

Hispanic Children and Overweight: Causes And Interventions

Andrea Centrella-Nigro

The incidence and prevalence of overweight is increasing to alarming rates in children and adolescents in the United States. Hispanic children are one of the highest risk groups for overweight. Many different factors are positively correlated with childhood overweight in Hispanics: lower socioeconomic status, lacking health insurance or being under-insured, poor diet, decreased physical activity, overweight status of parents, mother's perception of overweight, and degree of acculturation. Pediatric nurses are in a pivotal position to assist in curtailing the epidemic. Various evidence-based practices to prevent and treat pediatric overweight are discussed with recommendations to intervene, particularly with Hispanic youth.

Pediatric obesity is considered an epidemic in the United States. Approximately 34% of children and adolescents ages 6 to 19 years are classified as overweight, with a body mass index (BMI) greater than or equal to the 85th percentile, and 17% are classified as obese, with a BMI greater than or equal to the 95th percentile (Ogden, Carroll, & Flegal, 2008). This information is based on the most recent data obtained from the National Health and Nutritional Examination Survey (NHANES), which obtains nutritional and health data of children and adults across the U.S. Each year, approximately 5,000 individuals are interviewed and given extensive physical examinations that include laboratory data (National Center for Health Statistics, 2008). In the NHANES 2005-2006 data, when specific age and ethnic groups are examined for prevalence of overweight, the numbers change significantly. Mexican

Americans, the most common subgroup of Hispanics in the U.S., have among the highest rates of childhood obesity. Twenty-two percent of Mexican-American adolescent males (age 12 to 19) are obese, followed closely by Mexican-American females (age 12 to 19) with 19.9% (Ogden et al., 2008).

Childhood overweight increases the risk of obesity in adulthood. The probability of an overweight child becoming an overweight or obese adult increases as the child ages. A 3-year-old who is at the 95th percentile of his BMI has less than a 20% chance of being an overweight adult at age 35 years compared to a 12 to 17-year-old with a BMI at the 95th percentile, with almost a 60% chance of being overweight in adulthood (Guo, Wu, Chumlea, & Roche, 2002). Studies have consistently shown that weight loss in overweight and obese adults is erratic and unsustainable (Curioni & Lourenco, 2005; Sarlio-Lähteenkorva, Rissanen, & Kaprio, 2000). In children, maintaining weight after significant loss has shown more success in comparison to adults (Saelens & Daniels, 2003).

Most authorities believe that the best approach in dealing with childhood overweight is primary prevention (Budd & Hayman, 2006; Dietz & Gortmaker, 2001; Flynn et al., 2006). The physical and psychosocial effects of obesity have been well documented and include type 2 diabetes mellitus, hypertension, hyperlipidemia, heart disease, stroke, lung disorders, joint degeneration, and poor self-esteem. Many of these same manifestations previously diagnosed only in adults are now being seen in obese children

and adolescents (Daniels et al., 2005). One of the broad goals of Healthy People 2010 is to reduce health disparities. Hispanics/Latinos are considered to be a minority with many health disparities, one of which is obesity (U.S. Department of Health and Human Services [DHHS], 2000). The goal of Healthy People 2010 is to reduce child obesity to less than 5% (DHHS, 2000). The current Hispanic population in the U.S. is 14%, but it is projected to rise to 24% of the total U.S. population by 2050 (U.S. Census Bureau, 2005). There is a great concern that as the Hispanic population increases in the U.S., the obesity epidemic will increase as well, especially among children and adolescents.

Overview of Hispanic Culture

The term *Hispanic* is used interchangeably with *Latino* and refers to descendants of at least 25 different countries, all of which are Spanish-speaking. Mexico is the most common country of origin of Hispanics in the U.S., comprising about two-thirds of the total U.S. Hispanic population. This is followed by Central and South Americans (14%), Puerto Ricans (9%), and Cubans (3%) (Borrell, 2005). Hispanic is not a racial reference, but rather, refers to ethnicity. There are many different races that make up the Hispanic community, such as Caucasian, Black, Asian, and Native Indian (Hispanic Research, Inc., 2006). Although there are various traditions followed in specific countries, many commonalities among Hispanics exist in the U.S.

