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IS IT CULTURALLY APPROPRIATE? EVALUATION EFFORTS FOR MEASURING THE CULTURAL APPROPRIATENESS IN NUTRITION EDUCATION PROGRAMS TARGETING THE HISPANIC POPULATION

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IS IT CULTURALLY APPROPRIATE? EVALUATION EFFORTS FOR
MEASURING THE CULTURAL APPROPRIATENESS IN NUTRITION
EDUCATION PROGRAMS TARGETING THE HISPANIC POPULATION

A Thesis
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
Food, Nutrition and Culinary Sciences

by
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ABSTRACT

IS IT CULTURALLY APPROPRIATE? EVALUATION EFFORTS FOR MEASURING THE CULTURAL APPROPRIATENESS IN NUTRITION EDUCATION PROGRAMS TARGETING THE HISPANIC POPULATION

Background: In the United States, nearly 70% of the population is overweight. The U.S. National Health and Nutrition Examination Survey says Hispanics have the second prevalence of obesity, thus, increasing the risk of heart disease, cancer, stroke and diabetes in the largest minority group in the U.S. (U.S. Census, 2010). This requires effective and culturally appropriate interventions to promote healthy lifestyles. (WHO, 2003).

Objective: The purpose of this study was to design and pilot-test a culturally appropriate tool to assure the nutrition information provided to the Hispanic population is appropriate.

Design: The research design consisted of a triangulation of methods including different qualitative and quantitative methods and data collection sources. This study has four phases: 1) formative research about the concept of cultural appropriateness in nutrition education programs for Hispanics through a systematic literature review and interviews with EFNEP State Coordinators/staff; 2) based on data obtained from aim 1, design a conceptual framework for the development of a culturally appropriate tool; 3) development and testing of a culturally appropriate evaluation tool; and 4) use the evaluation tool designed to assess the level of cultural appropriateness of a nutrition education curriculum for Hispanic women in SC.

Results: To verify the need of an evaluation tool on nutrition education programs for Hispanics, the online survey was sent to 125 EFNEP State coordinators. Out of this total 31.2% (n=39) provided responses that showed the materials they usually used are in Spanish, mostly translations. 93.96% (n=39) considered that having an evaluation tool for cultural appropriateness would be helpful. The pilot-test of the evaluation tool designed for this study on Celebrating Health/Celebrando la Salud curriculum was done with a convenient sample of 10 Spanish speaking nutrition educators. The results of the analyzed feedback (n=8) established that the instrument is relevant to cultural competence and easy to implement in any curricula. The final stage of the investigation included a focus group with 15 Hispanic women with an average age of 38.2 years. In this stage, the results related to the cultural aspect rather than the program's visual component. Some aspects considered included: Spanish language, a culturally sensitive educator and Hispanic recipes.

Conclusions: Further work is needed. Preliminary results suggest that the culturally appropriate nutrition education evaluation tools could be used for evaluating nutrition education programs for Hispanics and that the CH curriculum is culturally appropriate for Hispanics.

DEDICATION

To my family, thank you for all the prayers that helped me get through this process, thank you for being always there for me and for showing me every day how blessed and fortunate I am for having such a strong, caring and loving family.

Tia Hellen, your love and wisdom made this possible. Thank you for pushing me and guiding me to succeed and be the best I could be. Your caring words and support kept me going every day.

Papi and Mami you are both my role models, thank you for taking care of me. Even though we were far away, I always felt your presence next to me. I truly believe I have the best parents anyone can have, both of you were my motivation, I love you.

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To my beloved grandparents, Tata, Titas, my Tia Tuti, my Tio Alberto and my brothers, thank you for believing in me. Your love and support helped me make my dream come true.

I LOVE YOU AND THIS IS FOR ALL OF YOU!

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CHAPTER ONE

1 INTRODUCTION

1.1 Hispanics and Demographics

Hispanics are the largest minority group in the United States (US), with an estimated 52.0 million individuals as of July 11, 2011 that comprise 16,7% of the nation's total population (U.S. Census Bureau, 2012). The Office of Management and Budget (OMB) defines Hispanic or Latino as “a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race” (Ennis, Ríos & Albert, 2011, p.2).

The Latinos in the United States accounted for most of the population’s growth: 56% from 2000 to 2010. Between 2010 and 2011, 1.3 million of Hispanics were added to the nation's population. This number is more than half of the approximately 2.3 million added to the nation's population during this period (U.S. Census Bureau, 2012).

In South Carolina (SC), the largest growth in the Hispanic population occurred in the 2010 and was estimated to be 148% (U.S. Census Bureau, 2010). Particularly, the SC county with the largest Hispanic population is Greenville with 38,473 Hispanic population; followed by Beaufort with 19,605: Charleston 19,270: and Richland 19,161 (Pew Research, 2013).

Hispanics Health and Nutritional Status

Hispanics have the second highest obesity prevalence among adults in the USA (CDC, 2011). Chronic diseases such as heart disease, cancer, stroke, and diabetes are the four leading causes of death for Hispanic females residing in USA (U.S Department of Health and Human Services Office of Minority Health, 2012). Major health problems concerning the Hispanic population are related with their dietary patterns such as eating food high in saturated fat or not eating enough fiber have been associated with several chronic health conditions such as coronary heart disease, certain types of cancer and strokes (Chavez-Martinez, 2008).

The important role of dietary factors for health disparities was first recognized in the 1985 US Task Force Report on Black and Minority Health. The report indicates that, although the overall health of the US population had improved and life expectancy had significantly increased, the life expectancy and health of ethnic minority groups such as Hispanics, African Americans, and American Indians still lagged behind that of Whites in conditions including obesity, diabetes, and heart disease, which are influenced by nutrition and diet-related behaviors (US Department of Health and Human Services, 1985). More than 20 years later, the nation's health continues to improve, but many of the same disparities remain. For this reason, the Healthy People 2010 and 2020 include eliminating health disparities as an overarching goal (Lancaster & Bermudez, 2011).

Health Promotion and Nutrition Education Interventions Among Hispanics

The rapid rise in numbers of Hispanic people in the United States requires a deep and careful understanding of the Hispanic culture, health care needs, and methods to approach health promotion (Martyn-Nemeth, Vitale & Cowger, 2010). Overall, in order to educate and help this population, a variety of nutrition educational programs have proven to be very successful among the Hispanic population (Albright et al., 2005; Bender et al., 2013; Elder et al., 2005; Rosal et al., 2011; Mier, Ory & Medina, 2010). However, for culturally specific interventions, educators need a better understanding of how to evaluate the cultural appropriateness and the cultural effectiveness of interventions, as well as being able to identify and understand how each culture relates to health behavior and apply this knowledge in planning and development activities (Crowder & Broome, 2012; Kreuter et al., 2003).

The way the health promotion is delivered to Hispanics can make a difference in their improvement and determines if the program is efficient. Having culturally appropriate curricula for this population could enable health professionals, paraprofessional and policy makers to promote healthy lifestyles and determine what type of approach is most effective for nutrition education with a Hispanic population (Giger & Davidhizar, 2007; Beach et al., 2005).

1.2 Nutrition Education and Culture

Given the close relationship between culture and eating habits, nutrition education interventions must frame dietary recommendations as well as behavioral strategies for achieving dietary change within the specific cultural context of the target population (Kumanyika, 2006). In general, minority and low-income families have restricted resources, time, and skills to identify and prepare healthy foods. They often have a poor or an inadequate knowledge of nutrition. Therefore, in order to respond to these needs, nutrition intervention programs must be theoretically based and context-relevant by including techniques that help families to develop, to manage and to improve strategies for quick, nutritious meals, manage food resources, feel more confident in food preparation knowledge and ability, and improve nutrient composition of their diet (Condrasky, Griffin, Catalano & Clark, 2010).

In addition, among minority and low-income families, cultural appropriateness can make the difference between a successful and an unsuccessful health education intervention or program (Martyn-Nemeth, Vitale & Cowger, 2010). Culture includes factors such as familiar roles, communication patterns, beliefs related to personal control, individualism, collectivism, and spirituality; other individual, behavioral, and social characteristics are not inherently “cultural” but may help define culture for a given group if they have special meaning, value, identity, or symbolism to the group’s members (Kreuter et al., 2003). Linguistic and ethnic differences, subcultures, and sex and gender roles within the predominant culture also need to be taken into consideration (Davis & Rankin, 2006). In fact, researchers have identified that simply translating materials

designed for other groups into Spanish is not effective and runs the risk of missing key cultural aspects (Saldana, 1992).

One definition mentions that a culturally appropriate community intervention is a set of behavior change strategies that meet each of the following characteristics: (a) interventions based on the cultural values of the targeted group, (b) strategies that reflect the subjective cultural characteristics of the members of the targeted group (i.e., their attitudes, expectations, norms regarding a particular behavior;) and (c) components comprising the strategies reflect the behavioral preferences and expectations of the members of the group (Marin, 1993).

Essentially, an organizational context cultural competence can be defined as a set of values, behaviors, attitudes, and programs that enable effective working with multicultural populations (Luquis & Perez, 2003). The literature relates other appropriate definitions including cultural targeting and cultural tailoring. In one hand, cultural targeting refers to “the process of creating culturally relevant interventions, often involving adaption existing materials and programs (Pasick et al., 1996). On the other hand, cultural tailoring refers to “any combination of information or change strategies intended to reach one specific person, based on characteristics that are unique to that person, related to the outcome of interest, and have been derived from an individual assessment”. (Kreuter et al., 2003, p.137).

1.3 *Statement of Purpose*

The rapid growth in the Hispanic population in the U.S. and the associated health issues underscore the need for nutrition education materials specifically developed for Hispanics audiences to employ comprehensive strategies of nutrition, health and physical activity education. To overcome the growth of these statistics requires implementing health and nutrition education that addresses the health problems that afflict this population. However, no specific guidelines define components of a culturally appropriate curriculum suitable for the Hispanics audience and how to assess their effectiveness. The purpose of this research project is to design a culturally appropriate tool that can be used to deliver nutrition and health information provided to the Hispanic population, appropriate for them and that the message intended is transmitted efficiently and accurately. The developed tool will be used to assess the level of cultural appropriateness of a curriculum designed for Hispanic women in South Carolina.

1.4 *Research Aims*

The research aims that guide this study are the following:

1. Identify the essential elements for ensuring the cultural-appropriateness of nutrition education programs targeting Hispanics living in the USA.
2. Design a conceptual framework for the development of a culturally appropriate tool that can assure that the nutrition and health information provided to the Hispanic population is appropriate for them and that the message intended is transmitted efficiently and accurately.

3. Develop and test a culturally appropriate tool for reviewing nutrition education curriculum targeting the Hispanic population living in the US.
4. Assess the level of cultural appropriateness of the curriculum “Celebrating Health/Celebrando la Salud” with the evaluation tool developed in this research study.

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CHAPTER TWO

2 LITERATURE REVIEW

In preparation to Journal of Nutrition Education and Behavior

Major nutritional issues that concern the Hispanic population include eating food high in saturated fat and not eating enough fiber, which are associated with several chronic health conditions such as coronary disease, certain types of cancer, and strokes (Chavez-Martinez, 2008). These chronic diseases as well as diabetes are the four leading causes of death among Hispanic females residing in the United States (U.S Department of Health and Human Services Office of Minority Health, 2012).

In South Carolina (SC), the Hispanic population grew the fastest (148%) in 2010 (U.S. Census Bureau, 2010). This population ranks 29th in the nation and, in SC they represent 5% of the state's population (Pew Hispanic Center, 2010). The rapid growth in numbers of Hispanic people in the USA requires an understanding of Hispanic culture, health care needs, and methods to approach health promotion (Martyn-Nemeth, Vitale & Cowger, 2010). Moreover, to help this population, it is important to define their culture and identify cultural and language barriers. The way health promotion is given to this population can make the difference in their improvement.

Overall, nutrition education and programs that link research, theory, and practice are more likely to be effective (Contento, 2008). For this reason, nutrition education interventions should be research-theory based, and include practical techniques that help families develop strategies for quick, nutritious meals; manage food resources; feel more

confident in food preparation, knowledge, and ability; and improve nutrient composition of their diet (Condrasky, Griffin, Catalano & Clark, 2010).

For incorporating the culturally-appropriateness component, researchers have realized that simply translating materials designed for other groups is not an effective strategy and runs the risk of missing key cultural aspects (Saldana, 1992).). Having culturally appropriate curricula for this population can enable health professionals, paraprofessional, and policy makers to promote healthy lifestyles and determine effective approaches for nutrition education of a Hispanic population (Giger, Davidhizar, 2007).

There is an ongoing debate over how to design effective culturally appropriate components for health interventions for minorities in the United States. This review is to become aware of and identify different nutrition education programs, and the theoretical principles and definitions of culturally appropriate interventions that are going to be taken into account in the development of this research project.

More specifically, the goal of this literature review is to identify examine and describe the terms, theoretical values and components of culturally appropriate interventions aimed at modifying eating and physical activity behaviors in Hispanics. It is key to gathering existing materials and curricula related to nutrition education for Hispanic adults, in order to identify areas for improvement of the curricula and materials.

Below is a description of the Hispanic population, followed by the definition of the main terms used in the research literature investigation and a description of a nutrition education curriculum developed for the Hispanic population in South Carolina. A review of existing evaluation tools analyzes cultural appropriateness. At the end is an

extensive systematic review about identifying or confirming key intervention elements for Hispanics; refining the understanding of how to best address these elements in interventions with Hispanics, and acknowledging logistic issues that may affect nutritional education programs delivery and acceptance.

2.1 Description of the Hispanic audience

Hispanics have the second highest obesity prevalence among adults in the USA (CDC, 2011). Their living situation in the US influences their health and habits, such as, eating and activity patterns. Most of the Hispanic population living in the US tries to consume a diet similar to what they ate in their country of origin, which is a factor of acculturation. However, the more acculturated they are, the more they eat foods that are typical of the American diet (Lara, Gamboa, Kahramanian, Morales & Bautista, 2005).

Another factor that influences what they eat is that Latinos are more likely to live in communities that are “food deserts” where there is limited or no access to healthy, affordable food (Melinda & Manoj, 2012). The food environment, coupled with the common problem of a lack of transportation, can create powerful structural barriers to Latino families’ healthy food access. Cultural and language barriers are thought to be partially responsible for the poorer outcomes in minority groups by impeding the transfer of information and knowledge (Martyn-Nemeth, Vitale & Cowger, 2010).

Another interesting demographic fact concerning the Hispanic population is that, in South Carolina, 45% of the Hispanics are married and 28% are considered to be living

in poverty (Pew Hispanic Center, 2010). Among all Hispanic adults, 47% speak primarily Spanish, 28% are bilingual, and 25% speak primarily English (Chavez-Martinez, 2008).

