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Developing a Culturally Sensitive Lifestyle Behavior Change Program for Older Latinas

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Abstract

Despite the burgeoning U.S. Latino population and their increased risk of chronic disease, little emphasis had been placed on developing culturally sensitive lifestyle interventions in this area. This article examines older Latinas' sociocultural context relative to health with the goal of developing a culturally sensitive health behavior intervention. Photo-elicitation indicated two emerging themes that influenced lifestyle choices: family caregiving and religion. Researchers partnered with a faith-based organization to develop and implement a 6-month lifestyle intervention for Latinas ages 50 and older: *Abuelas en Acción* (AEA). At completion, interviews were conducted to understand women's experiences and the influence AEA had on their lifestyles and health. Findings suggest that religious content empowered and deeply affected women; however, the intergenerational content presented significant challenges for instruction, retention, and implementation. We discuss findings in relation to the health intervention literature and provide suggestions for future interventions drawing on religion, family, and health behavior change.

Keywords

behavior change; community-based programs; culture / cultural competency; families / caregiving; women's health; health promotion; health and well-being; Latino / Hispanic people; Mexican Americans; religion / spirituality; visual methods; physical activity; nutrition; stress; *Promotoras*

U.S. Census data indicate that ethnic minority groups are growing rapidly. Large-scale immigration, primarily from Latin America, has been, and continues to be, a central factor behind this increase in ethnic diversity. Today, Latinos constitute 17% of the nation's population with a projected threefold increase by 2050 (Ennis, Ríos-Vargas, & Albert, 2011).

The impact of chronic diseases and the resultant loss in quality of life is a serious public health problem in the United States contributing to more than 70% of deaths and about 75% of health care costs (National Center for Chronic Disease Prevention and Health Promotion, 2009). This is further exacerbated within the growing Latino population who are more likely to experience structural and social inequalities, such as limited access to health care, limited English proficiency, and low socioeconomic status. In comparing overweight and obesity rates, Latinos surpass the general population by 10 percentage points (The National Hispanic Caucus of State Legislators, 2010). Among Mexican Americans, 77% of men and 75% of women are overweight or obese. Findings from the National Health and Nutrition Examination Survey (NHANES) indicate the current Latino diabetic population (adults 20 years and older) is substantially larger than the general population (15.7% vs. 10.2%; The National Hispanic Caucus of State Legislators, 2010). This disparity suggests that diabetes is a pressing health issue for Latinos. Furthermore, inadequate nutritional patterns including a high intake of fried foods, junk food, and soft drinks are common in the U.S. Latino diet (Morales Villegas, 2009). In 2010, only 14.4% of Latinos ages 18 and older were physically active (Go et al., 2013). These findings suggest that unhealthy eating and physical inactivity are major contributors to reduced quality of life and increased disability among Latinos.

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America is aging, and so are the minority populations. The health of older minority adults is a serious concern because they face an increased vulnerability due to unhealthy lifestyle behaviors resulting in chronic diseases and conditions (Louie & Ward, 2011; Seeman, Merkin, Crimmins, & Karlamangla, 2010). There are some major differences between the aging of the minority populations and their non-Latino White counterparts. The onset of chronic illness in minorities occurs earlier than the White non-Latino population. In addition, they are more likely to delay seeking health treatment and are often excluded from research. Other factors contributing to poor health include poverty, segregated and disorganized communities, lower educational attainment, unemployment, stereotyping, discrimination, and poor health care (American Psychological Association, 2013). This is alarming because the number of older Latinos is projected to increase at an unprecedented rate (Ortman & Velkoff, 2014).

Promoting healthy lifestyles is a significant public health challenge in the United States, especially among the Latino population. Researchers have found that standard health campaigns and interventions have been unsuccessful at reaching and sustaining long-term health behavior change among Latinos (Mier, Ory, & Medina, 2010; Whittemore, 2007). For example, Neuhaser and Kreps recall how California's statewide "5 a day—for better health!" campaign sought to improve the public's knowledge of fruit and vegetable consumption and to assist them in achieving the objective of "5 a day" (Foerster & Hudes, 1994; Neuhauser & Kreps, 2003). However, this effort did not produce the desired outcome. On the contrary, especially among Latino adults, it was accompanied by a reduction in fruit and vegetable consumption by almost 18%, thereby suggesting that awareness does not lead to health behavior change (Foerster & Hudes, 1994; Neuhauser & Kreps, 2003). Much of the research done to date has shown that although Latinos understand the importance of healthy lifestyles, social and cultural barriers inhibit their ability to improve their own health (Elder, Ayala, Parra-Medina, & Talavera, 2009). Furthermore, "one-size fits all" health approaches have not been successful at promoting healthy lifestyles among Latinos.