Andrea Centrella-Nigro, DNP, RN, CNE, is an Assistant Professor of Nursing, Saint Peter's College, Jersey City, NJ, and a Research Mentor, Holy Name Hospital, Teaneck, NJ.

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Objectives and the CNE posttest can be found on pages 367-368.

The value that is perhaps held most dear to Hispanics is the family. This is known as *familism*. The family consists not only of the nuclear family but also the extended family. Unlike most White American families, the extended family plays a pivotal role in influencing the raising of children. The family is primarily patriarchal, and as such, the concept of *machismo* is intertwined in the father's authoritative role. This is the male dominance that permeates Hispanic families. However, the mother and grandmother have the stronger influence in child rearing, and in most Hispanic families, the mother either stays home to care for young children or an extended family member does.

Cultural values are primarily transmitted in the home. The concept of *personalism*, or face-to-face contact, is important to Hispanics. Before giving the Hispanic health teaching, the individual Hispanic needs to feel comfortable with the health educator and be face to face (Wamix & Bocanegra, 1998).

Socioeconomic Status and Overweight

Overweight is positively associated with lower socioeconomic status. That is, those who are poorer have a greater tendency toward overweight. In her cross-sectional study on adolescent's health and socioeconomic status, Goodman (1999) demonstrated a positive correlation with low socioeconomic status and obesity in all racial groups surveyed. In another large, cross-sectional study of preschool children in New York City who were recipients of the federal government's Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), Nelson, Chiasson, and Ford (2004) found Hispanics to demonstrate a disproportionately higher percentage of overweight and obese children compared to children of other ethnic/racial groups. They found Hispanic children more than twice as likely to be overweight or obese when comparing children from other racial groups in this WIC population. These researchers concluded that early intervention to decrease overweight should begin in the very young and be culturally addressed toward Hispanics (Nelson et al., 2004).

In an analysis of over 20,000 children and adolescents of a nationally represented cohort group, Haas and colleagues (2003) found that factors associated with overweight varied

depending on the age group studied. High-risk factors associated with overweight in the 6 to 11-year-old group were race (Black and Latino compared to White children), lower family income, and lower parental education levels. In adolescents aged 12 to 17 years, males had a higher odds ratio for overweight when compared to females, and Hispanics, Asians, and Pacific Islanders demonstrated a higher prevalence in comparison to White and Black teenagers. Other significant risk factors for overweight in this age group included lack of insurance or having public insurance. Over 47 million Americans are uninsured and of that number, almost one-third is Hispanic (National Coalition of Healthcare, 2009). Hispanics who have public insurance tend to underutilize it (DeNavas-Walt, Proctor, & Mills, 2004).

Almost five million children are being served by community health centers located in urban and rural areas that are described as "obesogenic" (Stettler, Elliott, Kallan, Auerbach, & Kumanyika, 2005). The term *obesogenic* refers to areas that promote obesity in the population because they usually lack good access to healthy foods and opportunity for physical activity. Researchers have found increased access to supermarkets offering fresh fruits and vegetables in White neighborhoods when compared to those of Black and Hispanic (Morland, Wing, Diez Roux, & Poole, 2002). Another study showed that disparities in access to food outlets offering healthy foods correlated more with low income status than with race (Baker, Schootman, Barnidge, & Kelly, 2006).

The U.S. Department of Agriculture (USDA) conducted a survey to determine if there were any differences among families of various levels of incomes in their expenditures in fruits and vegetables. Not surprisingly, they found that low-income families spend significantly less each week on fruits and vegetables when compared to families with higher incomes. The researchers found that when the low-income families increased their income, their expenditures on fruit and vegetables did not increase. It is speculated that families become accustomed to certain diets and even with more income do not necessarily adjust their diets to become healthier (USDA: Economic Research Service, 2004).