The Hispanic population has a lower level of education than other ethnic groups, higher only than that of American Indians and Alaska Natives (Pew Hispanic Center, 2010).

2.2 Nutrition behaviors among Hispanics

Cultural and language barriers are thought to be partially responsible for the poorer outcomes in minority groups by impeding the transfer of information and knowledge (Martyn-Nemeth, Vitale & Cowger, 2010). To determine the nutrition education needs and concerns of a low-literacy population, researchers with the Expanded Food and Nutrition Education Program (EFNEP) in Minnesota conducted five focus group sessions with thirty-nine women and two men of diverse racial/ethnic backgrounds. Results showed most participants requested to learn about what foods to eat and how to prepare them, and they wanted easy recipes for low-fat meals. Most cited lack of time to cook/prepare foods and wanted to know about healthy choices among fast foods and convenience products.

Clients were also concerned about their children's diets and requested tips to encourage kids to try healthier foods or new recipes. While discussing topics such as weight management, cholesterol levels, children's diets, or healthy eating on a budget, the response was the same: they wanted quick, easy, low-cost food ideas that would also taste good. When asked how they wanted to receive this nutrition information,

participants suggested methods such as posters, videos, hotlines, or consultations. Hands-on group activities such as cooking classes were very popular, as were pamphlets and group sessions (Hartman et al., 1994). Some of these findings can be backed up by conclusions of the focus groups (Strolla, et al., 2006) in the study “Using qualitative and quantitative formative research to develop tailored nutrition intervention materials for a diverse low income audience,” Hispanics demonstrate a lack of knowledge regarding fats, fruits, and vegetables. Also, many of those interviewed showed a lack of basic knowledge of health and healthy eating, and many lacked basic cooking skills (Strolla, et al, 2006).

Contento et al., (2003) conducted a study to determine body image perceptions of themselves and their children among low-income Latinas and found that these Latina women preferred having a thin figure but a plumper figure for their children. Also, low-income Latina mothers with the highest BMI indexes made the least healthy dietary choices for their kids (Contento et al., 2003). Therefore, one important outcome is to assist mothers in understanding the health consequences of childhood obesity, recognizing when their children are overweight, and understanding the importance of healthful food choices for their children.

Few studies have explored factors influencing food choices of Hispanic immigrants in new settlement areas such as South Carolina. A focus group, developed to assess the Health and Nutrition of Hispanics in South Carolina, revealed that their favorite’s foods were those they were used to eating in their home countries since childhood, indicating that traditional foods still were cooked at home (Chavez-Martinez, 2008). Participants in

two studies stated that food choices were based on availability, accessibility, variety, family preferences, health issues, weight issues, money, location, and cooking time (Chavez-Martinez, 2008; Gamboa, 2010).

Earlier research found similar results about how participants perceived the Hispanic community as not being a healthy community. Several studies show that this population mentioned that they were not confident in their ability to select healthful foods at the store, lack of time to cook healthier food, prices of healthier food, income, transportation, language barriers, lack of availability of preferred foods, lack of family support, contradictions due to conflicting messages, and the need to share the house with other persons (Gamboa, 2010; Hartman, 1994). Another interesting fact revealed by the studies is that Hispanic families tend to live and stay close to relatives for material and social support. Therefore, without the social support of this microenvironment, maintaining any new healthful habits may be less likely, if not impossible (Chavez-Martinez, 2008; Gamboa, 2010).

2.3 *Cultural Appropriateness*

Although no specific guidelines define the components of a culturally appropriate curriculum for the Hispanic audience, investigators have offered some descriptions of what a nutrition education curriculum could have (Ahluwalia et al, 1999; Kreuter et al, 2003; Crowder & Bromme, 2012; Palmeri et al, 1998). Most of the concepts mentioned in the literature are acculturation, cultural competence, cultural appropriateness, cultural targeting, and tailoring.

Acculturation

Many studies focus on the reasons for health disparities among ethnic minorities in the United States (Albright et al., 2005; Bender et al., 2013; Elder et al., 2005; Rosal et al., 2011; Mier, Ory & Medina, 2010). Acculturation has been widely used as a research variable to measure the effects of culture on health and how those effects may change as individuals integrate their culture (Siatkowski, 2007). Acculturation has been defined as the process by which immigrants adopt the attitudes, values, customs, beliefs, and behaviors of a new culture (Abraido-Lanza, White & Vasques, 2004). Acculturation is a complex, multidimensional process involving not only language but also many other sociocultural factors: country of origin, age at entry, perceived ethnicity, ethnicity of individuals with whom the person socializes, preference of language for the media and entertainment, socioeconomic status, educational level, sociocultural context, religious beliefs and values, family traditions and values, and health care principles and practices (Siatkowski, 2007). Acculturation is a process that occurs when Hispanic individuals migrate into a new culture or society and integrate their beliefs, values, and traditions while maintaining the beliefs, values, and practices of their original culture. Acculturation has many levels of acculturation and differs with every individual (Shalom & Horenczyk, 2003).

The studies regarding the relationship between acculturation and nutrition showed that the higher level of acculturation the less healthy the diet tends to be (Perez-Escamilla & Putnik, 2007; Siatkowski, 2007; Thomson & Hoffman-Goetz, 2009). A group of

Hispanic women from South Carolina indicated that their diets had changed in several ways since immigrating to the U.S.: they began eating fewer traditional foods and incorporated new foods into their diets mostly because they have access to food not available before, eating fewer meals during the day, changing cooking methods, and cooking less frequently (Chavez-Martinez, 2008).

A systematic review for comparing acculturation definitions and measurement methods in published public health research involving Latinos in the United States by Thomson & Hoffman-Goetz (2009) revealed that most scales of acculturation are either proxy measures or one-dimensional. For example, the Acculturation Rating Scale for Mexican Americans II (ARSMA II), the Hazuda scale and Bidimensional Acculturation Scale (BAS). However, these do not directly measure acculturative change and may not reflect the influences of intermediary factors (Thomson & Hoffman-Goetz, 2009): there is a need for theoretical models of acculturation within the practice of public health. This is fully consistent with the Abraido-Lanza et al., (2004) recommendation to incorporate more acculturation theory in public health programs to improve their effectiveness. Also, it is very important for the effectiveness of the public health programs to increase knowledge and awareness of the role of acculturation on Latino behaviors, health outcomes, and health care (Lara et al, 2005).

Cultural appropriateness

Culture is a complex concept to define because it embodies a wide array of components. There is no universal definition of culture accepted by social scientists, but

there is general agreement that, “culture is learned, shared, and transmitted from one generation to the next, and it can be seen in a group’s values, norms, practices, systems of meaning, ways of life, and other social regularities”. (Kreuter, Lukwago, Bucholtz, Clark & Sanders-Thompson, 2003, p.133)

The National Center for Cultural Competence (NCCC) defines culture as “an integrated pattern of human behavior which includes thoughts, communication, languages, beliefs, practices, customs, courtesies, rituals, manners of interacting, roles, relationships, and expected behaviors of a racial, ethnic, religious, social or political group” (Rodriguez et al., 2005,p.1925).

It is important to define culture because in order to provide programs and materials that are culturally appropriate, health educators must be able to identify and describe cultures and subcultures within a given population, understand how each relates to health behavior, and apply this knowledge in planning and developing activities (Kreuter et al., 2003). Health educators must understand also cultural competence, cultural appropriateness, cultural targeting and tailoring, as all relevant literature mentioned. They are sometimes misused because of their subtle differences and similarities.

Cultural competence has been defined as the ability to establish effective interpersonal and working relationships that include cultural differences by recognizing the importance of social and cultural influences on clients, considering how these factors interact, also planning interventions that take these issues into account (Beach et al., 2005). A culturally competent system is also built on an awareness of integration and

interaction of health beliefs and behaviors, disease prevalence and incidence, and treatment outcomes for different populations (Betancourt, Green, Carrillo & Ananeh-Firempong, 2003). This concept is especially cited in the literature for organizations or agencies.

Marin (1993) defined cultural appropriateness as intervention based on the cultural values of the audience: strategies should reflect the cultural characteristics of the audience (attitudes, expectancies and norms), and components should reflect behavioral preferences and expectations of the audience.

Kreuter, et al. (2003) described five main categories that define how to make health promotion programs and materials more culturally appropriate: peripheral, evidential, linguistic, constituent-involving, and sociocultural. Peripheral strategies seek to make the materials seem familiar and comfortable. The main idea is to make the visual style of health education materials reflect, describe, or express the social and cultural background of the participants. Evidential strategies seek to enhance the perceived relevance of a health issue for a given group by presenting evidence of its impact on that group. Linguistic strategies seek to make health education programs and materials more accessible and easy to understand. Constituent involving suggests including strategies such as hiring indigenous staff. Sociocultural suggests addressing health-related issues in the context of cultural values, beliefs, and behaviors characteristic of the intended audience (Kreuter et al, 2003).

Cultural targeting refers to the process of creating culturally relevant interventions, often involving the adapting materials and programs (Pasick et al., 1996).

Cultural tailoring is, “any combination of information or change strategies intended to reach one specific person, based on characteristics that are unique to that person, related to the outcome of interest, and have been derived from an individual assessment” (Kreuter et al., 2003, pp.137). The literature tends to use these two concepts as one; however, the definitions make their difference clear: tailoring is for individuals while targeting is for groups.

Ahluwalia and colleagues (1999) defined two dimensions of cultural tailoring: Surface structure (SS) and Deep Surface (DP). Surface structure involves developing interventions that involve matching materials or external manifestations of a specific culture: for example, people, places, language, clothing, brands, music, food, and locations familiar to the culture. Deep structure involves cultural, social, historical, environmental and psychological forces that guide personal and health behaviors to the target culture (Ahluwalia, Baranowski, Braithwaite, & Resnicow, 1999).

2.4 “*Celebrando la Salud*” (Celebrating Health) Nutrition Education Curriculum for Hispanics

Celebrando la Salud resulted from research by PhD candidate, América Chávez-Martínez. This study used qualitative and quantitative methods to examine Hispanic health and nutritional needs. The first stage of the project was a needs assessment to explore predisposing, enabling, and reinforcing factors toward healthy eating among Hispanics in South Carolina. The second methodology strategy was to collect information of participants’ socioeconomical characteristics, food purchasing behaviors, dietary intake, health, food security, food assistance and program participation and participants’

anthropometrics. The analysis and findings from this study showed the need for nutrition education interventions and programs targeted to this specific audience. As a result, the student Chavez-Martinez designed, “Celebrando la Salud.”

The program included seven lessons, each with a presentation, hands-on activities, and cooking demonstrations. For the pilot test the student recruited a total of 28 participants both female and male, but only 16 participants completed the program. Her results showed that on average, participants experienced significantly greater nutrition knowledge after the program than before the program. More assessment of the program was needed; therefore the program was modified for future interventions (Chavez-Martinez, 2008).

During the past six years, nutrition experts and graduate students from Clemson University developed and implemented the curriculum developed by Chavez-Martinez (2008). María Mercedes Rossi led the redesign and pilot tested the curriculum; the most recent version includes a series of 10 lessons in nutrition education, with the aim of stimulating the participants to learn and put into practice the essential concepts related to nutrition, physical activity, food safety, healthy food preparation, and food purchasing. Each approximately two-hour session includes power-point presentations, hands-on activities, recipes, and newsletters.

2.5 Systematic review of Nutrition Education Programs for Hispanic Women

The goal of this systematic review is to identify and examine the theoretical values and components of culturally sensitive interventions aimed at modifying eating and physical activity behaviors of Hispanics, to gather existing materials and curricula related to nutrition education for Hispanic adults in order to identify areas for improvement of the curricula and materials: identifying or confirming key intervention elements for Hispanics, refining the understanding of how these elements are best addressed in the interventions, and acknowledging logistic issues that may affect nutritional education programs delivery and acceptance.

1. Methods

The design of this systematic review was based on a Systematic Review conducted by Ickes and Sharma of Physical Activity Interventions in Hispanic Adults in 2012.

1.1. Study Abstraction. Two researchers will independently conduct an extensive literature search to collect studies for inclusion in this systematic review. They will use the databases Ebsco, Pubmed, GoogleScholar, MEDLINE and WOK Web of Science Citation Index Expanded and various combinations of the following keywords/terms: “Hispanic” or “Latino,” “adults,” “EFNEP,” “nutrition education,” “cultural competence,” “culturally appropriate,” “dietary,” “eating,” and “physical activity.” Additional information might arise from results of interventions with Hispanic adults.

1.2. Inclusion/Exclusion Criteria. Articles selected for this review met the following criteria: (1) description of an intervention that was tailored for Hispanics: (2)

the outcomes of the intervention include modifying knowledge, beliefs, or behavior related to nutrition or physical activity, (3) publication in the English language, (4) conducted in the United States, (5) publications in peer reviewed journals (6) the target audience for the intervention are Hispanics of 18 years old or older, (7) published between 1990 and 2013. Exclusion criteria are articles of culturally appropriate interventions for a non-Hispanic populations, culturally appropriate intervention for Hispanics under age 18, nutrition intervention or program for Hispanics focused on specific health diseases.

1.3. Data Extraction. To extract data from the studies, the two researchers will use a standardized form developed by the authors. The first author, who completed the data extraction form, will be the data extractor; the second author, who confirmed accuracy of the data on the extraction form, will be the data checker. Data from studies will be in a form with the following extracted data: lead author, publication year, age of participants, percentage and number of Hispanic participants, theoretical framework used to guide intervention design and implementation, design, outcomes, measures used to obtain collected data, description of intervention, intervention frequency and duration, culturally appropriate characteristics and main findings. Table 1 summarizes these variables.

1.4. Data Analysis. No statistical analysis or meta-analysis will be conducted. Thus, reviewed articles will extract and report the analysis in a systematic format.

2. Results

An initial search across database yielded 47 potentially eligible references. The abstracts of which were reviewed, and 25 abstracts were retained. We, then, retrieved and reviewed the full texts of the retained abstracts. Of these, 13 studies describing nutrition or physical activity interventions fulfilled the inclusion criteria defined for this review. Two of us conducted the literature search and selected articles for inclusion. In cases of disagreement, the reviewers discussed any differences in opinion until reaching a consensus.

The analysis of the articles was categorized in nine components: author, publication year, sample that includes age of participants and amount, theoretical framework used to guide intervention design and implementation, design that included intervention materials, messages, channels, settings, and recruitment strategies that matched the characteristics of a priority population, outcomes, intervention frequency and duration, culturally appropriate characteristics, and main findings. Table 1 summarizes and describes the 9 components of the 13 alphabetically listed (by first author) interventions.