When developing a health promotion program, it is essential to understand how the population of interest perceives a healthy lifestyle. For such interventions to be successful, it is imperative that they be culturally sensitive by incorporating values reflected in specific Latino communities (Hovell et al., 2008; Pazzagli, Mazzeschi, Laghezza, Reboldi, & De Feo, 2013). To shed light on this important matter, we conducted an investigation using visual research techniques to enhance our understanding of individual choices related to lifestyle and deepen our knowledge of the complexities and sociocultural context that influence decision making. Findings from this study served as a foundation for our second study that designed and tested a culturally sensitive lifestyle behavior change program to improve the lifestyle of Latinas aged 50 and above. Findings from both studies are presented in this article.

Study 1: Understanding Lifestyle and Sociocultural Context

Method

Using a mixed-methods approach targeting older women of Mexican origin, the first study was guided by the Social Ecological Model (SEM), a theoretical framework that helps explain the role of multiple levels of integration and their influence in shaping individual behavior and beliefs (Stokols, Allen, & Bellingham, 1996). The SEM suggests that an individual's behavior does not occur in isolation but emerges from an interaction between individuals and the sociocultural context in which they live (Sallis et al., 2006). Ecological models have been used widely to increase our understanding of complex behaviors such as physical activity and healthy eating, and to guide the development of effective interventions (DiClemente & Crosby, 2011; Kerr, Rosenberg, & Frank, 2012). Health behaviors, including those addressed in this study, can be changed when researchers account for the combination of factors from different levels of the SEM hierarchy that can help support healthy choices (i.e., community, health policies). The proposed study seeks to motivate and educate individuals to help them make better choices.

Our primary goal was to enhance our understanding of choices related to lifestyle and deepen our knowledge of the complexities and sociocultural contexts that influence such decisions. To probe the relationships between the individual and the broader community (both the physical environment and sociocultural context), we adopted a community-based participatory research technique known as photo-elicitation (Wang, Yi, Tao, & Carovano, 1998), inviting participants to take photographs of salient and personally meaningful features in their lives.

Recruitment and study participants. The participant sample included 23 women aged 65 and older who were of self-reported Mexican origin, community-dwelling, and ambulatory. They were recruited from an urban neighborhood in Chicago that is known for its large Mexican population. We established networking links with community agencies (e.g., faith-based, aging agencies, community council) that had extensive experience working with Latino seniors in the Chicago area and agreed to assist us

in recruiting study participants. This study was approved by the University of Illinois Institutional Review Board (IRB). All participants signed a consent form approved by the IRB after enrollment in the study, after which an orientation session was held to explain the goals of the investigation and provide basic instructions. All materials were provided in both the English and Spanish languages to accommodate linguistic preferences.

Photo-elicitation. Participants (ages 71.9 ± 7.6 years) were given a disposable camera and each was requested to take about 27 pictures, representing both week and weekend days. We asked them to visually identify things that are meaningful to them in terms of place, people, activities, and other elements that might relate to their lifestyle. On completion of this activity, the cameras were retrieved by the research team for data analyses. Nine participants were selected for follow-up interviews. To ensure that we obtained perspectives from a wide variety of participants, we used age and data on health indicators to assist in selecting wide variety of interview participants.

For the individual interviews, we showed each woman her photos, which served as discussion stimuli. For each photograph, participants were asked to describe (a) what the image was, (b) what was happening in the photograph, and (c) why the image was important. In addition, we used follow-up questions framed on the SEM to enhance the photo-elicitation discussion and gain an in-depth understanding of factors influencing their health. The interviewer next explored different aspects of the participant's life, such as family, religion, community and environment, food and cooking, tradition, culture, and societal norms. More specifically, the interviews explored how participants viewed healthy lifestyle opportunities in their environment, probing about factors that might pose barriers or facilitators for healthy living. A sample interview guide was developed to address these factors based on participants' photographs. Interviews were audio-recorded and lasted for about 60 to 90 minutes each. More details on this study can be found elsewhere (Najib Balbale, Schwingel, Chodzko-Zajko, & Huhman, 2013).

