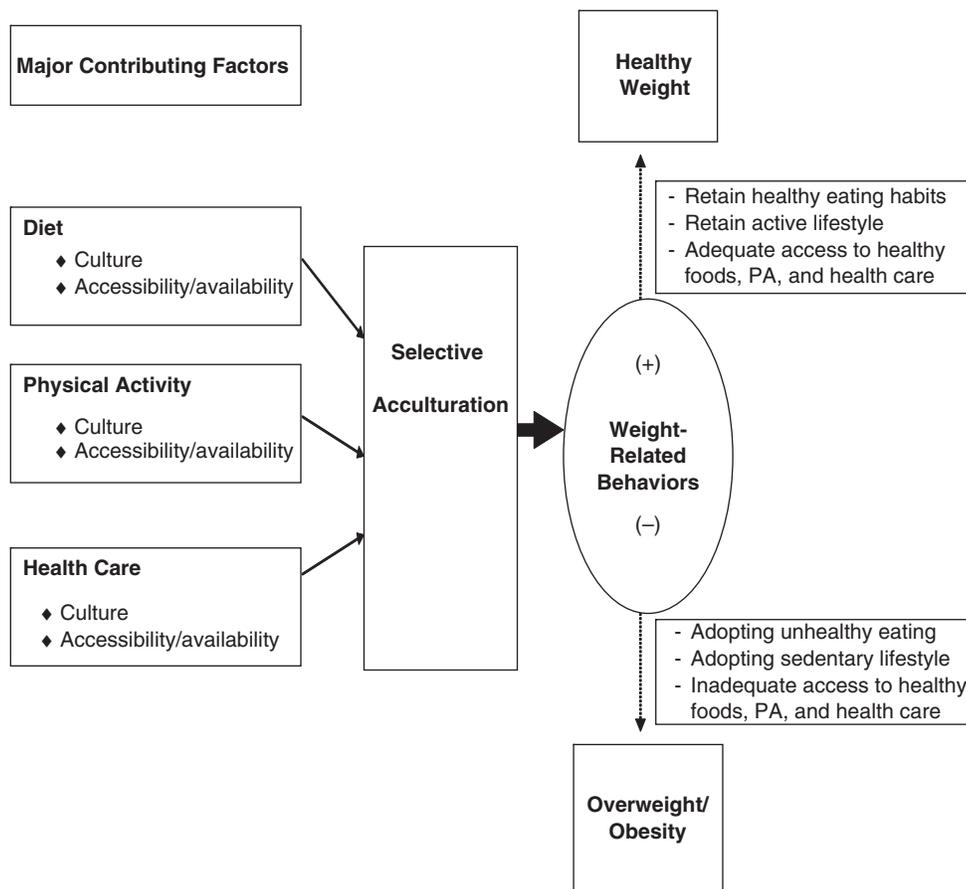
2001), but longitudinal cohort studies have supported the existence of paradoxically low mortality rates among Hispanics compared to non-Hispanic Whites (Liao et al., 1998; Sorlie et al., 1993). In addition, measures of SES are limited by including completed years of schooling and a categorical indicator of household income, which may not be meaningful. Finally, certain influential conditions may not be controlled in these studies. For example, seasonal and geographic variations may influence the availability and prices of healthful foods such as fresh fruits and vegetables as well as opportunities for physical activity (U.S. Census Bureau, 2003b). When measures assess only LTPA, they may underestimate physical activity overall, especially in people with physically demanding occupations, in which Hispanic immigrants are often employed (CDC, 2003). One study found that blue-collar Hispanics were less active than Whites during their leisure time (Crespo et al., 2000), but another study found that minority women met the recommended standard for physical activity when both LTPA and non-LTPA activities were included (Eyler et al., 1998).

An Alternative Explanation: Selective Acculturation

The new concept of selective acculturation is based on the evidence that one’s cultural beliefs, traditions, and values influence dietary and physical activity behaviors and that acculturation to a new set of beliefs, traditions, and values also affects these behaviors. The available evidence suggests that acculturation, once understood, can be manipulated and used as a guiding principle to promote and preserve the healthy body weight and health status of Hispanic Americans. This concept specifically implies that it is possible to avoid the erosion of healthful behaviors and the acquisition of unhealthful ones.

The selective acculturation concept considers the contradictions in the data described earlier and suggests a theoretical framework for explaining them and for filling in the gaps in our knowledge. It recognizes the contributions of prior theories but also points to their lack of inclusiveness and the difficulty of operationalizing them to guide practice, research, and policy. Although the healthy immigrant hypothesis suggests that immigrants have mortality rates lower than that of their country of origin because of their initially healthful behaviors (Marmot, Adelstein, & Bulusu, 1984), it does not explain why these behaviors and health advantages disappear over time. The SES as a determinant theory is based on evidence that high SES is generally linked with better health, and two Hispanic subgroups (Cubans and Puerto

Figure 1
Conceptual Framework for Major Contributors to Immigrant Weight Status
Through a “Selective Acculturation” Process



Note: PA = physical activity.

Ricans) appear to follow this pattern. Acculturation and SES are intertwined, and their effect on health, it is argued, is modified by each other (Scribner, 1996). It has been suggested that the Hispanic Health Paradox is better understood when the intricacies of acculturation and its interaction with SES are considered (Hajat et al., 2000).

Segmented acculturation recognizes the new form of immigration taking place today: Hispanic immigrants often travel back and forth between the United States and their countries of origin because of geographic proximity and ease of air travel. As a result, immigrants may take one of two roads: They may adopt most of or only positive norms and values of American culture while retaining their protective cultural behaviors, or they may adopt risky behaviors while abandoning their original culture's protective factors. Both may be occurring in the United States among Hispanics, helping to explain the conflicting data regarding the health effects of acculturation.