Sample

This paper was limited to interventions with Hispanic adults. Nine of the interventions included Mexican American participants (2,4,5,6,8,11,13,17,18); two of the interventions referred their population as Latinas (1,20), one as Hispanics (12) and one as Puerto Ricans (19). In the thirteen selected interventions, the sample comprised adults

and low-income families. Nine interventions focused on Hispanic women (1,4,6,8,11,12,17,19,20), one focused on a Hispanic mother's child (2), two focused on obese Hispanic women (5,18), and one on Hispanic men and women (13). The number of participants within each intervention was diverse: one intervention was very small with 16 participants (13), three involved 20 to 75 (1, 2, 11), two were between 75 and 150 (4, 18), four were between 150 and 300 (5,17,19, 20), and three interventions had more than 300 participants (6, 8,12).

Theoretical framework

The interventions commonly incorporated theory. From the interventions selected, 62% (n=8) cited a theoretical framework to guide their program (1, 2, 4, 6, 11, 13, 17, 19). Three mentioned that their programs were based on Social cognitive theory and learning theories (2, 15, 19). Two were based on the Transtheoretical Model (1, 4), one on the behavioral change theory (11), another on the social ecological model (13), and one on the Lay Health Advisor Model (6). Yet, 38% (n=5) of the interventions did not mention using a theoretical framework to guide the intervention model (5, 8, 12, 18, 20).

Design

Regarding the design of the interventions, ten studies reported being randomized controlled trials (1,5,6,8,11,12,17,18,19,20), in which participants were randomly assigned to the intervention or control groups. The other three were nonrandomized trials in which each worked with one pre-determined population (2,4,18).

Outcomes and measures

For the majority of the interventions selected (n = 8) 2,4,8,11,17,18,20, the main outcome was to assess the effectiveness of a culturally appropriate nutrition and/or physical activity education program. For the other interventions (n=5) (1,6,12,13,19) the main outcome was to compare the effect of specific materials or delivery methods on a specific program. Of the measures that the interventions prioritized for the success of the program, the most frequently mentioned were physical activity (1,2,4,13,17,19), dietary intake (2,6,8,11,19), weight loss (5,6,11,18,20) and BMI (1,5,6,13,11,18). Other main measurements were acculturation (1,5,6,12,20), attendance to the intervention (12,13) and physiological assessment (8,17). One intervention also measured prevention knowledge of a specific disease (12).

Intervention description and duration

The interventions selected were targeted to Hispanics. Of all, five had Spanish names (2, 5, 6, 12, 19). The majority of the interventions, 77% (n=10), were based on interactive group lessons (2, 4, 8, 11, 12, 13, 17, 18, 19, 20). Two were comparisons of the same content with different delivery methods (5, 6), one intervention focused on maintenance via phone or newsletters (1). Duration of the interventions ranged from six weeks (8) to twenty-four months (20). 54% of the interventions lasted more than one year: from one year (5, 19) to fifteen and twenty-four months (2, 20). 38% (n=5) of the interventions lasted less than one year: from 6 to 12 weeks (4, 6, 8, 13) and ten months

(1). One intervention assessed the program after six and twelve months (1) and another intervention did twelve months maintenance of the program (8).

Culturally appropriate characteristics

The characteristics mentioned of culturally appropriate interventions varied widely. The most frequently mentioned characteristic was having bilingual educators or promotoras (2, 4, 5, 6, 11, 12, 13, 17, 18). Regarding the intervention materials, the most claimed characteristics were simplicity, colorful, and Spanish language (5, 6, 11, 13, 17, 18, 20). Three other important characteristics mentioned were having traditional recipes (2, 5, 8, 17, 20), traditional music (2, 11, 13), and familiar images and places (2, 4, 19, 20). Community and family engagement was taken into account for some of the interventions (2, 15, 18, 20). Some mentioned activities to make their intervention culturally appropriate: using soap operas (6, 19), women-only participants (11), familiar food measurements (11). One intervention was based on the theory of two dimensions of cultural tailoring by Resnicow and colleagues 1995) (1).

Main findings

The main aims of the selected interventions were to assess the effectiveness of a culturally appropriate nutrition and/or physical activity educational program or to compare the effect of specific materials or delivery methods of a specific program. Regarding the effectiveness and feasibility of the interventions, 85% (n=11) reported that the intervention was successful and feasible. One intervention reported it

was not successful (17); another reported the need for better strategies and innovations for this population (4). Other significant findings emphasized the importance of including culturally appropriate components in the intervention (1, 2, 4, 5, 11, 13, 20). Two interventions mentioned the importance of post-intervention maintenance (8, 13); one mentioned the importance of measuring acculturation in the intervention (12).

2. Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults according to lead author, publication year, age of participants, percentage and number of Hispanic participants, theoretical framework used to guide intervention design and implementation, design, outcomes, measures used to obtain collected data, description of intervention, intervention frequency and duration, culturally appropriate characteristics and main findings.

Table 1

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	1
Author	Albright, Pruitt, Castro, Gonzales, Woo & King.
Year	2005
Sample	72 Latinas between 18 and 65 years old
Theoretical framework	Transtheoretical Model
Design	Randomly assigned to home-based telephone counseling for PA plus information and/or feedback via mailed newsletter
Outcomes	To evaluate differential impact of regular, personalized counseling and longer term maintenance of PA vs. minimal print information
Measures	Stanford Seven Day Physical Activity Recall, Acculturation and BMI.
Invention description	Impact: (Phase 2) Participants were assigned to home based telephone counseling for PA plus information by mailed newsletters or just the mailed newsletters.
Frequency/duration	10 months
Culturally appropriate	The two dimensions of cultural tailoring, as defined by Resnicow and colleagues, were used: Surface structures and deep structure.
Main findings	<ol style="list-style-type: none"> 1. Theoretically grounded approaches using a combined class and home based approach can be effective in enhancing behavior. 2. Reaching populations in community settings that are supportive and in which the participants feel comfortable can facilitate recruitment and retention.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	2
Author	Bender, Nader, Kennedy & Gahagan
Year	2013
Sample	33 mother-child dyads, low income Mexican community.
Theoretical framework	Social cognitive learning theory
Design	A 2 phase intervention (pre-posttest)
Outcomes	To evaluate the feasibility of "Vida Saludable"
Measures	Children's consumption of sugar sweetened beverages and mothers physical activity.
Invention description	Vida Saludable: Phase 1 included 4 biweekly interactive group lessons. Phase 2 a trained promotora delivered the lessons in Spanish and English
Frequency/duration	15 months
Culturally appropriate	Trained promotoras, lessons in Spanish, cooking with cultural foods, dancing with cultural music, images of Hispanic families, Community engagement
Main findings	<ol style="list-style-type: none"> 1. A culturally relevant intervention was feasible. 2. Using community engagement approach is an important strategy to improve program relevance and recruitment. 3. Social support is important for maintaining healthy behaviors.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	3
Author	Collins, Lee, Albright & King
Year	2004
Sample	82 low-income multiethnic women (mostly Mexican Americans), 18 to 65 years old.
Theoretical framework	Transtheoretical Model
Design	Non-randomized
Outcomes	To address barriers and encourage initiation, adoption and maintenance of physical activity
Measures	Exercise- knowledge, Perceived barriers, self-efficacy, activity scale, self-reported walking, motivation.
Invention description	Impact: (Phase 1). Weekly skills building classes designed to prepare women to become more physically active.
Frequency/ duration	8 week
Culturally appropriate	Bilingual educators, familiar places, activities and resources, beliefs and values, self-esteem.
Main findings	<ol style="list-style-type: none"> 1. Working with this population requires innovative, community-based strategies to recruit and retain participants. 2. There is a need to continue to develop better strategies of retaining participants.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	4
Author	Cousins, Rubovits, Dunn, Reeves, Ramirez & Foreyt.
Year	1992
Sample	168 obese Mexican American women, ages 18 to 45 years old.
Theoretical framework	Not mentioned
Design	Randomly assigned the sample into 3 groups.
Outcomes	To compare a family based intervention with a traditional program oriented to the individual for achieving weight loss.
Measures	Weight loss or maintenance, BMI.
Invention description	The three groups were: A) the manual only comparison group. They only received the bilingual manual "Cuidando el corazon." B) the individual group. They received the manual, attended 24 weekly classes and 6 monthly maintenance classes. C) the family group. They attended 24 weekly classes and a modified version of the manual that included family changes.
Frequency/ duration	One year
Culturally appropriate	Recipes for fat modified traditional Mexican American foods - Spanish manual - compatibility with cultural norms and values by bilingual health educators.
Main findings	<ol style="list-style-type: none"> 1. The results suggested that a culturally and linguistically appropriate program can achieve significant weight reduction among Mexican Americans. 2. The two group interventions were more effective than the information only. 3. Support from the group and instructor was a relevant factor in the weight loss. 4. The family intervention was a slightly more effective than the program for the individuals, although it the difference was not significant.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	5
Author	Elder, Ayala, Cambell, Slymen, Lopez-Madruga & Barquero
Year	2005
Sample	357 Mexican American, 18 or older.
Theoretical framework	Lay Health Advisor Model
Design	Participants were randomly assigned to 1 of 3 conditions.
Outcomes	To examine two experimental approaches to tailor dietary behavior change.
Measures	24-hr dietary recall from the Nutrition Data System, Acculturation from the Acculturation Rating Scale for Mexican Americans developed by Cuellar et al, Height, weight and BMI, Waist, hip and waist-hip ratio.
Invention description	<i>Secretos de la Buena Vida</i> : Participants were assigned to 1 of the 3 conditions: promotoras-tailored print material, delivered by mail; tailored print only, delivered by mail; off-the-shelf Latino-targeted materials also delivered by via mail.
Frequency/duration	12 weeks
Culturally appropriate	The use of novelas for entertainment Tailored newsletters Spanish speaking promotoras
Main findings	<ol style="list-style-type: none"> 1. The response to the promotoras condition was superior to the other groups, although the three approaches demonstrated a positive reaction. 2. Feasibility and possible utility of combining several communication-related intervention approaches with the promotoras model.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	6
Author	Howard-Pitney, Winkley, Albright, Bruce & Fortmann.
Year	1997
Sample	351 Hispanics born in the US and Mexican Americans, mean age 31 years old.
Theoretical framework	Not mentioned
Design	Sample was randomly assigned to receive the Stanford Nutrition Action Program or an existing general nutrition curriculum.
Outcomes	To test the effectiveness of the Stanford Nutrition Action Program (SNAP).
Measures	Dietary assessment and Physiological assessment.
Invention description	Randomized design was used to test: SNAP intervention, a classroom-based followed by a maintenance intervention. And General Nutrition Intervention, based on the EFNEP program.
Frequency/ duration	6 week
Culturally appropriate	Ethnic foods - discussion of the traditional nutrition habits of Hispanic women
Main findings	<ol style="list-style-type: none"> 1. The SNAP curriculum was significantly more effective in achieving fat-related nutritional changes than the general nutrition curriculum. 2. The biweekly maintenance intervention in the SNAP curriculum improved the outcomes.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	7
Author	Limberg, Stevens, Lopez, Kauffman, Calderon & Cervantes.
Year	2012
Sample	47 Mexican or Mexican-American women, 18 or older.
Theoretical framework	Behavioral change strategies
Design	Three separate interventions cohorts of 15-17 participants were assembled and met on different days and times.
Outcomes	To assess the feasibility of a culturally-appropriate weight loss intervention targeting obese Spanish speaking Mexican women.
Measures	Height and weight, dietary intake with the Frequency Block Food 2005 Questionnaire Spanish Version, content and conduct with check in during the sessions.
Invention description	The intervention consisted of 6 months of weekly group sessions followed by 6 months of monthly group meetings. All sessions lasted 90 min. Sessions started with individuals weigh and continued with a group check- in where the participants could ask questions.
Frequency/ duration	12 months
Culturally appropriate	Women only, minimal written material, Mexican traditions, measurements (i.e cups, tablespoons or grams) - adaption of food for limited literacy, traditional beliefs (i.e dancing to a salsa dancing exercise
Main findings	<ol style="list-style-type: none"> 1. It is feasible to develop and implement culturally appropriate behavioral lifestyle interventions for obesity treatment in Mexican American women. 2. A culturally coherent recruitment strategy can be successful. 3. A salient limitation in the program was the retention rates.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	8
Author	Lopez & Castro
Year	2006
Sample	447 Hispanic women, 18 or older.
Theoretical framework	Not mentioned
Design	Randomized community trial involving a two group pre/posttest.
Outcomes	To examine factors related to the participation of these women and associated program-related outcomes.
Measures	Attendance, posttest cancer prevention knowledge and posttest cancer screening, acculturation
Invention description	"Companeros de la Salud" the cancer prevention intervention was the major intervention group and it was compared with a no cancer oriented family mental health group.
Frequency/duration	Not mentioned
Culturally appropriate	Bilingual/bicultural promotoras
Main findings	<ol style="list-style-type: none"> 1. Higher levels of acculturation were associated with higher levels of education and with higher access to private health insurance. 2. Women with lower levels of acculturation and more frequent church attendance were the most frequent program attendees. 3. Women who attended more frequently had better results in the score posttest