Data analysis. All interviews were transcribed, checked for accuracy, and analyzed using thematic analysis (Braun & Clarke, 2006) by four Spanish speaking investigators. Initially, each researcher separately coded and analyzed the data for themes using NVivo10 Software (QSR International Pty. Ltd., 2012). Subsequently, the team compared codes for agreement, retaining only those themes that were coded by the majority of investigators and unanimously agreed on by the entire team after extensive discussion. The final themes represent the perspectives of the majority of participants. When negative cases arose, the team discussed each case, using them as an opportunity to further refine each theme (Patton, 2002).

Results and Discussion

Visual methodologies such as photo-elicitation are relatively new and infrequently used among Latino populations. Our study underscores the many advantages of using photo-elicitation to study older Latinas' perspectives on health. In our study, similar to Fleury, Keller, and Perez (2009), the use of pictures was well accepted by Latinas, helping them to express their ideas and thoughts easily (Fleury et al., 2009). Three studies have used photo-elicitation among Latinos to understand the contextual influences of lifestyle (physical activity) choices (Fleury et al., 2009) and food choices in Mexican mothers (Johnson, Sharkey, & Dean, 2011). Ortega-Alcázar and Dyck (2012) have suggested that photo-elicitation enables participants to distance themselves from their everyday living and consider these things from a new perspective, thus gaining novel insights. Past studies using photo-elicitation with vulnerable populations report that this method is a useful technique to obtain participants' perceptions, experiences, and beliefs especially among participants with lower educational attainment and older adults (Baker & Wang, 2006; Yamasaki, 2010).

Consistent with the SEM, our first study provided insights into how familial, environmental, and cultural contexts interact at the SEM innermost level: individuals. We found that family and faith play an important role in either facilitating or hindering older Latina women's efforts to adopt healthier lifestyle behaviors. In our study, we were able to observe a complex interaction between these multilevel factors that influences older Latinas' health behaviors. Two recurring themes that stood out among our participants included the role that faith plays in their everyday life and the responsibility that older Latinas feel as caregivers to family members—especially grandchildren.

Theme 1: Family comes first. Our study found family to be the nucleus of older Latinas' lives. They play important roles in the household and raise their grandchildren when necessary. Key quotes include the following:

> For me, my family is the most important thing. Such as my grandchildren and my children, see? I enjoy spending my time with them, and how do I say, I like to make their clothes . . . For those who live with me, I attend to them, I make them something to eat or serve them the food . . . . (Participant)

> [My grandchild's friend] often asks about my grandchild, because my grandchild told him that I raised him, that I knew how to educate him, and that I loved him so much. (Participant)

This is in agreement with the concept of *familismo*, which emphasizes ideal family relationships that are

close, warm, and supportive and that place family above one's self (Campos, Ullman, Aguilera, & Dunkel Schetter, 2014). With this value, there is the expectation of being able to rely on family members for support. Furthermore, there is a mutual obligation and understanding that the family members will help care for those in need, and serve as a role model to the younger generation (Gelman, 2014). In agreement with other studies, Latinas report constantly putting their family before their own needs to care for younger family members and this gives them a sense of satisfaction (Gelman, 2014). *Familismo* has been linked to reducing stress, and improving health and well-being (Campos et al., 2014).

Conversely, some women reported dissatisfaction toward the responsibilities that they had to shoulder as caregivers to their grandchildren, which are reflected in the following quotes:

> . . . And one day my son came and I told him: "My son, I cannot take care of your children." I cannot because I need to tend to all of them . . . Well, I do not know if I am asking too much but I tell them, "Let me live my last years . . . Do not give me responsibilities" . . . [And she continued on to express that caring for her grandchildren restricted her activities.] (Participant)

> . . . I am done with life . . . I no longer have to do anything. I already raised my children. I already raised my grandchildren, why do they come to bother me? Why do they come to get into my space? And we cannot be islands . . . Our culture lacks a way to say this to make them see . . . (Participant)

In our study, we found that family responsibilities, including caring for grandchildren, often resulted in significant time constraints including decreased time available for healthy lifestyle choices. Consistent with a study by King and colleagues on multiple ethnic groups, caregiving duties ranked among the top four most frequently reported barriers to healthy living (King et al., 2000). Adverse familial interactions that are not supportive can affect one's psychological and physical health (Repetti, Taylor, & Seeman, 2002; Seeman et al., 2010). Likewise, the Latino adult caregiving literature indicates that oftentimes, the caregiving role is far from the *familismo* ideal and can be stressful, difficult, and lonely (Gelman, 2014).