Unlike these prior theories, selective acculturation (see Figure 1) seeks to distinguish the different aspects

of acculturation and then guide individuals to retain the healthful behaviors of their culture of origin while acquiring the healthful behaviors of their new culture. For example, Hispanic immigrants can be encouraged to maintain their consumption of rice, beans, fruits, and vegetables while reducing the use of fat by substituting low-fat dairy products and using more healthful cooking methods such as broiling instead of frying. They can engage in culturally appropriate physical activity, perhaps dancing in a community center or walking in a neighborhood park, rather than adopt the TV-driven sedentary leisure pastimes of the United States. Further research may shed additional light on possible strategies to facilitate retention of other protective factors such as strong family and cultural ties and other social behaviors (Markides, Lee, & Ray, 1993; Scribner, 1996; Sorlie et al., 1993) while promoting English-language skills, education, access to healthful food and physical activity opportunities, and greater ability to navigate U.S. institutions (Portes & Zhou, 1993).

The transition to unhealthful diets and insufficient physical activity and the resulting body composition changes are occurring rapidly in Hispanic cultures and other cultures around the world (Kapoor & Anand, 2002; Popkin, 2004; Uauy, Albala, & Kain, 2001). For example, BMI data indicate that the prevalence of overweight status was 46% in Costa Rica and 30% in women in Santiago, Chile; in the Caribbean countries, obesity rates in 1995 were as high as 20% for men and 48% for women (Uauy et al., 2001). This suggests that healthy immigrants will be less and less healthy when they arrive in the United States or any highly developed country, and there will be fewer and fewer healthful behaviors to preserve. Franzini et al. (2001) referred to this moment in time as a “rare window of opportunity” to determine cultural factors that might have a positive influence on health and thus be a benefit to the Hispanic population—and possibly to us all. It lends urgency to the testing and potential adoption of selective acculturation as a useful concept for guiding the next steps in weight management among Hispanics.

Conclusions and Recommendations

Acculturation has both positive and negative effects on Hispanic people who live in the United States. Acculturation is “selective” in that individuals make personal choices about how they will or will not change behaviors, and societies make choices regarding how they will or will not support an individual’s behaviors. It may be possible to promote a healthful form of selective acculturation that involves keeping the healthful habits of one’s culture of origin while adopting the healthful habits of the American lifestyle. This new conceptual model informs the following recommendations for research, practices, and policy. Although there are many questions about the role of selective acculturation and body weight, it is not too soon to shape programs and policies based on what we do know.

Recommendations for Research

Future researchers must develop a better understanding of the concepts of acculturation and selective acculturation. Prior studies have used different measures of acculturation. It is important to develop standardized measures of acculturation and other variables as well as to standardize the definition of the concepts and to create appropriate theoretical models (Lara et al., 2005). In addition, researchers should consider assessing the continuous process of acculturation (Negy & Woods, 1992)

and offering a fuller, more nuanced description of the process, perhaps by including a self-assessment of acculturation (Hazuda, Stern, & Haffner, 1988). In addition, because of the diversity of the Hispanic population in terms of SES, race, country of origin, immigration experiences, and geographic residence, multidisciplinary research teams should work collaboratively to fully explore the impact of acculturation on health (Hunt et al., 2004).

Future intervention studies should be rigorous, use appropriate indicators of acculturation, and be informed by the concept of selective acculturation. The majority of prior studies are of a cross-sectional nature. It is important to conduct new longitudinal studies (Eyler, Wilcox, et al., 2002) in the future. Moreover, results from prior studies often focused on people who stayed in the host country rather than those who stayed in their native countries. Future research should include control groups in the country of origin to address the influence of selective immigration (National Research Council, 2002). By including control groups in the country of origin, researchers will be able to investigate the specific aspects of acculturation that determine retention or adoption of healthful behaviors and how they can be facilitated through environmental and societal means. Furthermore, studies that include more diverse groups of women and the use of appropriate indicators of acculturation (Khan et al., 1997) and that employ theoretically based interventions using validated assessment instruments to detect behavior change (Taylor, Baranowski, & Young, 1998) are strongly encouraged.

Future research should seek to illuminate the relationship among acculturation, SES, and obesity-related health behaviors. Prior research has shown that acculturation and SES are associated with obesity (Khan et al., 1997). Research that examines the relationship between improvement in SES and obesity deserves additional investigation (*Community-Based Strategies*, 2004).

Recommendations for Practice and Programming

Programs to preserve and increase healthy eating and physical activity should employ existing knowledge in sensitive, creative, and innovative ways. We recommend that future programs be culturally competent and utilize community participatory research, social marketing, and Spanish-language media to educate and promote healthful behaviors (Kriesberg, 2005). Program planners are encouraged to take advantage of recent technologies such as the Internet in promoting behavioral changes.

Recommendations for Policy

Policy changes should aim to improve access to healthful food, physical activity opportunities, and health education. Future research should employ culturally specific protective factors to inform public health efforts (*Community-Based Strategies*, 2004). For example, it is vital that we increase the cultural competency of health and preventive services by including more minority health providers and interpreters (Valdez, Giachello, Rodriguez-Trias, Gomez, & Castulo de la Rocha, 1993). In addition, environmental conditions in Hispanic neighborhoods must be improved to support social cohesiveness and remove barriers to affordable healthy food and physical activity opportunities. Finally, long-term strategies are needed that will improve opportunities for socioeconomic advancement by improving access to quality public education (*Community-Based Strategies*, 2004).

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