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	9
Author	Martyn-Newmeth, Vitale & Cowger
Year	2010
Sample	16 Mexican American men and women between 39 to 64 years old with type 2 diabetes.
Theoretical framework	Social ecological model
Design	A nonrandomized pretest/posttest trial, weekly exercise sessions of low impact.
Outcomes	To examine the feasibility and effectiveness of a community-based, culturally focused, exercise program for adults in the Hispanic community with type diabetes 2.
Measures	BMI, Well-being Questionnaire-12, Daily exercise log records, session attendance and completion rates.
Invention description	Weekly exercise sessions led by English and Spanish registered nurses. A 60 minute, low impact exercise routine was developed by an exercise physiologist.
Frequency/duration	12 weeks of a 60 minute sessions
Culturally appropriate	Bilingual materials, bilingual instructors/ peer leader, culturally appropriate dancing and music, simple percussion instruments (ie, maracas by filling bottles with beads)
Main findings	<ol style="list-style-type: none"> 1. Spanish was the language of preference for 88% of the sample. 2. Their findings suggested that a culturally focused exercised program of this type is indeed effective and feasible. 3. It is important to follow the participants over time to determine maintenance. 4. Social support was identified as a strong motivator of PA.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	10
Author	Poston, Haddock, Olvera, Suminski, Reeyes, Dunn, Hanis & Foreyt.
Year	2001
Sample	269 Mexican American women between 18-65 years old.
Theoretical framework	Social support theory and social cognitive theory.
Design	Randomized trial, the study used a prospective block design. Intact groups of women were randomized to the treatment or control conditions.
Outcomes	To evaluate a culturally appropriate intervention to increase activity in overweight Mexican American women.
Measures	7 day physical activity recall (PAR), anthropometric assessments, psychosocial questionnaires
Invention description	Group assignment to either a 6-month intervention program followed by 6 months of weekly follow-up in peer-led groups or to a wait-list control group that did not receive the intervention.
Frequency/ duration	12 months
Culturally appropriate	Bilingual materials, Bilingual instructors/ peer leaders, native diets, culturally tailored diets and activity modification, social support.
Main findings	<ol style="list-style-type: none"> 1. The intervention did not increase physical activity in this population 2. Data suggested that the study designs using traditional control groups might not be appropriate for this type of community 3. It is possible that other, more important barriers to physical activity were not adequately addressed. 4. Even though the intervention was modest, some participants reported that the exercise was very difficult.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	11
Author	Poston, Reeves, Haddock, Stormer, Balasubramanyam, Satterwhite, Taylor & Foreyt.
Year	2003
Sample	108 Mexican American women, aged 21 to 65, BMI equal or greater than 27kg/m ²
Theoretical framework	Not mentioned
Design	Randomized assigned to Orlistat and lifestyle modification group (OLM) or to a wait list control group (WLC).
Outcomes	To evaluate the effectiveness of a culturally appropriate lifestyle intervention combined with Orlistat in producing weight loss.
Measures	Body weight, BMI, waist circumference, blood pressures, glucose and lipids, side effects/adverse events and medication use/ adherence.
Invention description	24 weekly intervention classes, six bimonthly, and three monthly maintenance classes with a Register Dietitian. Each class lasted 60 min. The OLM group received instructions to take Orlistat t 120mg, 3 times per day
Frequency/ duration	12 months
Culturally appropriate	Bilingual materials - bilingual Mexican American instructor - culturally tailored rationales for diet and exercise modification - family involvement
Main findings	<ol style="list-style-type: none"> 1. The study demonstrated the effectiveness of an intervention combining Orlistat and lifestyle modification with Mexican American women. 2. Patients treated with Orlistat lost significantly more weight than those in the control group.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	12
Author	Rosal, Ockene, Restrepo, White, Borg, Olendzki, Scavron, Candib, Welch & Reed
Year	2011
Sample	252 Puerto Rican women, middle age, low literacy rate.
Theoretical framework	Social cognitive theory
Design	Randomized control trial, 128 randomized to the control condition and 124 randomized to the intervention condition.
Outcomes	To test whether a theory-based, literacy and culturally tailored self-management intervention, improves glycemic control
Measures	24-h recalls of dietary intake, physical activity recall, blood glucose self-monitoring.
Invention description	"Latinos en Control": 12 weekly sessions and a follow up phase of 8 monthly sessions. The first session was conducted as an individual 1-h meeting in the participant's home. The remaining sessions were in group and lasted 2.5-h.
Frequency/duration	1 year
Culturally appropriate	Educational soap opera, bingo, traditional foods
Main findings	<ol style="list-style-type: none"> 1. Strategies to sustain these improvements are needed. 2. This theory-based intervention targeting patient's diabetes knowledge, self-efficacy and self-management behaviors was successful in producing significant improvements. 3. Skill building through hand-on- activities facilitated the development of self-efficacy and behavior skills.

Table 1 (continued)

Summary of Culturally Appropriate Nutrition Education Interventions in Hispanic Adults

Number	13
Author	Toobert, Strycker, King, Barrera, Osuna & Glasgow
Year	2011
Sample	280 Latinas between 30-75 years old
Theoretical framework	Not mentioned
Design	Randomized assigned the sample to usual care or to "Viva Bien" program.
Outcomes	To test the long term effects of a previously successful, culturally adapted, multiple-health-behavior change program "Viva Bien".
Measures	Acculturation, Diabetes Problem Solving, Self-efficacy, Physical Activity, Height and weight.
Invention description	"Viva Bien": A 2 1/2 day retreat, weekly meetings for the first 6 months, semi-monthly for months 6-12. Monthly for months 12-18 and bi-monthly for months 18-24. The intervention continued with 4-h facilitator led meetings, providing 1h each of instruction and practice.
Frequency/duration	24 months
Culturally appropriate	Addressed sociocultural, economic and environmental context important for Latinas, Mediterranean diet adapted for Latino nationality subgroups, photographs of Latinas, Spanish power point colorful and Spanish pamphlets.
Main findings	<ol style="list-style-type: none"> 1. "Viva Bien" was effective in improving and maintaining some psychosocial, behavioral and biological outcomes for Latinas. 2. Participants preferred the program in Spanish rather than in English.

3. Discussion

The purpose of this systematic review of the literature (published between 1990 and 2013) was to summarize the existing evidence related to culturally appropriate interventions with Hispanics: to identify and examine the theoretical values and components of culturally sensitive interventions designed for modifying eating and physical activity behaviors of Hispanics in order to identify areas for improvement of the curricula and materials. Based on a review of the resulting 13 interventions, it is evident there is a need for more interventions that specifically target high-risk ethnic populations, including Hispanics. Overall, the findings demonstrated that culturally appropriate interventions are well received and effective among Hispanics as evidenced by the different studies mentioned in the review of the literature. However, there is an existing gap in determining a curriculum or educational materials as culturally appropriate. Only one of the interventions used a cultural framework. Most of the other interventions were based on theoretical frameworks, especially the social cognitive theory.

Another important factor is that most of the samples used in the intervention were Mexican American, which does not represent the diversity of the Hispanic population living in the United States. Overseeing the ethnic variations and cultural differences among all Hispanic cultures could become a barrier in implementing a nutrition education intervention. With the increase of obesity and chronic disease among this population, the two most important measures to consider for nutrition intervention for Hispanics were clearly physical activity and weight control. Previous research indicated the importance of acculturation of this specific population being significantly associated with eating and

exercising behavior (Mier, Ory & Medina, 2010)—although only five of the interventions measured the effect of acculturation on the intervention outcomes (1, 5, 6, 12, 20).

Interventions were more effective when they lasted more than one year. It was clear that nutrition education interventions should last at least six weeks. Also, the review found that maintenance is a key component for better results after the intervention is finished. Regarding the culturally appropriate components for this type of interventions some were more frequently mentioned than others. But it is clear that, for the effectiveness of this type of intervention especially for this population, it is crucial to include culturally appropriate components. The ones mentioned the most were having a Spanish name for the intervention, traditional recipes, activities and music. This review also found that only two interventions (4, 11) mentioned including norms, beliefs, values and characteristics of the Hispanic population. The findings concluded that two components were very significant for this population: having bilingual and familiar educators or promotoras and social support from family, familiar peers, or staff. This was similar to results found in a review by Pekmezi and colleagues (2010): most programs included the usual components, but fostering social support seems to be particularly relevant to health promotion in Latinos (Pekmezi, Marquez & Marcus-Blank, 2010).

4. Conclusion

More research is needed to soundly identify the essential components of culturally appropriate curricula for a Hispanic audience. However, components such as the target group's native language, traditional recipes, and traditional and familiar activities have proven to significantly increase the effectiveness of providing nutrition education that create positive changes in the target audience's lifestyle. Additionally, taking into account social support is essential in this population as well as having an educator they can relate to, understand clearly and feel like is one of their own. It is key to make this population feel familiar and at ease with the educational materials and be able to reach them in their own native language in order for any kind of intervention to be successful, life changing, and long lasting.

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CHAPTER THREE

3 MATERIALS AND METHODS

3.1 Overview

The primary purpose of this research was to design and test a culturally appropriate tool that can assure that nutrition and health curricula are appropriate for the Hispanic population, and transmitted efficiently and accurately. This study also implemented the developed tool to assess the cultural appropriateness of a curriculum designed for Hispanic women in South Carolina titled “Celebrating Health/Celebrando la Salud.” This chapter describes in detail, the methods and procedures for accomplishing the research purpose and specific aims of the study.

3.2 Study Design

The research design of this study consisted of a triangulation of methods including various qualitative and quantitative methods (i.e. literature review, surveys, focus groups, curricula content analysis) and sources of data collection (i.e. EFNEP Coordinators, EFNEP practitioners/educators, and EFNEP participants) for developing and testing a culturally appropriate tool that can assure that the nutrition and health information is appropriate for the Hispanic population and that the intended message is transmitted efficiently and accurately. To achieve the research purpose and specific aims,

this study took a systematic approach involving four phases: 1) formative research of the concept of culturally appropriateness in nutrition education programs for Hispanics through a systematic literature review and interviews with EFNEP State Coordinators/staff; 2) design a conceptual framework for developing a culturally appropriate evaluation tool to assess nutrition education curriculum for Hispanics; 3) developing and testing a culturally appropriate evaluation tool to assess nutrition education curriculum for Hispanics; and 4) implementing the evaluation tool designed in this study to assess the level of cultural appropriateness of a nutrition education curriculum designed for Hispanic women in South Carolina

Protection of Human Subjects

Prior to participant recruitment, the Clemson University Institutional Review Board (IRB) approved the study protocols and data collection materials (Appendix A). An informed consent form was obtained from each participant (Appendix B).

3.3 Data Collection Methods and Procedures

Below is a description of the data collection methods, sampling and analysis techniques used for each phase of this study.

Phase 1: Formative research of the concept of cultural appropriateness in nutrition education programs for Hispanics

This phase aimed to examine domains that best defined cultural appropriateness from the health/nutrition education perspective, explored methods/tools for assessing cultural appropriateness in nutrition education curricula, and identified needs and/or areas for further research.

First, in order to identify domains related to cultural appropriateness in nutrition education curricula for Hispanics, the author explored peer review articles conducted in the United States from 1990 to 2013 that included combinations of the following key terms: “Hispanic” or “Latino,” “adults,” “EFNEP,” “nutrition education,” “cultural competence,” “culture”, “culturally appropriate,” “dietary,” “eating,” and “physical activity.” Data extraction and analysis were based on a previous systematic review conducted for physical activity interventions in Hispanic Adults (Ickes & Sharma, 2012).

Secondly, during the period of January 2014 and March 2014, a web-based survey (Survey Monkey, 2014) (Appendix C) was sent to State EFNEP coordinators (n=125) in all US states and territories to explore methods/tools for assessing cultural appropriateness in nutrition education curricula and other program needs. Before being sent to the targeted audience, the survey was adapted from an online nutrition education evaluation survey (Baker, S., & Rogers, K, n.d). Thirty-nine State Coordinators responded to the web-based survey (response rate 39%). The survey consisting mostly of closed-ended questions (response options: yes/no) included a section for responders’ comments. Quantitative data was analyzed through a frequency table (Microsoft EXCEL, 2010) involving two operations: 1) separating the qualitative material into

codable units, and 2) establishing systems of categories that can be applied to the unitized material (Guetzkow, 1950).

Phase 2: Development a Conceptual Framework for a culturally appropriate tool to assess nutrition education for Hispanics

This phase aimed to design a conceptual framework of cultural appropriateness for evaluating nutrition education curricula. This conceptual framework was developed based on three components: 1) findings from the formative research phase; 2) previous conceptual models of cultural appropriateness (Ahluwalia et al, 1999; Kreuter et al, 2003; Crowder & Bromme, 2012; Palmeri et al, 1998); and 3) existing evaluation tools for assessing cultural appropriateness in health/nutrition related interventions (National /Black Child Development Institute, 2012; Crowder & Broome, 2012; Portland State University, 1995). Table 2 represents the conceptual variables and or domains selected in this phase to guide how best to assess cultural-appropriateness in nutrition education curricula.

Phase 3: Design and pilot test an evaluation tool for assessing cultural appropriateness of nutrition education programs for Hispanics

This phase aimed to design an evaluation tool for assessing the cultural appropriateness of nutrition education curricula and learning materials targeting the Hispanic audience. The development process of the evaluation tool integrated the conceptual framework of this study with items that are similar to other instruments

reported in the literature (National Black Child Development Institute, 2012; Crowder & Broome, 2012; Portland State University, 1995).

The first version of the evaluation tool of this study was based on a cross-cultural adaptation of the content domains, type of questions and response options from the “Cultural Competence Improvement Tool”; which was originally developed by the National Black Child Development Institute for review cultural competence in existing health and nutrition curricula designed for the African-American population. Once the first draft of the evaluation tool was designed, a multidisciplinary committee of experts from the fields of nutrition education, food science agriculture education, and health promotion reviewed the items of the evaluation tool for content validity (Appendix D).

The revised version of the tool (Appendix E) was assessed for practical and cultural relevance by ten EFNEP Hispanic educators from various regions of the United States. In total, eight EFNEP Hispanic educators from Texas A&M University, Michigan State University, Washington State University, Ohio State University and Clemson University assessed the revised version of the tool for practical and cultural relevance and provided qualitative feedback to improve the tool.

Phase 4: Implementing the evaluation tool to assess cultural appropriateness of a nutrition education curriculum designed for Hispanic women

This phase aimed to implement the evaluation tool developed in this research study for assessing the cultural appropriateness of the nutrition education curriculum “Celebrating Health/Celebrando la Salud.” It is important to note that this phase included

two major steps and triangulation of methods (i.e. curriculum content review and focus groups) and various sources of information (i.e. EFNEP Hispanic nutrition educators and EFNEP Hispanic participants) to assess the overall cultural appropriateness of the nutrition education curriculum, Celebrating Health/Celebrando la Salud.

Celebrating Health/Celebrando la Salud Curriculum

Celebrating Health/Celebrando la Salud (CS) is a nutrition education curriculum targeting Hispanic women with children and living in South Carolina. It includes a series of ten lessons focusing on concepts related to nutrition, physical activity, food safety, food preparation, and food resource management. CS was designed based on Social Cognitive Theory (SCT), and includes a combination of educational strategies such as power point presentations, cooking, and goal setting/self-regulation activities. A Spanish-speaking EFNEP nutrition educator teaches each approximately two-hour-long lesson.

Evaluation of the Level of Cultural Appropriateness of Celebrating Health-Celebrando la Salud through a Curriculum Review conducted by EFNEP Hispanic nutrition educators.

EFNEP Hispanic nutrition educators (n=10) from various regions of the United States were invited to review and rate the curriculum CH using the evaluation tool designed for this study. Eight educators rated the cultural appropriateness of the curriculum and gave feedback to improve the evaluation tool.

Evaluating the Level of Cultural Appropriateness of Celebrating Health-Celebrando la Salud through Focus Groups Conducted with EFNEP Hispanic participants.