Diet and Overweight

In their secondary analysis of NHANES III, Laroche, Holer, and Davis (2007) found a positive correlation with increased dietary fat intake with families of minor children living with them. It is postulated that perhaps this may be due to time constraints in meal preparation with young children, as well as parents catering to the food likes of their children, which generally are high-fat, caloric-dense foods. A higher-fat diet is associated with a higher caloric intake and increased body weight. These researchers, among others, recommend that dietary teaching be done in concert with parents, preferably in the home environment.

Pérez, Hoelscher, Brown, and Kelder (2007) studied differences in eating patterns and food consumption between three groups of children and adolescents (4th, 8th, and 11th grade students) in Texas. The Hispanic population represented almost 40% of the children in this study because Texas has a disproportionately high Hispanic population in comparison to the total U.S. population. These researchers found that 4th graders consumed the healthiest diet, and 11th graders consumed the poorest. Interestingly, 4th graders in this study had the highest prevalence of overweight when compared to the other two groups. It is unknown if overweight is due to excess caloric intake or a decrease in physical activity.

In another cross-sectional survey of public school children in Texas, researchers found that all age groups of Hispanic children and adolescents demonstrated a significantly higher percentage of overweight than the NHANES data. In particular, Hispanic overweight children in this study ranged from 16.2% to 32.6%. The highest percentage of overweight children were 8th grade Hispanic boys (32.6%). It is not well understood why Hispanic children, especially adolescent males, show a consistently high amount of overweight and obesity (Hoeschler et al., 2004).

Thompson, Flores, Ebel, and Christakis (2008) examined the content and amount of television commercials to which school age children are exposed on two of the most commonly viewed Spanish stations. They found that children were exposed to a high amount of food and drink commercials, most of which featured non-nutritious choices. The researchers speculate that exposure to advertisements of unhealthy food and fluid may contribute to obesity among Hispanic youth.

Physical Activity and Overweight

Several research studies have found that Hispanic adults have a significant decrease in physical activity compared to non-Hispanic Whites. Likewise, Hispanic children exercise less than their non-Hispanic counterparts, which has caused some researchers to hypothesize that decreased physical activity may be a cultural phenomena among Hispanics (Morales, Lara, Kington, Valdez, & Escarce, 2002).

In a descriptive study on the physical activity in overweight and non-overweight Hispanic children and adolescents, Butte, Puyau, Adolph, Vohra, and Zaken (2007) found that physical activity decreased dramatically in Hispanic children of both sexes as they got older. Not surprisingly, overweight children and adolescents were less active than their non-overweight counterparts. More recently, Gesell and colleagues (2008) found a positive correlation with social influences and physical activity in pre-adolescent Latinos. The primary social influences in this study were family members. Those family members with a positive attitude toward physical exercise influenced their pre-adolescent children the most in doing physical exercise.

In their secondary analysis of NHANES data from 1988 to 1994, Crespo, Smit, Carter-Pokras, and Andersen (2001) found a positive correlation with leisure time inactivity and acculturation. When compared with their White, non-Hispanic counterparts, Hispanics who were less acculturated engaged in less physical activity during their leisure time. It is interesting to note that NHANES III only sampled Mexican Americans, and this is considered to be a weakness in the survey because it fails to capture information on the many other subgroups of the Hispanic American population (Bowie, Juon, Cho, & Rodriguez, 2007).

Hispanic Perception of Overweight

It has been observed that obesity rates among Hispanics increase with each generation born in the U.S. Second and third-generation immigrants of Hispanic adolescents demonstrated an increased prevalence of obesity when compared to first generation-born Hispanics (Popkin & Udry, 1998). It has been noted that Latinos do not have the same expectation of body fat and leanness as White Americans. There is a widely held cultural belief among Hispanics that healthy babies

and children are “chubby” or overweight.

