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Adapting a Nutrition Education Intervention for Latinos in the Midwest

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Abstract

Although Hispanics in the United States are at high risk for obesity, very few culturally competent interventions have been created or adapted to meet this population. We address the fidelity and fit of a nutrition education program adapted for Latinos in Pontiac, Michigan. We evaluated its program implementation using qualitative interviews with agency staff who implemented the 10-week program. Four staff members were interviewed multiple times over a two year period. Staff conducted interventions with 12 families in the intervention group and 7 families from the control group; the second session included 8 families in intervention group and 9 families from the control group. Participants were recruited by a local community agency. In-depth interviews with the staff were transcribed, entered into a qualitative software program, and deductively analyzed using a "fidelity and fit" model. Results indicate that fidelity and fit adherence were moderated by issues of gender, poverty, education, transportation, immigration status, and age. The conclusions of this study note that power and social inequalities must be addressed prior, during, and after interventions with minority populations in order to best meet the needs of the population and improve nutrition education services.

Keywords: Latinos, Nutrition Intervention, Culturally Competent, Fidelity & Fit, Nutrition Education

1. Introduction

Nutrition programs designed to address aspects of healthy eating habits, food preparation, food choices, and perceptions of health for Latino populations often come from adaptations of nutrition programs designed for non-ethnic populations. In their review of nutrition intervention programs for Hispanics Mier, Ory, and Medina (2010) reviewed thirty major studies in order to examine "the theoretical principles and components of culturally sensitive interventions tested in randomized controlled trials (RCTs) aimed at modifying eating and physical activity behaviors in Hispanics" (Mier, Ory, & Medina, 2010) p. 2). This review identified key components of interventions that included: bilingual presentation, group settings, using ethnic foods, involving the family, cultural cues, and developing trust. They found overall that "three components were common to most of the interventions that produced significant differences in behavior outcomes: involvement in families or social support, literacy-level appropriateness, and cultural values" (Mier, et al., 2010), p. 10).

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Studies that systematically record how programs were modified from original nutritional programs into culturally competent interventions for Latino populations in order to maintain fidelity to the original program but fit with the new population were not in general discussed. This study aims to highlight in some detail the formative aspects of translating programs in order to keep the fidelity of the proven program in place, while adapting to fit a Latino population.

The Shapedown Project

This study, "Shapedown Project," is a 10-week program that helps families make healthy lifestyle choices regarding nutrition and exercise as they build effective family support relationships. The program was initially designed by the University of California, San Francisco School of Medicine advocating parental involvement in the process of helping children improve their physical health (Mellin, Slinkard, & Irwin, 1987). Because the original program was developed in English and validated with English-speaking families, the current study sought to examine the effectiveness of culturally adapting a Spanish-version of Shapedown with Latino families in Pontiac, Michigan. The Julian Samora Research Institute (JSRI) at Michigan State University partnered with Centro Multicultural La Familia (CMLF), a non-profit community organization in Pontiac, to implement and evaluate the program. Specific program goals were to help:

1. Participants gain knowledge about the benefits of an active lifestyle and learn physical activities that improve and maintain health;
2. Participants gain knowledge about the benefits of a healthy diet and how to choose foods that improve health;
3. Children, teen and family participants support each other in making and maintaining healthy choices about diet and lifestyle activities; and
4. Participants learn family communication techniques that support healthy lifestyles and relieve family stress and tension.

Latino health research recognizes the need for more interventions but lacks effective evidence-based care (Kulis et al., 2005; Vega & Lopez, 2001; Weisz, Sandler, Durlak, & Anton, 2005). Even as Latinos have become the largest ethnic minority group in the United States, a research gap exists that would address their unique circumstances and lead to the elimination of health disparities (Flores et al., 2002). This paper will focus on barriers and strengths of attempting to culturally adapt an intervention with some attention to fidelity and fit (Castro, Barrera, & Martinez, 2004). How true (fidelity) can practitioners stay to an intervention with Latino populations? And how well does that intervention fit within the community itself for program adherence?

Methods

In-depth qualitative interviews with program staff and participant observation were conducted from January to August 2010 in order to evaluate program adaptation to the Latino community. Only program staff members were interviewed for this study because the aim was to understand how the intervention met fidelity and fit components for the Latino population. Program staff knew how the original program was adapted and fit to the community, due to their involvement with daily programmatic changes. Each member (five) of the Shapedown staff was interviewed using open-ended questions. Interviews were digitally recorded, transcribed, entered into a max QDA (a qualitative software program), and coded for themes using deductive analysis with regard to the framework of fidelity and fit of the intervention (Patton, 2002). In addition, participant observations were conducted for each of the staff meetings (three) and at the initial and final meetings of the Shapedown program. Notes were taken during the meeting and reviewed for themes in order to substantiate and validate the interview data. In-depth qualitative interviews were conducted two more times with two staff members, once at the end of the Shapedown intervention (individual interviews), and then one more time three months after the intervention ended (one joint interview).