In order to identify the quality and level of cultural appropriateness of CH curriculum, two independent focus groups were conducted with Hispanic women (n=15) from Upstate South Carolina between May and June 2014. The inclusion criteria were Hispanic women older than eighteen years old, who speak Spanish and had received the complete implementation of CH curriculum through the SC EFNEP program. Researchers collaborated with leaders from the Community Center Café Cultura to recruit participants using flyers and phone calls. Prior to the focus groups, each participant was required to sign an informed consent form (Appendix B).

Conducted in Spanish and using a script of open-ended questions (Appendix F), the focus groups were tape-recorded and transcribed verbatim. Participants received a \$25 gift card, refreshments, and child-care. Transcripts from the focus group provided qualitative data that was content analyzed in Spanish, through codification of recurring themes: the researcher read each transcript to identify a coding scheme and categorize the answers to each questions. The researcher established a set of rules to define the coding procedure: for example, a concept was considered a theme if mentioned by more than five participants. Finally, the results were translated into English and the main findings were summarized in a table.

This method was used previously in the development of a focus group with this population for a research study and it was successful in recruiting the necessary information (Mcquerry, 2009)

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CHAPTER FOUR

4 DESIGN AND PILOT TESTING OF AN INSTRUMENT TO EVALUATE CULTURAL APPROPRIATENESS OF NUTRITION EDUCATION MATERIALS FOR HISPANICS

Previous chapters discussed the rationale of the research methods used in this study. The purpose of this chapter is to: 1) share results of this study, 2) review the evaluation tool design process, and 3) discuss the pilot testing of the evaluation tool and its results.

Results of Phase 1: Formative research of the concept of cultural appropriateness in nutrition education programs for Hispanics

Phase one consisted of a systematic literature review aimed at describing, identifying, and examining the terms, theoretical values, and components of culturally sensitive interventions with the objective of modifying eating habits and physical activity behaviors in Hispanics. The extensive systematic literature review focused on the following topics: characteristics of the Hispanic culture such as the background of the Hispanic population in the U.S and South Carolina, definition of cultural appropriateness and relevant concepts, and existing nutrition education programs for Hispanics. An initial search across existing databases of nutrition education programs for Hispanics in the US yielded 47 potentially eligible references. The abstracts of the articles were reviewed, and 25 abstracts were retained. Finally, 13 studies describing nutrition or physical activity interventions fulfilled the inclusion criteria defined by the review.

The researcher classified the identified research into the following categories: author, publication year; sample that includes number and ages of participants; theoretical framework used to guide intervention design and implementation; design that included intervention materials, messages, channels, settings, and recruitment strategies that matched the characteristics of a priority population; outcomes, intervention frequency and duration; culturally appropriate characteristics; and main findings. Also it was examined the contents of existing nutrition education materials and curricula developed for Hispanic adults to identify areas of improvement. The articles are presented in Table 1, located in chapter two.

The results regarding the samples selected in the interventions were limited to interventions with Hispanic adults. Nine of the 13 interventions included Mexican-American participants. In the thirteen selected interventions, the sample comprised adults and low-income families. The interventions commonly incorporated theory in their interventions. From the interventions selected, 62% (n=8) cited a theoretical framework to guide their program. Three mentioned that their programs were based on Social cognitive theory and learning theories. Two were based on the Transtheoretical Model, one on the behavioral change theory, another on the social ecological model and one on the Lay Health Advisor Model. Yet, 38% (n=5) of the interventions did not mention using a theoretical framework to guide the intervention model.

Of the measures that the interventions prioritized for the success of the program, the most frequently mentioned were physical activity, dietary intake, weight loss and BMI changes. Other measurements mentioned were acculturation, attendance to the

intervention and physiological assessment. Duration of the interventions ranged from six weeks to twenty-four months. 54% of the interventions lasted more than one year: from one year to fifteen and twenty-four months. 38% (n=5) of the interventions lasted less than one year: from six to twelve weeks and ten months. One intervention assessed maintenance of the program after six and twelve months and another intervention did twelve months maintenance of the program.

A relevant concept for this study was the characteristics mentioned of culturally appropriate interventions, the results varied widely. The most frequently mentioned characteristic was having bilingual educators or promotoras in nine of the 13 interventions reviewed. Regarding the intervention materials, the most claimed characteristics were simplicity, colorful, and Spanish language (n=7). Three other important characteristics mentioned were having traditional recipes, traditional music and familiar images and places. Community and family engagement was taken into account for some of the interventions (n=4). Some examples of activities to make their intervention culturally appropriate mentioned were: using soap operas women-only participants, familiar food measurements.

According to the effectiveness and feasibility of the interventions, 85% (n=11) reported that the intervention was successful and feasible. One intervention reported it was not successful (17); another reported the need for better strategies and innovations for this population (4). Two interventions mentioned the importance of post-intervention maintenance and one mentioned the importance of measuring acculturation in the intervention.

This phase also used a survey instrument to collect data from 125 State EFNEP coordinators in all US states and territories. The purpose was to assess program needs and evaluation tools of educational materials designed for Hispanic audiences. The Web-based survey was sent between January 2014 and March 2014 via Survey Monkey (Appendix C). Thirty-nine of 125 EFNEP coordinators responded to the survey. The results of the survey were analyzed by coding procedures. First, the researcher transformed the qualitative data into codes using 1 for YES and 0 for NO (Microsoft EXCEL, 2010). Then, the researcher compared the frequency of answers with the qualitative data obtained in the survey. Table 2 displays results of the analysis.

Table 2

Results of Online Survey by EFNEP State Coordinators				
Questions	Responses			Total
	Yes	No	N/A	
Have a specific curriculum for Hispanics?	12	27	0	39
Have a curriculum in Spanish?	25	12	2	39
Consider the curriculum they have for Hispanics to be culturally appropriate?	20	13	6	39
Have a tool to evaluate cultural appropriateness?	2	35	2	39
Consider important having a tool to evaluate cultural appropriateness?	31	4	4	39

Of 39 respondents, 28.21% (12) used a specific curriculum for Hispanics in their nutrition education programs. The curriculum mentioned by five EFNEP coordinators that was used by EFNEP Hispanic audiences was “Eating Smart Being Healthy.” In addition, 67.57% of the coordinators answered that they used a curriculum in Spanish for their target Hispanic population.

For this investigation, it was important to learn what the state coordinators considered to be culturally appropriate for a curriculum for Hispanics. From the convenience sample, 63.64% of the coordinators answered that they considered their curriculum culturally appropriate. The most frequent answers regarding the components that made the curriculum culturally appropriate dealt with the use of popular foods and recipes. Coordinators included, as examples, meal planning and preparation strategies. They mentioned that the materials they usually used are in Spanish and the materials are translations. A common practice was that their program was culturally appropriate because their staff was from the community or Hispanic educators. 94.44% replied not having a tool to evaluate the cultural appropriateness of their nutrition education materials; 5.56% replied having one, but they did not provide details about it. The majority of the coordinators, 93.96%, considered having an evaluation tool for cultural appropriateness would be helpful and useful.

Unanswered questions were mostly from coordinators who do not have a Hispanic audience in their programs.

Results Phase 2: Developing a Conceptual Framework to guide developing a culturally appropriate tool to assess nutrition education for Hispanics

The literature reflects that culturally sensitive or culturally appropriate interventions are effective among individuals of various cultures (Albright, Pruitt, Castro, Gonzales, Woo, & King, 2005; Bender, Nader, Kennedy, & Gahagan, 2013; Elder, Ayala, Cambell, Slymen, Lopez-Madruga, Engelberg, & Barquero, 2005; Rosal, Ockene, Restrepo, White, Borg, Olendzki, Scavron, Candib, Welch, & Reed, 2011; Mier, Ory & Medina, 2010). However, for culturally specific interventions, educators need a better understanding of how to evaluate both the cultural appropriateness and the cultural effectiveness of interventions, as well as identifying and understanding how each culture relates to healthy behaviors: and apply this knowledge in planning and developing activities (Crowder & Broome, 2012; Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003). Factors such as familiar roles, communication patterns; beliefs regarding personal control, individualism, collectivism, and spirituality; and other individual and social characteristics are not inherently “cultural” but may help define culture for a given group if they have special meaning, value, identity, or symbolism for the group members (Kreuter et al, 2003). No specific guidelines define components to be included in a culturally appropriate curriculum suitable for the Hispanics audience.

A gap exists in the application of models or frameworks to guide evaluation of the vital components of culturally based interventions (Crowder & Broome, 2012). To identify what a nutrition education curriculum must have to be culturally appropriate, investigators have described some models and frameworks. Ahluwalia and colleagues (1999) defined two dimensions of cultural tailoring: Surface structure (SS) and Deep Surface (DP). Surface structure involves developing interventions that involve matching

materials or external manifestations of a specific culture: for example, people, places, language, clothing, brands, music, food, and locations familiar to the culture. Deep structure involves cultural, social, historical, environmental, and psychological forces that guide personal and health behaviors of the target culture. This model can be an effective cultural tailoring strategy in designing culturally sensitive curricula (Albright et al., 2005).

Kreuter et al. (2003) described five main categories of definitions of how to make health promotion programs and materials more culturally appropriate: peripheral, evidential, linguistic, constituent-involving, and sociocultural.

Peripheral strategies seek to make the materials seem familiar and comfortable: using certain colors, images, fonts, pictures of group members, or declarative titles that overtly convey relevance. The main idea is to make the visual style of health education materials reflect, describe, or express the social and cultural background of the participants. (p.135)

Evidential strategies enhance the perceived relevance of a health issue by presenting evidence of its impact on that group. Reflecting a real problem directly affecting the participants can raise their awareness or concern. (p.135)

Linguistic strategies seek to make health education programs and materials more accessible and easy to understand by providing them in the dominant or native language of the target group. (p.135)

Constituent-involving strategies suggest including hiring staff members who are indigenous to the population served, training paraprofessionals or “natural helpers”

drawn from the target group, and adhering to the “principle and process of participation” identifying substantive roles for lay community members in planning and decision making for programs. (p.136)

Sociocultural strategies suggest including health-related issues in the context of group cultural values, beliefs, and behaviors characteristics of the intended audience. (p.136)

Ahluwalia et al. (1999) referred to these characteristics as the “deep structure” of cultural sensitivity (p.12). Ahluwalia et al. (1999) and Kreuter et al. (2003) are clearly similar regarding the uses of matching materials to “surface” characteristics of a target population and, as peripheral approaches, the target’s audience receptivity and acceptance of messages can be higher.

Crowder and Bromme (2012) created a framework with the ecological validity model to evaluate the cultural appropriateness of interventions designed for diverse groups:

Language—using appropriate language will bring effective communication. Using the wrong concepts can lead to misunderstandings. It is also important to consider the literacy skills of the participants.

Persons—similarities between educator and the participants help shape relationships.

Metaphors—shared symbols, concepts, and metaphors reduce resistance, increase motivation, and strengthen the cultural environment.

Content: cultural knowledge about values, customs and traditions shared by the participant's culture that can be incorporated into intervention messages.

Concepts—refer to the constructs within a theoretical psychosocial model.

Goals—outcomes of the intervention should be aligned with participants' values, customs and traditions. Consider the real needs of participants.

Methods—refer to procedures used to deliver the program.

Context—refers to the social environment of the intervention.

In the article *Multiple Perspectives in Nutrition Education Needs of Low Income Hispanics*, Palmeri, Auld, Taylor, Kendall & Anderson recommend having a glossary that would improve the paraprofessionals' understanding and accuracy of the cultural background of the participants. Additionally, they mentioned that some of their findings showed that the paraprofessionals needed and wanted sources and training in techniques for effectively teaching low income Hispanics (Palmeri et al., 1998).

According to the literature review regarding approaches to Hispanic women, some of the main barriers of Hispanic women enrolled in healthy eating interventions were that they did not feel confident regarding their ability to select healthful foods at the store, or expressed lack of time to cook healthier food. Other barriers dealt with higher prices of healthier food, low income, transportation, language barriers, lack of availability of preferred foods, lack of family support, conflicting messages, and the need to share the house with other persons (Gamboa, 2010; Strolla, Gans & Risica, 2006; Mcquerry, 2009).

The findings of the literature review developed for this investigation of components in culturally sensitive interventions to modify eating and physical activity behaviors in Hispanics showed that the most used and effective strategies were a trained “promotora” who delivered the lessons in Spanish, a cooking class with cultural foods, dancing with cultural music, bilingual and ethnic lessons, small and large groupings, and community/local resources familiar to Latinas. It is also important to address beliefs and values related to Latinas (family duties and self-esteem), visual images of typical Hispanic families; community engagement, compatibility with cultural norms and values (presented by bilingual health educators); food measurements (i.e. cups, tablespoons, grams); social support networks; involving family members (family nights); and colorful Spanish pamphlets.

Frameworks, models, and findings in the literature reviews (described above) suggest inclusion and evaluation of the following components for cultural appropriateness in a curriculum summarized in Table3.

Table 3.

Conceptual Framework of Variables to Measure in the Evaluation Tool

Variables	Question	Example	Literature funding
<i>Appearance</i>			
Design of the educational materials	Do the curriculum materials include colors, images and pictures that reflect the participant's culture?	Images or pictures of Hispanic families and women, cheerful colors.	SS, Peripheral strategies: Kreuter et al 2006.
<i>Language</i>			
Concepts	Is the curriculum written in an appropriate learning level for the audience? (age, educational level, ethnicity, socioeconomic status).	Key terms and any potentially unfamiliar words are defined clearly.	DS, (Palmeri et al.,1998; Kreuter et al., 2006.
	Is the curriculum written according to the appropriate cultural differences of the audience?	Spanish learning materials, worksheets and activities. Informal terminology, food measurements (i.e. cups, tablespoons or grams).	
	Does the curriculum include modifications and/or supplemental terms to accommodate the languages spoken by the different cultural backgrounds of the participants?	Glossary or different options for the most popular terms.	
<i>Content</i>			
Activities	Does the curriculum include activities related to the participant's cultural background?	Dancing, traditional music, traditional food, soap operas, games from different countries.	DS, Ecological Model (Crowder & Bromme, 2012).
	Are the curriculum-take home activities easy to		

	understand and do they offer the possibility to engage their family members with the participants?	Clear instructions, possibilities of inclusion of all family members.	
Recipes	Does the curriculum show flexibility in food choices related to the participant's cultural background? Does the curriculum include food products and recipes appropriate for the social economic status of the participants?	Healthy recipes that include traditional dishes from different cultures, food products that are familiar to the participants, child-friendly recipes (corn tortillas, rice, beans).	(Gamboa, 2010; Colleen, 2009; Strolla, Gans & Risica, 2006; Mcquerry, 2009).
Lessons	Does the curriculum give the participants options to live healthy lifestyles with appropriate strategies for their cultural background and social economic status? Does the curriculum acknowledge that, customs and beliefs about food and physical activity, its value, preparation and use are different among cultures?	Managing budgets, coupons shopping, season fruits and vegetables, frozen and canned products. Include important holiday traditions for the participants, value of food and family.	DS, Ecological Model Crowder & Bromme, 2012; Gamboa, 2010; Colleen, 2009; Strolla, Gans & Risica, 2006; Mcquerry, 2009.
Goals	Does the curriculum include establishing learning goals aligned with the participants needs?	Obesity and chronic diseases, healthy and easy recipes, basic knowledge about nutrition.	DS, Crowder & Bromme, 2012.
<i>Delivery</i>	Does the curriculum encourage or include trainings for the	Training for professional development	DS, (Palmeri et al., 1998).

paraprofessionals or educators staff in cultural competence skills?

regarding cultural competence with participants from different cultural backgrounds.