There are few studies to date using photo-elicitation to examine how familial relationships influence adult Latinas' health. One photo-elicitation study among immigrant middle-aged Latinas found that *marianismo* (i.e., the value that a Latina places her family's needs above her own) negatively affected women's participation in physical activity (D'Alonzo & Sharma, 2010). In this study, women worked several jobs and long hours to provide for their family denying their own physical and emotional needs. *Familismo* and *marianismo* have been found throughout the literature among Latinas, serving as a barrier to participating in physical activity or other positive health-related behaviors (D'Alonzo & Saimbert, 2013; D'Alonzo & Sharma, 2010; Im et al., 2010). By placing the family first, time is taken away from personal pursuits or interests (D'Alonzo & Saimbert, 2013). Therefore, physical activity, health behaviors, or self-care makes women unable to participate in family caregiving activities (D'Alonzo & Saimbert, 2013). Such activities are often viewed as selfish (Im et al., 2010). Despite these strong familial connections, Latinas in another qualitative study indicated that they often lacked the support they needed to share family obligations so they could engage in physical activity (Im et al., 2010).

The significance of caregiving for grandchildren is substantial and is a growing issue among Latinos. In recent years, the number of grandparents providing care to their grandchildren has increased substantially in the United States (Livingston & Parker, 2010). The Pew Research Center estimates that in 2008, there were about 500,000 Latino grandparents who were responsible for providing for 1 or more of their grandchildren's daily needs (Livingston & Parker, 2010). This represents an increase of 14% since 2000 (Livingston & Parker, 2010). Furthermore, Latino grandparents are more likely than White grandparents to provide care to grandchildren who co-reside with them (Livingston & Parker, 2010; Luo, LaPierre, Hughes, & Waite, 2012). Co-residential care is more prevalent among those of lower socioeconomic status, which is a common experience among Latinos in the United States (Luo et al., 2012).

Theme 2: Faith guides me. All participants self-reported being religious and indicated that faith was central to their lives and health. Many Latina women in the study showed a higher preference for allocating a portion of their free time to church or church-organized activities. Some of the quotes that indicated this are listed below:

> Health, goodness always comes from God's word. (Participant)

> My health mostly depends on going to church. (Participant)

> One embraces religion to be saved . . . to not get sick. (Participant)

> . . . And there are several things from the church that help us so much . . . for me . . . if I do not come [to church], I feel that my life is not so healthy. How can I tell? For me, the church is very important . . . very important. (Participant)

God was described by one woman as the chief facilitator of health, as follows:

> God gives intelligence to the physicians or chemists or those who practice all things for curing and healing people . . . God chooses [the physicians], meaning that, we have the help of God . . . Because [God] is the only one who guides them and communicates with them, [God] uses them for doing everything and examining us . . . God is the only one. (Participant)

The significance of the Catholic faith to Latino older adults is substantial. Roughly one third of all members of the Catholic faith in the United States are now Latino. According to the Pew Research Center, 62% of all Latinos in the United States are affiliated with the Catholic faith (Taylor, Lopez, Martinez, & Velasco, 2012). This number is closely confirmed by the American Religious Identification Survey of 2008 (Navarro-Rivera, Kosmin, & Keysar, 2010). Findings indicated that 64% of Latinos ages 55 and older identify themselves as Catholic. Most Catholic Latinos report praying daily and view God as personal and active in their daily lives. Almost a quarter of Catholic Latinos report volunteering in their church during the last year (Suro et al., 2007).

Faith and church are central to older Latinas' lives. Within the SEM, individual behavior is affected by the surrounding environment (e.g., church institutions), which affects family life and community affairs, and strengthens spiritual meaning within the Latino culture. For these women, religion shapes their beliefs about health and wellness, which are important aspects of their life and religious practices (Allen et al., 2014). Research findings have indicated that religion is also related to health behaviors. A large-scale review on the connection between religiosity and health (Powell, Shahabi, & Thoresen, 2003) has shown that those who attend weekly religious services have a longer life expectancy than those who never attend religious services. Religiosity serves as a protective factor for cardiovascular disease, most likely because religiosity might promote healthy behaviors, such as healthy eating, physical activity, and reducing stress, or discourage unhealthy ones, such as smoking or consuming alcohol (Powell et al., 2003). Another interesting finding from the same review shows some evidence that prayer by a third party improves recovery from acute illness. A study using NHANES data with women aged 60 and older including Mexican American women showed that frequent church attendance was associated with greater levels of participation in leisure-time physical activity (Gillum, 2006). Other psychological and cognitive benefits can arise from a sense of spirituality or being religious including feelings of increased control through prayer, optimism, and an improved self-concept (Dull & Skokan, 1995). Prior caregiver literature indicates that faith can be used as a positive form of coping and has been linked to lower levels of morbidity, stress, and overall well-being (Koerner, Shirai, & Pedroza, 2013).