Sample

The sample for this study consisted of Shapedown staff with a role in the cultural adaptation of the nutrition education program. These staff had insightful lessons about their observations and experiences in delivering the curriculum to Latino families.

The staff involved in the Shapedown program consisted of a director, program manager, nutritionist (bilingual), health/psychologist, and physical activities director. The nutritionist would meet with the families and present information on food and conduct cooking demonstrations. The health/psychologist served as a food educator who addressed issues of the emotional relationship with food and self-regulation techniques. The physical activities director led sessions on physical activities. In addition, the CMLF director and program manager oversaw the project, helped with recruitment, and debriefed staff.

Recruitment Process

CMLF recruited Latino families from low-income areas, as required by the project funder. CMLF advertised in their newsletter, partner community organizations, churches, and neighborhood networks. A staff member from CMLF also recruited participants in person at community meetings and churches. Participants were assigned to either a 10-week Shapedown intervention or to a control group. Due to grant specifications, only individuals participating in the Supplemental Nutrition Assistance Program (SNAP), formerly food stamps, could sign-up. The first session included a total of 12 families (19 parents and children) from the Shapedown group and 7 families (17 parents and children) from the control group were pre-tested. The pre-test instruments used included a parent-questionnaire, a child-questionnaire for children aged 9-17 years, and anthropometric measures for both parents and children 6-17 years. The second session included 8 families (24 parents and children) in the Shapedown group and nine families (36 parents and children) from the control group were pre-tested.

Intervention in Pontiac, MI

The Shapedown intervention consisted of 10-week sessions focusing on healthy lifestyles, nutrition and exercise. The intervention groups participated in weekly modules in which nutrition education activities were supported with cooking and exercise demonstrations. The weekly sessions lasted two hours and facilitated by a bilingual nutritionist, who taught about the importance of a healthy diet and proper nutrition; a bilingual communication counselor, who taught communication techniques among family members; and a bilingual physical therapist, who engaged and taught both children and adults. The control group received printed materials related to healthy nutrition only.

Analysis

Fidelity is defined as "the degree to which teachers and other program providers implement programs *as intended by the program developer"* (Dusenbury, Brannigan, Falco, & Hansen, 2003)p. 240). Fit, on the other hand, concerns how interventions can best meet the needs of the community. In order to understand the extent to which fidelity and fit impacted the effectiveness of the program, three levels of categorization were considered based on the Castro, Barrera, Martinez (2004) dimension of adaptation:

1. "Cognitive-information processing characteristics such as language and age/developmental level;"
2. "Affective-motivational characteristics as related to gender, ethnic background, religious background, socioeconomic status;" and
3. "Environmental characteristics that include ecological aspects of the local community.

These specific program level adaptive processes better equip understandings of how interventions are both faithful to the original intervention and the fit. Interviews and participant observation data evaluated the impact of Shapedown.

Results

Cognitive-Informational Processing Characteristics

Cognitive-information processing refers to the manner in which participants were met with appropriate conceptual relevance, translation into Spanish being one of the most common forms of this (Castro et. al, 2004, p. 44). We found that staff attempted to achieve cognitive informational fit for the population in three ways: through language, education, and age of participants.

Language (Spanish). When culturally adapting programs, language perhaps is one of the most vital aspects. Staff needed bi-lingual Spanish skills. All parents preferred that the intervention be carried out in Spanish. Parents were mostly immigrants, with children who had been born in the United States. Conversely, all the children were fluently bi-lingual and preferred English. Sessions of exercise and physical movements were conducted only in English mainly due to the fact that the physical education instructor spoke little Spanish. Staff reported that this turned out to not be a strong barrier as children and parent groups combined during these sessions, with children translating as needed.

Oral (low-education level). The level of education of the population was unexpectedly low. Many of the parents were foreign born (Mexico) and had received at most a 5th or 6th grade education, and therefore all the written materials and workbooks had to be re-worked within the context of an oral education. Part of one of the requirements of the Shapedown program is that participants do "homework" during the week and bring in their assignments prior to the start of class. This was instituted with the notion that if the participants did not complete their assignments at home then they would not be allowed to attend the sessions. Staff noted that this program aspect, however, did not fit with the majority of the program participants. Not being allowed to enter the program was not seen as an option due to the fact that the families struggled to even attend the sessions (transportation, child care, etc). Staff adjusted the sessions and altered assignments so that they could be accomplished without written homework. Assignments switched to oral discussions with hands-on examples. Reflection and responses occurred in large group sessions and not individually through take home assignments.