The Hispanic view of overweight is one of health and strength and not necessarily associated with diseases (Baylor College of Medicine, 2005). A descriptive study conducted by Contento, Basch, and Zybert (2003) of mostly poor, uneducated, immigrant Mexican-American mothers and their children found that Hispanics mothers were accurate in estimating their own BMIs and chose a thinner figure as most desirable for themselves regardless of their present BMI (58% were overweight or obese). However, these same women, when questioned regarding their children, expressed that children in the 50th to 75th percentile BMI were too thin to be healthy and attractive, and rated children in 97th percentile BMI as just a little overweight. Olvera, Suminski, and Power (2005) found similar results of Mexican-American mothers’ assessment of their daughters’ body size. Mothers assessed their daughters’ body size as average when one-third were overweight (greater than or equal to the 85th percentile BMI). The more acculturated the mothers, the more the daughters picked slimmer figures as ideal body weight. Acculturation of the mothers in this study correlated with their daughters preferring thinner figures as ideal.

Acculturation and Overweight

The dietary intake among the various subgroups of Hispanics differs based on the degree of acculturation. Generally, acculturation of the Hispanic diet to the American diet has had a negative health effect (Morales et al., 2002). The more acculturated Hispanic tends to consume less fiber, fruits, vegetables, and whole milk. A cross-sectional study of mainly Mexican adults living in an agricultural labor camp in California found the most positive correlation with obesity and degree of acculturation. The other two factors that were positively associated with obesity were decreased exercise, increased TV viewing, and poor diet (Hubert, Snider, & Winkleby, 2005).

One recent approach that has been effectively used in the prevention and treatment of chronic disease in the Hispanic population has been the *promotores de salud* or community health workers. This approach involves trained lay community members who reach out to their Hispanic neighbors and friends in the community setting to promote health through teaching and support. The *promotores de salud* approach has

been primarily used in the treatment of diabetes mellitus and heart disease, which are prevalent among Hispanics, particularly Mexican-Americans. Community health workers can speak the language, understand the culture, and thus, can relate well to the Hispanics in the community (DHHS, 2006).

Interventions and Overweight in Children and Adolescents

The Institute of Medicine (2006) recommended a multifaceted approach toward preventing childhood obesity involving school-based interventions as well as community-wide and population-based approaches. This charge includes a broader range of school-based interventions, such as classroom didactics, physical education classes, programs involving parents, and healthy school meal programs.

Many different interventions have been tested in school-age and adolescent populations to address the growing epidemic of overweight with varying results. Stice, Shaw, and Marti (2006) conducted a large meta-analysis of interventions for the prevention of childhood overweight. The researchers reported an overall 21% effectiveness of the 64 clinical trials conducted. Intervention programs that most effectively influenced weight loss were those that were relatively brief, and targeted to female children and adolescents as opposed to pre-adolescent girls and boys. Programs that focused solely on obesity prevention were more effective in decreasing weight gain when compared to programs that focused on a variety of health problems, such as smoking cessation and cardiovascular disease.

In their systematic review of evidence-based interventions, Summerbell and colleagues (2005) found that most studies done with children and adolescents in the prevention of overweight are school-based and short-term (less than 12 weeks’ duration), focusing on healthy diets and increased physical activity. Although most interventions demonstrated some improvement in dietary intake and increase in physical activity, only a few showed any change in BMI.

Another systematic review of interventions in school settings found those programs that emphasized reduction of sedentary behavior primarily at home, such as TV viewing and computer and video games, were most effective in reducing BMI (Baranowski, Cullen, Nicklas, Thompson, & Baranowski, 2002). The researchers recommended

using a multimodal approach when working with school-age children, such as interventional multimedia nutrition games by teachers.