In summary, we found that interventions designed to promote healthy lifestyles in Latina women should examine how multiple levels of the SEM influence their behaviors, including faith, church institutions, and family. In the second part of this article, we describe our efforts to coalesce these factors into an evidence-based lifestyle intervention, the *Abuelas en Acción* (AEA) Program.

Study 2: The *Abuelas en Acción* (Grandmothers in Action) Program

Based on Study 1, we identified faith and caregiving roles to be key components for health promotion efforts because they were ubiquitous in our findings. Caregiving for grandchildren often prevents older Latinas from engaging in other activities that could improve their health. However, faith is a central aspect of their life and a high priority for their free time. Our second study involves these two components—faith and caregiving—as the foundation of a health promotion program. These concepts were integrated into AEA, a behavioral lifestyle change program addressing physical activity, nutrition, and stress management for Latinas ages 50 and older. AEA draws on community resources to help Latinas identify and implement positive lifestyle choices, which are personally meaningful. This study was adapted from previously published evidence-based programs to address the needs and priorities of Latino communities. We developed and pilot-tested the AEA and partnered with a faith-based organization to deliver a culturally sensitive evidence-based behavioral change curriculum that incorporates (a) religious content or (b) intergenerational activities with grandchildren.

Another important feature of AEA is that it was designed to be delivered by community leaders (*promotoras*) who are already working in the community. We believe this has the dual advantage of utilizing individuals who are familiar with local customs and traditions, while also being a sustainable delivery model that requires no new personnel to be hired to deliver the intervention. The research team partnered with a local Catholic church to hold all AEA activities in church facilities (data collection, *promotora* training, and all program activities).

AEA Curriculum

The curriculum content was based on several well-established, evidence-based behavioral change programs (Callahan et al., 2007; Delgadillo et al., 2010; Griffin et al., 2010). The curriculum is composed of three core elements:

an individual meeting, six educational workshops, and weekly follow-up motivational phone calls. The content of the workshops were as follows: (a) Get ready, get set: An introduction to healthy living, (b) Healthy eating, (c) Get active, (d) Buying healthy food, (e) Be active your way, and (f) Stress management and overcoming barriers. AEA consisted of a 6-month active phase and a 3-month maintenance phase (only biweekly phone calls).

The program engaged the target population by being culturally sensitive by integrating both religious content (Catholic) and family activities into the health behavior change curriculum. There were three types of intervention groups (traditional control, intergenerational, and religious) that incorporated different forms of content into the workshop.

Religious content. The material designed for the religious group linked important religious figures to Latinos' experiences and health behaviors. We worked closely with church staff in developing a series of discussion themes for each workshop that focus on Roman Catholic teachings that are consistent with implementing specific health behavior changes in each session. Through a literature review on interventions using religious content (Bopp, Fallon, & Marquez, 2011; Bopp et al., 2007; Bopp, Peterson, & Webb, 2012; Bowen et al., 2004; Buta et al., 2011; Duru, Sarkisian, Leng, & Mangione, 2010; Krukowski, Lueders, Prewitt, Williams, & West, 2010; Peterson, Atwood, & Yates, 2002; Resnicow et al., 2002; Wilcox et al., 2010), we determined that the aspects of religiosity most meaningful to potential participants were prayer, scripture reading, and the lives of Saints. Each theme of the workshops was paired with a prominent Catholic Saint that exemplified the behavior focused on in each lecture (e.g., "Be active your way with *Pier Giorgio Frassati*," "Our Lady of Guadalupe: The balance needed in life" [referring to stress management]). When appropriate, parables and other readings taken from the Bible and the Catholic catechism were included to promote discussion linking religious beliefs with healthy behavior. In addition, prayers were offered before and after each session.