Age of Participants. Children's ages ranged from 6 to 17 years, with a mean of 11 years and standard deviation of 3 years. Thirty were boys, and thirty-six were girls. Many of the children were pre-pubescent and therefore were not experiencing many of the social and environmental (media) influences that the Shapedown materials addressed. In addition, most families brought all their children including babies and toddlers, so staff had to accommodate with childcare services. Despite the program's emphasis on adolescent behavior, the staff had to scramble and provide services for much younger children.

Affective-Motivational Characteristics

Affective-motivational characteristics refers to "characteristics as related to gender, ethnic background, religious background, socioeconomic status" (Castro et al, 2004, p. 43). The greatest extent of lack of fit occurred under this rubric. Shapedown's Spanish translations did not take into consideration differences in ethnic cultural eating habits, food preferences, and the like. The images of the written materials did not exhibit relevant cultural signs (Anglo images rather than Latino), and the foods and recipes did not reflect cultural relevance. The importance and structure of mealtimes were based on different models of families. As the staff nutritionist noted, food recipes needed to be adapted to include food that was more relevant to the population. One staff member noted the complexity of adapting to this community involved more than simply speaking Spanish, she had to understand the cultural habits from Mexico:

In Mexico people eat very heavy at breakfast, they eat heavy, we don't do that. First of all I'm from Puerto Rico and we are more American influenced, *y yopuedodesayunar los huevos, los pancakes* (I can eat eggs and pancakes) [but] Mexicans don't do that, so the Shapedown program doesn't take that into consideration…[I]t's not only that the level of education is not appropriate but it is also the Hispanic population that you're trying to target. It was very interesting because the majority of the participants are Mexican. I don't think it was intentional, it was just random, but we try to also adjust to their culture. (CMLF Staff) This quote shows that the staff needed to be particularly attentive to the differences in Hispanic cultures. Cultural competence involved more than language proficiency, but a respect for different Latino cultures. In response to this issue, for example, when Shapedown suggested chicken salad, staff members prepared tofu tacos. In other words, staff worked to use existing cultural frameworks rather than impose non-relevant food choices.

Latino Culture. Images of Anglo families with two parents and two children did not make sense for this population that often had larger families, including extended family, living with them. Therefore the idea that the nuclear family was isolated or centralized, made no sense to the widely networked and deeply embedded Latino family. One positive fit was the emphasis on the family unit, to have an intervention focused this way.

However, some notions of weight "as a positive" and culture were difficult to address: Many Hispanics don't think they have an obesity problem; they don't think that their children are obese. We are culturally brought up with the fact that a fat baby is a cute baby; not realizing that long term it could be diabetic, could have chronic diseases as it develops (CMLF Staff).

This quote demonstrates that even "healthy" body size expectations needed to be addressed apart from the program's structure. Shapedown assumed that individuals participating would have an agreed upon idea of healthy body size, but in this community fatter babies and children define desirable and healthy outcomes. Exercise activities needed adjustment as well. Children displayed more eagerness to play soccer rather than basketball, or workout with Latin-music inspired music rather than step aerobics. However, staff needed to attend to more than particular workout exercises, they needed to pay close attention to *how* family structure and culture impacted sustainable exercise programs. This concept was noted by one staff member: I think these families are good families. Some of the kids are very uncoordinated maybe a little more overweight than others. They have very protective families. Hispanic families are very loving and they're not just going to let their kids go on the street. I think it's just the parents come over and check me out and see who I was. Who's with their kids. So I think that sometimes there's too much sheltering. We don't go into the backyard. You don't learn any valuable lessons. You learned valuable lessons playing ball with other people. So it was just an eye opening experience (CMLF Staff).

For this staff member, another barrier of the program was that it did not address cultural issues of family sheltering and safety. These families lived in sometimes very dangerous neighborhoods, and many were immigrants. Fears for the safety of their children dictated that at times children did not go out to play; they stayed inside away from the influences of drugs, crime, and gangs. The staff member questions whether "there's too much sheltering", however, and perhaps the experience of being new to this community impacts overall health. Regardless, Shapedown did not provide any guidance for dealing with environmental, social, and safety issues in considering program adherence.

Gender. Most of the parental participants were mothers. According to the staff, very few fathers attended the sessions sparingly. Women assumed the role of decision maker regarding food, exercise, access to resources (participating in gyms, etc.). Women monitored income and social interactions. The reading materials did not reflect these primary structural family differences, so the program staff needed to address the issues of gender and gender relations when it came to how to transform family nutrition information into Latino culture.

Poverty. Living below the poverty line impacted program fidelity and fit. All staff mentioned that their ability to adhere directly with the program diminished due to participants' uncertain working conditions (changing labor arrangements), lack of access to affordable foods (fresh vegetables and fruits), lack of reliable transportation to the program intervention times, and lack of childcare. Participants lived in neighborhoods that prevented children from playing safely outside, purchasing affordable fresh foods, and joining gyms. In addition, families had limited access to reliable transportation and managed uncertain working conditions.