A large quasi-experimental research study (Gortmaker et al., 1999) was conducted with 4th and 5th graders in a school setting using the curriculum *Eat Well and Keep Moving*. The curriculum was implemented over two years and was integrated into several classes, including math, science, social studies, and language arts. Teachers were given training in the curriculum, which emphasized healthy diet and increasing physical exercise in daily life. The intervention group demonstrated a decrease in fat intake, an increase in fruit and vegetable consumption, and increases in foods containing vitamin C and dietary fiber when compared with the control group. These changes persisted after the two-year intervention period.

Cason and Logan (2006) used the curriculum *Jump into Foods and Fitness (JIFF)* over a 14-week period (seven classes given on alternating weeks) to 4th grade children in a school-based setting. They found significant positive change in knowledge about healthy nutrition and physical activity, as well as positive changes in behavior, such as eating healthy snacks and daily physical activity in the intervention group. The group demonstrated these positive effects five months later. Although the JIFF curriculum was not designed specifically for Hispanic children, it was used in a recent pilot study done through Ohio State University with Hispanic overweight school-age children. All materials were translated into Spanish. The study demonstrated short-term improvement in knowledge and behavior of nutrition and exercise. Long-term sustainability of the knowledge and behavior of healthy nutrition and physical exercise was not demonstrated (Romstedt, 2006).

A randomized controlled trial to increase the physical activity and decrease fat intake done with over 24,000 middle school children demonstrated no effect on fat intake and exercise in girls (Sallis et al., 2003). In contrast, the intervention showed a positive effect in physical activity among boys. Although boys did not show any decrease in fat intake as a result of the intervention, they demonstrated a significant reduction in BMI, probably because of the increased energy expenditure in the physical activity change. This intervention had no classroom health education component as did most of the other studies.

In 2005, an expert committee was formed, representing 15 professional

health care organizations serving the pediatric population. This was the second expert committee formed since 1997 to develop recommendations for health care professionals in the prevention and treatment of childhood overweight and obesity (Barlow and the Expert Committee, 2007). Among the recommendations included are (a) annual measurement of BMI in all children, (b) patient-centered and family-based prevention counseling on healthy nutrition and physical exercise, and (c) use of a multidisciplinary team effort in the treatment of pediatric obesity. A detailed intervention plan is outlined in their recommendations based on current evidence-based practice. The recommendations from the expert committee were written broadly for children and adolescents of all cultural backgrounds and not specifically for Latinos. Some recommended behaviors include a diet consisting of daily breakfast with limited caloric-dense foods, high in fiber and calcium, balanced nutrients from fat, protein and carbohydrates, nine servings of fruits and vegetables daily, limiting portion size, one hour of daily moderate to vigorous exercise, and encouraging eating meals with family together.

Implications for Pediatric Nurses

Among the better approaches to prevent and treat childhood obesity are educational interventions in school-age children that are school-based, multimodal, and interactional. These have been found to have positive effects on knowledge of healthy nutrition and exercise, as well as behavioral change in this age group. Other effective interventions are those done by health practitioners in office, clinic, and community settings. More interventions need to be done to prevent and treat pediatric overweight.

Pediatric nurses need to be actively involved in the prevention and treatment of childhood overweight. In particular, school nurses and nurses working in health care centers with access to children and adolescents need to sound the alarm of obesity, and arm children and their parents with knowledge and motivation to succeed in attaining and maintaining normal weight. Those nurses whose clientele includes Hispanic children need to understand their cultural values to effectively intervene. Use of culturally competent school-based curricula need to be utilized when working with Latino children. Community lay workers ("promotoras") who are trained

bilingual community members could be effective in reaching Hispanic parents in the community with the message about promoting healthy nutrition and physical exercise in their families. After-school and summer programs that offer children the opportunity to do a variety of exercise programs that are fun and interactional should be considered by local communities, especially in inner-city environments, which lack adequate environments for outdoor play. School-based nurses have an open door to encourage programs that emphasize healthy nutrition and physical exercise, which can be incorporated into school curricula. Using a multifaceted school and community approach can increase momentum and help win the battle over the childhood obesity giant in this country.

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