Results of Phase 3: Design and Pilot-testing a Culturally Appropriate Evaluation Tool for Nutrition Education Program for Hispanics

The design of the first draft of the evaluation tool was primarily based on a cross-cultural adaptation of the content domains, question types, and response options from the “Cultural Competence Improvement Tool” originally developed for reviewing cultural competence in existing health and nutrition curricula designed for the African-American population (National Black Child Development Institute, 2012).

The “Cultural Competence Improvement Tool” is theory-based in two aspects of culture: surface structure and deep structure (Ahluwalia et al., 1999). It is structurally composed of 16 items distributed among 6 domains: Appearance (1 question), Language (1 question), educational content-general (2 questions), educational content-Health and health behaviors (4 questions), Neighborhood environment, social context and family resources (6 questions) and Staff training (1 question). A 4-point Likert-type scale used the following options: Never = 0; A little bit = 1; Sometimes = 2; and A lot = 3. Scores for each of the 6 domains were totaled; the final score could vary from 0 to 48: a high score indicated an exemplary culturally competent instrument.

The researcher retained the type of questions and score options of this evaluation tool but adapted it for this study’s target population: Since addressed not only to the

nutrition educator coordinators but also to paraprofessionals, it had to have adequate explanations and be easily completed. Incorporating the phase two findings established four domains to structure the evaluation instrument: Appearance, Language, Content, and Delivery. Each domains was evaluated with questions and examples based on the reviewed framework theories. Appearance included images and colors (1 question), Language included concepts (3 questions), Content included activities, recipes, lessons, and goal setting (7 questions), and Delivery included staff (1 question). The researcher made the first draft and named the instrument Achieving Cultural Appropriateness in Nutrition Education Programs: Application of a Cultural Targeting Approach.

A committee of 4 experts in nutrition and education from Clemson University and Texas A&M University reviewed the first draft. Their corrections concerned some grammatical errors and the suggestion to include a comments box after each question: these changes were incorporated in the final version of the instrument (Appendix E).

Once the final version was developed, the next step was to pilot test the instrument with a nutrition education curriculum developed for EFNEP Hispanic participants in South Carolina (Celebrating Health/Celebrando la Salud). The tool and the curriculum were sent to a convenient sample of 10 Spanish speaking nutrition educators and coordinators to implement the tool with the curriculum and to give the tool content validity. The researcher received 8 responses back with the completed evaluation and comments regarding the instrument's use: the reviewers were asked to implement the tool with the curriculum, rate it and give feedback about the variables and the use of the tool. This was done to ensure that the variables included were essential and accurate according

to experts in the field. Their responses were constructive and helped ensure the variables were appropriate. As a result of their feedback, changes were implemented.

Several grammatical and formatting changes recommended by the reviewers were incorporated into the final version of the instrument (Appendix E). Some activities from question #5 and question #6 were separated because the reviewer pointed out that the example should mention traditions and foods from various Hispanic countries. Originally the questions provided as examples the concepts “traditional dancing” and “traditional food”; the reviewers recommended specific examples such as Zumba dancing or Tex-Mex music. A reviewer mentioned the need to reword question 12: does the curriculum specifically encourage training for paraprofessionals or educators. The question was reworded to ask if the curriculum was developed to help the paraprofessional or educator staff to be culture-sensitive when implementing the program. One last suggestion was to put the instrument in an Excel Spread Sheet so that paraprofessionals, coordinators, or educator staff could sum the numbers in a formula: this could ensure that all the numbers added up correctly.

The reviewers agreed that the instrument is relevant to cultural competence and easy to implement in any curricula. Four of them asked for the instrument to be implemented in their programs. Some of the comments of the reviewers were “Yes, the evaluation instrument includes accurate information. Variables and indicators are organized by categories that are relevant for a culturally adapted nutrition improvement curriculum.” “It is very organized and it has also been developed based on evidence.” “I believe that the content needs not to be changed. It is very well written and explained.”

“It was easy to use the instrument and would actually love to pass this on to the North Carolina EFNEP for assessment of their EFNEP curriculum for 2015.”

Results of Phase 4: Assess the cultural appropriateness of a nutrition education curriculum Celebrating Health/ Celebrando la Salud

As a final aim for this research, the researcher decided to assess the cultural appropriateness of the curriculum Celebrating Health/Celebrando la Salud developed for Hispanics in South Carolina by Clemson University PhD candidate, América Chávez-Martínez in 2008, and which nutrition experts and graduate students from Clemson University have modified during the past six years. This phase included two main steps to assess the overall cultural appropriateness of the nutrition education curriculum Celebrating Health/Celebrando la Salud; it involved a triangulation of methods (i.e. curriculum content review and focus groups) and various sources of information (i.e. EFNEP Hispanic nutrition educators and EFNEP Hispanic participants).

Evaluation of the Level of Cultural Appropriateness of Celebrating Health-Celebrando la Salud through a Curriculum Review conducted by EFNEP Hispanic nutrition educators

The first data collection strategy used in this phase was the implementation of the “Achieving Cultural Appropriateness in Nutrition Education Programs: Application of a Cultural Targeting Approach” evaluation tool in the curriculum Celebrating Health/Celebrando la Salud. The materials were sent to 10 nutrition educators/coordinators of US universities. The evaluation tool has a total score of 40 – 48 if it is exemplary

culturally appropriate, 30 – 39 if it is good culturally appropriate, 20 – 29 if it is fair culturally appropriate, and less than 19 if it is poor culturally appropriate. The researcher received 8 completed evaluations. Five of the professionals rated the curriculum as exemplary culturally appropriate with scores of 41 to 48 points, and three professionals rated it as good culturally appropriate with scores of 32 to 39 points.

Evaluation of Cultural Appropriateness of Celebrating Health-Celebrando la Salud through Focus Groups Conducted with EFNEP Hispanic Participants

A convenience sample of 36 Hispanics in South Carolina, who participate in EFNEP, was invited to participate in the focus group sessions held from May through June 2014. Two sessions were planned, one in the morning and one in the afternoon; however, because of attendance issues (6 participants in the morning and none in the afternoon), the researcher organized a third focus group on another date, recruiting nine participants. The final sample of participants was 15 Hispanic women with a mean of 38.2 years old. A bilingual researcher, with a bilingual notetaker and recorder, conducted the sessions. Participant responses related to cultural appropriateness of the curriculum focused on the variables that the tool evaluates.

Transcripts from the focus group provided qualitative data that was content analyzed. The discussion and transcripts identified recurring themes related to the participants' affiliations (Table 4). The first set of questions addressed their interests, motivation, benefits, and barriers related to nutrition education programs. The participants agreed that their interest and motivation came from their families, especially

their kids. All were interested and motivated to learn more about nutrition because they want to give their family healthy food options and a better lifestyle. They identified their families as barriers, too, because “sometimes my husband and kids refuse to try new options.” Many participants considered the images and colors in general to be relevant in a culturally appropriate curriculum for the Hispanic audience, although they did not consider having specific images of Hispanics to illustrate the curriculum as relevant because they live “in a multicultural country.” Reactions to Hispanic images in the illustration were indifferent: “we are in a country where you need to learn about everything and try new things, the color or race doesn’t matter.” Some of the most recurrent comments implied that the content did help them to feel related and identified with the program.

Regarding the vocabulary used in the curriculum, they agreed it is culturally appropriate and easy for every Hispanic to understand, but they emphasized that this was because the nutrition educator used a wide vocabulary in explaining every concept they might have had trouble understanding. The nutrition educator was Hispanic, which almost immediately created a bond with her and helped the participants feel almost at home. “Mercedes was very comprehensive in explaining how you learn through all the senses, especially the sense of sight through images.” They agreed that it is essential to implement the program as well as the materials in Spanish.

Participants claimed they enjoyed the curriculum activities, especially those in which they could include the family; they acknowledged that it is not always easy to unite the family to take part in the activities, especially the husband. “The activities

should be designed for the mom and the kids because the husbands are usually working or they don't like to be involved in this kind of things.” They also considered the curriculum activities easy because of the clear instructions and being culturally appropriate for Hispanics. They also expressed preference for group activities: “We were a united group and we like sharing together.”

Recipes proved to be an important factor of the curriculum. Participants considered this a favorite part of the program, and it was easier to learn using recipes. They consider the recipes to be culturally appropriate for Hispanics as well as inexpensive. Many claimed it is easier for them to follow the recipes if they have traditional ingredients that they are used to cooking. To make it more culture-appropriate, they suggested including hot sauce, beans, marinated meat, etc.

For the curriculum to be truly culturally appropriate, it should incorporate the values and traditions from the Hispanic culture in the content of the lessons. All participants felt related to the lessons' goals. Their preference for a Hispanic educator is evident since they feel related to her values, traditions, customs, and language. “The teacher shared a story (in Spanish) of her childhood that now she tells her kids and I felt really related because I did the same when I was a child.” Finally, and extremely important for this phase of the research study was learning whether or not they considered the curriculum culturally appropriate. Their comments were all positive. They considered the program to be useful for this community: “It was very complete and useful, I wish I could take it again because I feel I need to refresh everything I learned.” “I loved it, loved the program.” “It was a very good program I enjoyed it and I also

would like to have a continuation.” When the researcher asked what they would modify in the curriculum to make it more culturally appropriate, most said they would not modify anything. However, some suggested including a lesson about self-esteem and including more physical activity such as Zumba.

Table 4

Themes Revealed by EFNEP Hispanic Participants in the Focus Group (n=15)

Theme	Frequency
Participants claimed their interest and motivation in the program came from their family, especially their children	14
Participants perceived that the benefit they received from the program is learning healthier food choices and lifestyles for themselves and family.	12
Participants claim the biggest challenge to providing healthy meals is getting husbands and children to eat vegetables and try new recipes.	6
They feel the images and colors in the curriculum are appropriate for Hispanics and do not think having exclusively Hispanic images relevant.	7
They agreed the curriculum vocabulary is culturally appropriate and easy to understand but the nutrition educator was key since she had a wide vocabulary that made it easier for them to understand the concepts.	6
They consider having a wide vocabulary of the terms used in various cultures important.	7
They agreed the program as well as the materials should be in Spanish	15
They enjoyed the activities that include their family.	6
They consider the activities in the curriculum easy and culture-appropriate for Hispanics.	15
They prefer the group activities.	9

All considered the recipes culturally appropriate and inexpensive.	15
Many claimed it is important that the recipes use traditional ingredients and food they are used to cooking.	14
They consider including values and traditions from the Hispanic culture in the content of the lessons relevant.	8
Hands-on are the types of activities that would help them the most (demonstrations, recipes).	9
They all feel related to the lessons' goals,	15
They prefer a Hispanic educator.	6
They all consider the curriculum to be culturally appropriate.	15
Most would not change anything regarding the curriculum.	10

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CHAPTER FIVE

5 DISCUSSION

The main aim for this research study was to develop and test a culturally appropriate tool for reviewing nutrition education curriculum targeting the Hispanic population living in the US. The development of the instrument in this research included two leading phases: the content development phase and the content evaluation phase. In the content development phase, a content analysis was conducted on existing nutrition education programs for Hispanics. This phase analyzed the content domains, theories, and concepts introduced in existing programs. In the content evaluation phase, four experts with nutritional education backgrounds reviewed the evaluation tool and suggested revisions. In addition, a convenience sample of nutrition educators implemented and reviewed the evaluation tool. The final steps of this research was to assess the cultural appropriateness of an Nutrition Education curriculum developed for Hispanic women in SC Celebrating Health/ Celebrando la Salud.

The literature review revealed that it is necessary to identify the essential components of culturally appropriate curricula that effectively encourage positive behavioral changes among Hispanic audiences. It is important to identify and select appropriate concepts and contents involved in cultural appropriate nutrition education for Hispanics. The concepts and content found gave a basic foundation to develop the framework of the variables for evaluation. Knowing the difference between concepts commonly used in cultural appropriate interventions for Hispanics and how they were

addressed assisted the researcher in determining the important measures to include in the evaluation tool for cultural appropriateness.

Based on the review of the resulting 13 culturally appropriate interventions, it was evident that further research is needed on this area. Overall, the findings demonstrated that culturally appropriate interventions are well received and effective among Hispanics as evidenced by the different studies mentioned before (Albright et al., 2005; Bender et al., 2013; Elder et al., 2005; Rosal et al., 2011; Mier, Ory & Medina, 2010). Although, there is an existing gap in determining a curriculum or educational materials as culturally appropriate. Another important factor evidenced by the results was that overseeing the ethnic variations and cultural differences among all Hispanic cultures could become a barrier in implementing a nutrition education intervention. Most of the samples used in the interventions were Mexican American, which does not represent the diversity of the Hispanic culture in the US. Regarding the effectiveness of cultural appropriateness, it was clear that nutrition education interventions should last at least six weeks. Another relevant finding was that an increased effectiveness in adopting a healthier lifestyle occurred among target audiences when nutrition education programs were delivered in their native languages and included their traditional recipes and activities. Also, a successful nutrition program should have an educator who delivers the education program with a culturally sensitive approach. To encourage long-lasting positive changes, the nutrition educational contents must address populations in their native languages. It is crucial to include culturally appropriate components. The findings concluded that social support from family, familiar peers or staffs were significantly relevant for this

population. This was similar to results found in a review by Pekmezi and colleagues (2010): most programs included the usual components, but fostering social support seems to be particularly relevant to health promotion in Latinos (Pekmezi, Marquez & Marcus-Blank, 2010).