Environmental Characteristics

Environment played a crucial role in the application of the intervention; including the external or social aspects that contribute to cultural adaptation of the program. Environment is defined by the physical surroundings such as the agency that recruited the participants, and the circumstances that surrounded access to the program.

Agency driven (community agency, high levels of trust). Partnering with a local well-established social service agency benefitted program participation. Agency representatives spent a lot of time calling, reminding, offering rides, providing childcare, and in general motivating their participants. Staff noted that participants responded positively to the constant and personalized attention. Communication could take place either in English or in Spanish, and long-term involvement with families, children, and the community increased trust.

Travel Issues, Jobs and Weather. One of the most difficult issues was lack of reliable transportation for the families who were often dependent upon one another. This was especially true when families only had one car, and one parent (usually the father) needed to work late. The city area lacks reliable public transportation, with limited evening service hours, in unsafe neighborhood environments.

For these participants, especially for fathers, work took precedence over the intervention. This contributed to the fact that fathers were less likely to come to the sessions. Most of the program took place during the winter months in Michigan, which strained participation.

Michigan winters can not only be dangerous to be drive in due to the snow, but the sun sets early meaning that families had to be more cautious of their and their families safety. The program developed in California never mentioned issues of time, or planning for various seasonal issues in planning activities. Staff noted this unexpected difficulty: It varied; we did it at a time that I think was a little difficult. Winter months for families are a little difficult. Had we probably started in the fall and – I would think we would have had more participants in coming. The challenge is the weather; we had some days there that were really, really tough for our families. Many of them don't drive so they would have to wait for their spouses to come from work to come. So they didn't have that independence, and if the husband didn't come on time or the roads were too slick or too icy or snowy, they wouldn't come. They tend to fear the cold. (CMLF Staff) Environmental concerns thus were areas that affected participation throughout the intervention. Many of the families migrated from Mexico, which does not experience winter with the same voraciousness as Michigan. These physical difficulties of reliable transportation and work commitments provided more barriers to access and sustainable participation in the intervention.

Discussion

Attempting to adapt a culturally relevant and effective intervention strategy for Latinos using materials not originally intended for this population was challenging. Many issues arose through the framework of fidelity and fit. For example, although speaking Spanish was indeed key in keeping the adaptation of the program with the population, it was not enough to surmount the many obstacles that this group faced in staying faithful to the intervention. Social and cultural issues such as education level, transportation, gender, and political atmosphere all contributed to the effectiveness of program outcomes. One aspect that Castro et al (2004) do not include in their model of fidelity and fit with interventions is the context of power and social inequalities. This intervention did not occur within a vacuum that was immune to outside influences. In addition to the above individualized aspects, certain social context issues are important to consider.

For example, many of the participants were low-income Hispanics, and though we did not ask if they were documented, a pervasive sense of fear of immigration enforcement pervaded. ICE (Immigration and Customs Enforcement) raids steadily increased in the past decade, with heavy increases in Michigan as a border state (Sanders, et al, forthcoming). The fear and trepidation for residents to leave their houses or enter into research studies may appear to be too dangerous, and that their confidentiality may not be maintained. This is partly due to the fact that many of the participants had no experience with research studies, but also the real fear of coming into contact with ICE officials. The fervor and anti-immigration context of the time reflected in the U.S. 2010 mid-term elections fueled this fear.

In addition to the major findings from above, the qualitative interviews outlined some of the most valuable lessons that were learned as a result from the Shapedown intervention. These included: learning how to eat, engagement with exercise, family unit is key for long-term sustainability. Also, participating with a research team from Michigan State University that was mostly Latino (four members of the research team identified as Latino and Spanish speaking) was a positive aspect of the program for the participants, especially the children who were impressed with the positive role models.

The major challenges included finding an appropriate location that included all the necessary aspects of the Shapedown intervention (including a physical activity area, kitchen, meeting room, and play facilities for the children). In addition, it was recommended that the program not start during the Fall and Winter months, with Michigan's winter and transportation already being a problem with this population, the timing made it difficult to retain participants in the program. Finally, the program could have used more funds for incentives for the participants to continue their participation, especially incentives for the children (such as school supplies). Also, the surveys given at the beginning and end of the intervention need to be at a simpler reading level (preferably a 5th grade reading level) and only last about 20 minutes.

Our recommendations for future implementations of Shape down should include a more close review of the materials as they relate to the specific ethnic group. This is important to address issues of types of food eaten, types of exercise and physical activity that will lead to the great use, social standing and how family structure impacts adherence. Though this program faced many challenges, there still are some important impacts and benefits as well. The community became more aware of the importance of research and nutrition. The ties between CMLF and JSRI were strengthened for future research endeavors. And the community was able to receive important information that will be useful for laying the foundation of future nutritional choices.

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