The other strategy for the first phase in this research study was the online survey to the State EFNEP coordinators in all US states and territories aimed at assessing program needs and evaluation tools of educational materials designed for Hispanic audiences. Using online surveys for this step of the study was an efficient method for data collection due the fact that the coordinators lived in different geographical areas. The use of an online survey also helped minimized the usual communication problems inherent to this type of projects. The survey was time-efficient in collecting the data. The results reflected the need in the interventions delivery to Hispanics of using specific and culturally appropriate curriculum for Hispanics in their nutrition education programs. They recognize the importance of using a Spanish curriculum with this population but they mostly use translation material instead of materials developed specifically for the audience. The most frequent answers regarding the components that made the curriculum culturally appropriate dealt with the use of popular foods, recipes. Coordinators considered their program culturally appropriate because their staff was from the community or Hispanic educators. This reinforced the point stated earlier regarding the importance of having a culturally appropriate intervention that includes traditional foods, recipes and a cultural sensitive educator. Although the coordinators do not use a

tool to evaluate the cultural appropriateness of their nutrition education materials, they definitely considered having one would be helpful and useful.

The framework intended to entail what theories guided cultural appropriate nutrition interventions, how ethnicity and culture were conceptualized and what the main interventions components were. With the literature review, it was difficult to stipulate specific guidelines that could define components to be included in a culturally appropriate curriculum suitable for the Hispanics audience. The theories, models, and findings in the literature review suggested the inclusion and evaluation of the following components for cultural appropriateness in a curriculum: Appearance of the educational materials—pictures, posters, worksheets, videos, food models, magazines, food examples, colors, fonts. Concepts in the curriculum—variability, accuracy and literacy appropriate terms. Content—Power point—pictures, friendly appearance, easy to read, Activities/exercises—family accurate, cultural (Hispanic) relevant, clear instruction, Recipes—cultural food, flexibility of food choices, Goals—accurately communicated goals, family friendly, social-economic status appropriate. Delivery of the program — staff training. Those variables were the foundation of the design of the cultural appropriate evaluation tool.

The design of the first draft of the evaluation tool was primarily based on a cross-cultural adaptation of the content domains, question types, and response options from the “Cultural Competence Improvement Tool” originally developed for reviewing cultural competence in existing health and nutrition curricula designed for the African-American population (National Black Child Development Institute, 2012). This tool was selected

because is theory-based on two aspects of culture: surface structure and deep structure (Ahluwalia et al., 1999) and it was in line with the framework developed for this research. The researcher retained the type of questions and score options of this evaluation tool but adapted it for this study's target population. The questions format included in the evaluation tool were designed to be straightforward and easy to understand by coordinators, nutrition educators and paraprofessionals.

The first evaluation tool draft was named *Achieving Cultural Appropriateness in Nutrition Education Programs: Application of a Cultural Targeting Approach*. The review of the four experts in the area of nutrition and education helped the researcher to improve the quality of the tool with the rewording of some of the questions as well as the addition of a comment section that gave more opportunity to the practitioner to explain their score.

The final step of this research was to assess the cultural appropriateness of *Celebrating Health/Celebrando la Salud* with a focus group with convenience sample of 15 Hispanics in South Carolina, who participate in EFNEP and with the scores given by the eight nutrition educator/coordinators. The researcher selected to assess the cultural appropriateness of the curriculum *Celebrating Health/Celebrando la Salud* with the evaluation tool because it is a curriculum that was developed specifically for Hispanics women in South Carolina.

The first method used to assess the curriculum was the focus group with Hispanic participants that completed this program. The main challenge experienced during this phase of the study was the recruitment of the participants. The channels of communication used were diverse but the fact that they had very different schedules and

family commitments posed a hardship for the researcher as far as getting them to coincide on an specific place, date and time.

After overcoming some of the burdens of recruitment, the research initiated the community participatory phase. This was critically important and brought about significant Hispanic insights which were very valuable in order to realize what participants consider culturally appropriate relevant for them. An observation worth mentioning is that the main motivation for these participants for having healthier habits is undoubtedly their family. They want to have a better quality of life, better eating habits and feel happier about themselves. Ironically, their main barrier to adopt a change, to take that one step towards a better quality of life is also their family. Getting all family members to agree on adopting a new behavior, to accept new eating habits seems to be almost mission impossible according to the participants.

Another finding worth mentioning and one the researcher found puzzling concerns what the participants in the focus group reported as far as images and pictures of Hispanics is concerned. All throughout the literature review, the researcher found articles and citations where the specific use of Hispanic pictures and images were highlighted. Nonetheless, for this focus group, having materials with images or pictures of Hispanics was not considered to be relevant. As for the other elements included in the tool, all of them were in agreement with what the literature has shown especially as far as having a culturally sensitive Spanish speaking educator, traditional food and traditional recipes were concerned.

The Achieving Cultural Appropriateness in Nutrition Education Programs: Application of a Cultural Targeting Approach evaluation tool was used successfully by eight nutrition educators and coordinators from different universities around the US. Having experts reviewing and implementing the evaluation tool demonstrated the relevance of having the expert's judgments in order to accurately assess the quality of the tool and a comprehensive understanding of the instrument. Findings from the expert review provided suggestions and opinions about the relevancy and ambiguity of the variables included in the instrument. The eight reviewers agreed that the instrument is relevant to cultural competence and easy to implement in any curricula. The results of both methods to assess the cultural appropriateness of the curriculum "Celebrating Health/Celebrando la Salud" from professionals and participant perceptions showed that this nutrition education curriculum is appropriate for Hispanics.

5.1 Limitations

Limitations to this study include small sample size, no randomized samples, and limited generalizability. The number of participants in the survey, focus group, and content validity were small (N=39) (N=15) (N=7), but it still was adequate to collect qualitative data on the needs in nutrition education programs and their appreciation of the curriculum. Recruitment of the participants was a challenge because of the different schedules and the hardship to reach them and get them to agree on a place, time and date. For the assessment of the curriculum, a randomized selection would have been optimal; however, many Hispanics do not have phones and some of them have relocated. Finally, due to the highly specific target group (Hispanic women), some aspects of the study may

have limited generalizability to other cultural populations. However, the theoretically based steps and methods can be used for other studies with the purpose of developing culturally appropriate materials for other minority groups in the US.

5.2 Conclusion

This study provides preliminary data of an evaluation tool to assure the cultural appropriateness of nutrition education programs targeting Hispanics. In addition, it identifies main domains that could improve the cultural appropriateness of nutrition education programs for Hispanics. Although further testing and validation are needed, the results of this study suggest that the Achieving Cultural Appropriateness in Nutrition Education Programs: Application of a Cultural Targeting Approach evaluation tool is acceptable, accurate, and easy to use for EFNEP nutrition education programs. This study helped to observe the relationship and differences between what the literature defines as relevant cultural appropriate domains and the relevant cultural appropriate domains from the Hispanic women perspective. Also, the results of both methods to assess the cultural appropriateness of the curriculum “Celebrating Health/Celebrando la Salud” showed that this nutrition education curriculum is culturally appropriate for Hispanics.

5.3 Future research

Future research is needed for validation and reliability of the evaluation tool with a bigger sample size that can be generalizable for the Hispanic population in the US and the implementation of the tool with other curricula to evaluate the cultural appropriateness. An important component to include in future research in this study is the demographic information of Hispanic participants.

A recommendation for EFNEP coordinators and nutrition educators with Hispanic audiences is to measure the level of acculturation in the pre-survey of the programs with the aim of having a more accurate picture of how long they have lived in the United States and how acculturated they are to the country.

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APPENDICES

Appendix A

INSTITUTIONAL REVIEW BOARD APPROVAL LETTERS

6/8/2014 IRB2011-060 Changed to Exempt: A Community-based Participatory Research to Improve Education Materials for Hispanic Population in the Upstate

Dear Dr. Cason,

The Clemson University Office of Research Compliance (ORC) reviewed the protocol identified above using exempt review procedures and a determination was made on October 25, 2013 that the proposed activities involving human participants qualify as Exempt under category B1, based on federal regulations 45 CFR 46. Your protocol will expire on June 30, 2014. The IRB initially approved the project as expedited in 2011, but after further review, we determined that your project qualifies for exemption. There are two documents attached to this notice. I updated the consent document and removed the expedited language. Please use the version labeled with “approved” for new participants. The document labeled with “tracked changes” highlights the changes I made. Please update the Spanish version as well. Please note that Julie Northcutt was not added to the protocol. Ms. Northcutt’s CITI human subjects training expired in January. Please ask Ms. Northcutt to complete the refresher course for “Group 1 Investigators Conducting Social and Behavioral Science Research (SBR) at Clemson University” at www.citiprogram.org. The expiration date indicated above was based on the completion date you entered on the IRB application. If an extension is necessary, the PI should submit an Exempt Protocol Extension Request form, <http://www.clemson.edu/research/compliance/irb/forms.html>, at least three weeks before the expiration date. Please refer to our website for more information on the new procedures, <http://www.clemson.edu/research/compliance/irb/guidance/reviewprocess.html>.

No change in this approved research protocol can be initiated without the IRB’s approval. This includes any proposed revisions or amendments to the protocol or consent form. Any unanticipated problems involving risk to subjects, any complications, and/or any adverse events must be reported to the Office of Research Compliance (ORC) immediately.

All team members are required to review the “Responsibilities of Principal Investigators” and the “Responsibilities of Research Team Members” available at <http://www.clemson.edu/research/compliance/irb/regulations.html>.

The Clemson University IRB is committed to facilitating ethical research and protecting the rights of human subjects.

Please contact us if you have any questions and use the IRB number and title in all communications regarding this study.

All the best, Nalinee

Nalinee D. Patin

IRB Coordinator

Clemson University

Office of Research Compliance

Institutional Review Board (IRB)

Voice: (864) 656-0636

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Web site: <http://www.clemson.edu/research/compliance/irb/>

IRB E-mail: irb@clermson.edu

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confidential. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or

copying of this communication is strictly prohibited. If you receive this communication in error, please notify us by reply mail and delete the

Appendix B

INFORMED CONSENTS FORMS

Information about Being in a Research Study Clemson University

Development and Validation Process of Culturally Competent Evaluation Tool designed to improve educational materials for Hispanic population in South Carolina

Dr. Katherine Cason and Andrea Aguilar are inviting you to take part in a research study. Dr. Katherine Cason is a Professor/State EFNEP Director at Clemson University. Andrea Aguilar is a student at Clemson University, running this study with the help of Dr. Katherine Cason. The purpose of this research is to assess Nutrition Education Programs for the Hispanic population in the United States and develop a cultural competence improvement tool to evaluate nutrition education curriculum for Hispanics.

Your part in the study will be to provide us information of written or revised curricula you may use with Hispanic EFNEP participants

It will take you about 15 minutes to be in this study.

Risks and Discomforts

We do not know of any risks or discomforts to you in this research study.

Possible Benefits

We do not know of any way you would benefit directly from taking part in this study. However, this research may help us to understand how to address nutrition education to the Hispanic audiences.

Protection of Privacy and Confidentiality

We will do everything we can to protect your privacy and confidentiality. We will not tell anybody outside of the research team that you were in this study or what information we collected about you in particular.

Choosing to Be in the Study

You do not have to be in this study. You may choose not to take part and you may choose to stop taking part at any time. You will not be punished in any way if you decide not to be in the study or to stop taking part in the study.

Contact Information

If you have any questions or concerns about this study or if any problems arise, please contact

Dr. Katherine Cason at kcason@clermson.edu or Andrea Aguilar at aaguila@g.clemson.edu.

If you have any questions or concerns about your rights in this research study, please contact the Clemson University Office of Research Compliance (ORC) at 864-656-6460 or irb@clermson.edu. If you are outside of the Upstate South Carolina area, please use the ORC's toll-free number, 866-297-3071.

Clicking on the "agree" button indicates that:

- You have read the above information
- You voluntarily agree to participate
- You are at least 18 years of age

You may print a copy of this informational letter for your files.

Information about Being in a Research Study
Clemson University

Achieving Cultural Appropriateness in Nutrition Education Programs: Application of a Cultural Targeting Approach

Dr. Katherine Cason and Andrea Aguilar are inviting you to take part in a research study. Dr. Katherine Cason is a Professor/State EFNEP Director at Clemson University. Andrea Aguilar is a graduate student at Clemson University and she is running this study with the help of Dr. Katherine Cason. The purpose of this research is to develop a tool to assess the level of cultural appropriateness of a curriculum designed for Hispanic women in South Carolina.

Your part in the study will be to review and evaluate the nutrition education curriculum developed for Hispanics “Celebrando la Salud” (Celebrating Health). The evaluation will take approximately 30 minutes.

Risks and Discomforts

We do not know of any risks or discomforts to you in this research study.

Possible Benefits

We do not know of any way you would benefit directly from taking part in this study. However, this research may help us to understand how to address nutrition education to the Hispanic audiences.

Protection of Privacy and Confidentiality

We will take all the necessary measures to protect your privacy and confidentiality. We will not disclose any personal information or tell anybody outside of the research team that you were in this study or the information we collected about you in particular.

Choosing to Be in the Study

You do not have to be in this study. You may choose not to take part and you may choose to stop taking part at any time. You will not be punished in any way if you decide not to be in the study or to stop taking part in the study.

Contact Information

If you have any questions or concerns about this study or if any problems arise, please contact

Dr. Katherine Cason at kcason@clermson.edu or Andrea Aguilar at aaguila@g.clemson.edu.

If you have any questions or concerns about your rights in this research study, please contact the Clemson University Office of Research Compliance (ORC) at 864-656-6460 or irb@clermson.edu. If you are outside of the Upstate South Carolina area, please use the ORC's toll-free number, 866-297-3071.

Clicking on the "agree" button indicates that:

- You have read the above information
- You voluntarily agree to participate
- You are at least 18 years of age

You may print a copy of this informational letter for your personal reference files.

Information Concerning Participation in a Research Study
Clemson University

Achieving Cultural Appropriateness in Nutrition Education Programs: Application of a Cultural Targeting Approach

Dr. Katherine Cason and Andrea Aguilar are inviting you to take part in a research study. Dr. Katherine Cason is a Professor/State EFNEP Director at Clemson University. Andrea Aguilar is a graduate student at Clemson University and she is running this study with the help of Dr. Katherine Cason.

The purpose of this research is to develop a tool to assess the level of cultural appropriateness of a curriculum designed for Hispanic women in South Carolina. The study will take place in the communities where EFNEP is taught.

Your participation will involve:

During the discussions, we would like for you to answer questions openly about how your participation in EFNEP. We also ask that you participate as much as possible and answer the questions as best as you can. These discussions will help us improve the program. The session will be recorded and we plan for this discussion to take about 1 hour.

Risks and Discomforts

There are no known risks associated with this study. You may refuse to answer or skip any question if you feel uncomfortable answering them. We cannot guarantee that focus group participants will maintain the confidentiality of other participants, however, we will request that all of the participants to respect the privacy and confidentiality of others who take part in the groups.

Potential Benefits

There are no direct benefits for taking part in this study. However, we hope to use the information obtained from this discussion to improve the program.

Incentives

During the focus groups session a healthy snack and beverage will be provided. In addition to this, after completion of the focus group session you will receive a \$25 gift card from a local grocery store.

Protection of Confidentiality

The records of your participation are confidential. The investigator will maintain your information and this information may be maintained on a computer. Your name will not be associated with any forms and/or recordings. You will be assigned an identification number, which will be used on all forms you fill out. All forms and/or recordings will be kept in a locked location up to 5 years, following federal regulations and Clemson

University policy. This study may result in scientific presentations and publications, however your identity will not be revealed.

Voluntary Participation

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study. The investigator may withdraw you from this research if circumstances arise that warrant doing so.

Contact Information

If you have any questions or concerns about this study or if any problems arise, please contact Katherine L. Cason at Clemson University at (864)-633-9448.

If you have any questions or concerns about your rights as a research participant, please contact the Clemson University Office of Research Compliance (ORC) at 864-656-6460 or irb@clemson.edu. If you are outside of the Upstate South Carolina area, please use the ORC's toll-free number, 866-297-3071.

A copy of this consent form will be given to you

Appendix C

ONLINE SURVEY TO EFNEP STATE COORDINATORS/STAFF

1. Do you use a specific EFNEP curriculum for Hispanic adult participants?

Yes

No (continue with question #4)

2. If Yes, what is the name of the current EFNEP curriculum you use for Hispanic adults?

3. May we borrow or purchase a copy of your current adult curriculum for Hispanic adults?

a. _____ Borrow

b. _____ Purchase (Purchase price \$_____)

c. _____ Neither

If we can borrow or purchase your curriculum, whom should we contact? (Please list a name, email address, telephone number, and price if applicable)

4. Is the adult curriculum that you use with Hispanic adults available in Spanish?

Yes

No

5. Do you use any other types of nutrition education materials that are specifically designed for your EFNEP Hispanic adult participants? If Yes, please list.

6. Do you consider your current adult curriculum or educational materials for Hispanics to be culturally appropriate?

a. Yes

b. No (continue with question #8)

7. What aspects make your current adult curriculum for Hispanics culturally appropriate?

8. Do you currently have or use an evaluation tool to evaluate curriculum and educational materials for cultural appropriateness.

a. Yes

b. No (continue with question #10)

9. Could we have access to the tool you have or used to evaluate curriculum and educational materials for cultural appropriateness.

a. Borrow

b. Purchase

c. Neither

(Purchase price \$?)

10. If a tool was developed to help you assess the cultural appropriateness of adult curriculum and educational materials, would you use it? If so, what would you like to see in an evaluation tool to evaluate curriculum and educational materials for cultural appropriateness?

Appendix D

FIRST VERSION OF THE EVALUATION TOOL

Achieving Cultural Appropriateness in Nutrition Education Programs: Application of a Cultural Targeting Approach

What is the tool?

This checklist will help you evaluate the cultural appropriateness and the cultural effectiveness of your intervention with a Hispanic audience. It will also help you identify and understand how each culture relates to health behavior and how to apply this knowledge in the planning and in the development activities. This tool will help you implement an effective curriculum to teach nutrition information with the Hispanic audience.

Directions:

- For each question, check the answer that best fits the curriculum you are reviewing.
- Check: *Not at all* if the curriculum is lacking that component, *Barely* if the component only has it in few occasions, *Some of the time* if the component is present in some occasion but not always and *Every time* if the curriculum counts with that component every time it is necessary

- Then add up the total number to get a score and see the interpretation at the end.

Variables	Question	Example	Not at all	Barely	Some of the time	Every time
<i>Appearance</i>			1	2	3	4
Design of the educational materials	1. Do the curriculum materials include colors, images and pictures that reflect the participant's culture?	Images or pictures of Hispanic families and women, cheerful colors.				
<i>Language</i>						
Concepts	2. Is the curriculum written in an appropriate learning level for the audience? (age, educational level, ethnicity, socioeconomic status).	Key terms and any potentially unfamiliar words are defined clearly.				

	<p>3. Is the curriculum written according to the appropriate culturally differences of the audience?</p>	<p>Spanish learning materials, worksheets and activities. Informal terminology, food measurements (i.e cups, tablespoons or grams).</p>				
	<p>4. Does the curriculum include modifications and/or supplemental terms to accommodate the languages spoken by the different cultural backgrounds of the participants?</p>	<p>Glossary or different options for the most popular terms.</p>				
<i>Content</i>						

Activities	5. Does the curriculum include activities related to the participant's cultural background?	Dancing, traditional music, traditional food, soap operas, games from different countries.				
	6. Are the curriculum-take home activities easy to understand and do they offer the possibility to engage their family members with the participants?	Clear instructions, possibilities of inclusion of all family members.				

Recipes	7. Does the curriculum show flexibility in food choices related to the participant's cultural background?	Healthy recipes that include traditional dishes from different cultures, food products that are familiar to the participants, child-friendly recipes (corn tortillas, rice, beans).					
	8. Does the curriculum include food products and recipes appropriate for the social economic status of the participants?						

Lessons	9. Does the curriculum give the participants options to live healthy lifestyles with appropriate strategies at their cultural background and social economic status?	Managing budgets, coupons shopping, season fruits and vegetables, frozen and canned products.				
	10. Does the curriculum acknowledge that customs and beliefs about food and physical activity, its value preparation and use are different among cultures?	Include important holiday traditions for the participants, value of food and family.				
Goals	11. Does the curriculum include establishing learning goals aligned with the participants needs?	Obesity and chronic diseases, healthy and easy recipes, basic knowledge about nutrition.				

		<i>Delivery</i>					
Staff	12. Does the curriculum encourage or include trainings for the paraprofessionals or educators staff in cultural competence skills?	Training for professional development regarding cultural competence with participants from different cultural backgrounds.					
Summary scores:							
Total score :							

If the Total Score is:

40 – 48 = Exemplary Cultural Appropriateness

30 – 39 = Good Cultural Appropriateness

20 – 29 = Fair Cultural Appropriateness

Less than 19 = Poor Cultural Appropriateness

Appendix E

REVISED VERSION OF THE EVALUATION TOOL

Achieving Cultural Appropriateness in Nutrition Education Programs: Application of a Cultural Targeting Approach

What is the tool?

This checklist will help you to evaluate the cultural appropriateness and the cultural effectiveness of your intervention with a Hispanic audience, as well as be able to identify and understand how each culture relates to healthy behaviors and apply this knowledge in planning and development activities. At the end it will help you to implement an effective curriculum to teach nutrition information with the Hispanic audience.

Directions:

- For each question, check the answer that best fits the curriculum you are reviewing.
- Check: *Not at all* if the curriculum is lacking that component, *Barely* if the component only has it in few occasion, *Some of the time* if the component is in some occasion but not always and *Every time* if the curriculum counts with that component every time it's necessary
- Then add up the total number to get a score and see the interpretation at the end.

Variables	Question	Example	Not at all	Barely	Some of the time	Every time	Comments
<i>Appearance</i>			1	2	3	4	
Design of the educational materials	13. Do the curriculum materials include colors, images and pictures that reflect the participant's culture?	Images or pictures of Hispanic families and women, cheerful colors.					
<i>Language</i>							
Concepts	14. Is the curriculum written in an appropriate learning level for the audience? (age, educational level, ethnicity, socioeconomic status).	Key terms and any potentially unfamiliar words are defined clearly.					
	15. Is the curriculum written according to the appropriate cultural differences of the audience?	Spanish learning materials, worksheets and activities. Informal terminology, food measurements (i.e cups, tablespoons or grams).					
	16. Does the curriculum include modifications and/or supplemental terms to accommodate the languages spoken by the different cultural backgrounds of the participants?	Glossary or different options for the most popular terms from different parts of Latin America.					

Variables	Question	Example	Not at all	Barely	Some of the time	Every time	Comments
Content			1	2	3	4	
Activities	17. Does the curriculum include activities related to the participant's cultural background?	Dancing, traditional music, traditional food, soap operas, games from different countries.					
	18. Are the curriculum-take home activities easy to understand and do they offer the possibility to engage their family members with the participants?	Clear instructions, possibilities of inclusion of all family members.					
Recipes	19. Does the curriculum show flexibility in food choices related to the participant's cultural background?	Healthy recipes that include traditional dishes from different cultures, food products that are familiar to the participants, child-friendly recipes (corn tortillas, rice, beans).					

	20. Does the curriculum include food products and recipes appropriate for the social economic status of the participants?						
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Variables	Question	Example	Not at all	Barely	Some of the time	Every time	Comments
Content			1	2	3	4	
Lessons	21. Does the curriculum give the participants options to live healthy lifestyles with appropriate strategies at their cultural background and social economic status?	Managing budgets, coupons shopping, season fruits and vegetables, frozen and canned products.					
	22. Does the curriculum acknowledge that customs and beliefs about food and physical activity, its value preparation and use are different among cultures?	Include important holiday traditions for the participants, value of food and family.					
Goal Setting	23. Does the curriculum include establishing learning goals aligned with the participants needs?	Obesity and chronic diseases, healthy and easy recipes, basic knowledge about nutrition.					

Variables	Question	Example	Not at all	Barely	Some of the time	Every time	Comments
<i>Delivery</i>			1	2	3	4	
Staff	24. Does the curriculum encourage or include trainings for the paraprofessionals or educators staff in cultural competence skills?	Training for professional development regarding cultural competence with participants from different cultural backgrounds.					
Summary Scores							
Total score:							

If the Total Score is:

40 – 48 = Exemplary Cultural Appropriateness

30 – 39 = Good Cultural Appropriateness

20 – 29 = Fair Cultural Appropriateness

Less than 19 = Poor Cultural Appropriateness

Appendix F

FOCUS GROUP PROTOCOL

Discussion Group Protocol

EFNEP Nutrition Education Program for the Hispanic population: “Celebrando la Salud”

Facilitator: _____ # of Participants _____

Date: _____ Place: _____

General description of discussion:

The group discussion will last 90 minutes. You will be asked to arrive 10 minutes prior to the beginning of the session. The participants and the facilitator will sit around in a circle or around a table for the discussion. The facilitator will start the session by introducing herself/himself. The facilitator will also introduce the notetaker. The facilitator will explain that the

purpose of the group discussion will be to evaluate the curriculum of Celebrando La Salud, which was used in the EFNEP program (the lessons, the materials, and the activities). The session will be recorded.

Basic rules for the discussion group:

The facilitator says:

Good morning/ Good afternoon. My name is _____, and I am a graduate student at Clemson University. Welcome and thank you for participating in this discussion group.

- A discussion group is just a group of people discussing a particular topic.
- There are no correct or incorrect answers. All your remarks here will reflect your point of view regarding the topic we are discussing with the aim of improving the program.
- We want you to give us your feedback, both positive and negative, so feel free to make your remarks.
- You should feel free and comfortable with the points of view expressed here.
- Everything you say here will remain confidential; thus, we ask the participants not to disseminate what is expressed in the discussion group.
 - All the information will be coded and your name will not appear on the reports.
- Since we will be recording the session, I am going to ask you to please speak one person at a time; otherwise, it will be very difficult to register your opinions later.

- I will be conducting the debate today, we will discuss several topics. The session will last approximately 90 minutes, including a five-minute break. If you feel the need to stretch or go to the restroom, or just drink water please stand up and exit quietly.
- Remember to speak out loud and one person at a time.

Opening

Please proceed now to individually introduce yourselves and state the time in which you participated in the “Celebrando la Salud” program.

TOPIC: BENEFITS RECEIVED FROM NUTRITION PROGRAMS

TRANSITION STATEMENT: Now, we are going to talk about the importance of participating in nutrition educational programs such as "Celebrando la Salud". Before starting the program,

1. What made you become interested in the program and register?
2. Do you believe it is beneficial for you and your family to participate in this program? In what ways did you consider it would be beneficial?
3. What is the biggest challenge you face when you offer healthy food to your family?

TOPIC: CULTURAL CONTENT OF THE MATERIALS IN THE PROGRAM

4. Do you believe it is important to include in the program materials images and colors that identify the Hispanic culture? Did you identify yourself with the images and colors used in the curriculum?
5. In regard to the vocabulary used in the program: Do you believe that the concepts should be adapted to the different cultures of the participants or should there be a general vocabulary? Do you believe that the concepts seen in class are culturally appropriate and easy to understand for Hispanics? Do you believe that other Hispanics will easily understand the messages?
6. In regard to the activities, Do you believe it is important that the activities include the family members or be developed for the family members? Let us remember some activities that were carried out in the program such as: identifying labels, case solving, attaining goals, fruit and vegetable detective, home consumption evaluation, menu preparation: Do you believe these activities were easy to complete? Were the instructions easy to follow? Was further explanation needed? Was it easy or difficult to work in small groups to complete the activity?
7. Now, we are going to comment about the recipes: Do you consider important to have typical recipes from your culture? Was the recipe easier to prepare when they were known to you and your family? Do you believe it is important to have economic recipes? Let us recall some: Whole burritos, fruit and yoghurt cups, vegetable chili. Do you believe these are culturally appropriate for your family? What did you like about them? What did you not like about them? How could we improve recipes for Hispanics? Did the recipes have ingredients that you are used to buying?
8. In regard to the content of the lessons, do you believe it is important to include in the lessons, healthy practices or strategies to maintain a healthy lifestyle? How indispensable do you consider it is to include in the lessons customs and

values of Hispanic culture? Do you believe it is important to have the goals of the program include your personal goals? Let us recall some of the topics discussed in class? Did you identify yourself with the practices and strategies the educator proposed? Were the goals proposed in the lessons also goals in your personal life?

Now, in general about the program:

9. Do you believe it is important to have a Hispanic or an English-speaking educator?
10. What materials of the lessons do you believe helped you the most? For example: brochures, recipes, power point presentations, activities, flyers. (Bring printed versions).
11. Imagine that you are in charge of the program, if you could make any changes to the lessons, what would you change to make the program more culturally appropriate for Hispanics?
12. Is there anything else you would like to discuss?

Farewell,

Thank you very much for your remarks about the program. What you have expressed to us will enable us to improve the program in the future. All the information shared with us will remain confidential. Finally, I would like to give you the opportunity to ask any question about this research. Do you have any questions? Do you have anything else to add? Thank you again and do not forget to pick up your snack.