Intergenerational content. The material designed for the intergenerational group was modified to utilize caregiving as a facilitator for increasing physical activity and healthy eating habits. The intervention components included regular interactions between the grandmother and grandchild throughout the workshops and during homework assignments. Intergenerational programming was incorporated into the AEA intervention in three ways. First, two of the six workshops were designed to include both grandmothers and grandchildren learning about nutrition and physical activity together. Second, materials used as handouts for grandmothers during the remaining workshops ware tailored to incorporate family activity components for grandmothers to include while caring for their grandchildren. Third, during the individual meeting with the *promotoras*, the grandmothers were asked to set nutrition and/or physical activity goals that specifically incorporate time spent with their grandchildren. Activities used information from various public campaigns targeting nutrition and physical activity (Go, Slow, Whoa [Kids Health, 2014]; We Can! [National Institutes of Health, 2013]; and Let's Move [White House Task Force on Childhood Obesity, 2010]).

AEA Pilot testing

This study used a mixed-methods approach to evaluate the intervention over time by combining qualitative interviews, survey data, and health measurements to concurrently triangulate study findings (Cresswell & Plano Clark, 2007). A quasi-experimental design was used for this intervention.

Recruitment. Women were recruited using a convenience sample from a predominately Hispanic neighborhood in the Chicago area. Community leaders and research team members announced the intervention during church services in Spanish and English. Team members waited at a table after the church services to register women who were interested in participating. Flyers in Spanish were distributed after services and posted in stores and local organizations. Snowball sampling was used to recruit additional participants.

Participants. Initially, 34 participants completed baseline measurements and started the program; however, we had 15 dropouts (meaning that they did not complete 50% or more of workshops plus did not participate in data collection at both baseline and post intervention). Participants were initially randomly assigned to three groups; however, there were some individuals who moved to the religious groups (intergenerational group $n = 2$, traditional group $n = 3$). Therefore, the final number of participants in each group was as follows: traditional ($n = 8$), intergenerational ($n = 10$), and religious ($n = 16$).

Promotoras. Prior to the program's initiation, the research team met with church leaders to discuss the program and get feedback. During this meeting, the church staff and a community member offered suggestions of community members who were already leaders in their community. These women were asked to be program leaders or *promotoras*. Initially, four *promotoras* were recruited to deliver the program; however, one dropped out before program completion. The *promotoras* selected which group they would lead.

Promotoras received 18 hours of in-person training from the university research team divided into 9 modules.

Spanish-language manuals and brochures for participants were developed by the research team and used during *promotora* training sessions. The manuals included detailed explanations of different program activities, basic information about nutrition, physical activity, stress management, and instructions on how to conduct each workshop.

Data collection. Individual in-depth semi-structured interviews were designed for participants, *promotoras*, priests, and dropout participants. All interviews were designed and conducted by a native Spanish speaking research assistant with interviewing experience. Interviews were completed by 14 program participants, 2 priests, and 3 *promotoras*. Participants were asked about their perceptions and experiences with the program from recruitment to the conclusion of the program. During the interview, each session was reviewed individually along with the corresponding materials. They also provided insights into how the program was developed by *promotoras* and their experience implementing behavioral changes. Participants who dropped out from the program commented on their original motivation to participate, challenges they encountered during the intervention, the workshops they attended, and reasons for abandoning the program.

Promotoras were asked about their perception of the training process (trainer, materials, and activities). They all provided insights into their experiences implementing the AEA curricula, their motivation to volunteer, barriers and facilitators of implementing this type of program, and their perception of the outcomes on participants. Priests were asked about their motivation to participate in programs similar to AEA, their perceptions about the program, and the role it played in their community.

All participant and *promotora* interviews were conducted in Spanish. Only one interview with a priest was conducted in English. Participant and *promotora* interviews averaged 90 minutes. Priest and dropout participant interviews lasted about 30 minutes. Most interviews were conducted in the church where the intervention took place, or at the respondent's home when participants had limited transportation. All interviews were audio-recorded and transcribed for analysis. Demographic information was collected from participants at baseline (Table 1). Health information was collected at 3 time points (the beginning of the program, 6 months, and 9 months). Body mass index (BMI) was calculated based on participants' weight (at each time point) and height (baseline).

Data analyses. Similar to Study 1, all interviews were transcribed, checked for accuracy, and analyzed using thematic analysis (Braun & Clarke, 2006) by a team of four native Spanish speakers. For the initial round of coding, four research assistants separately coded and analyzed the data using NVivo10 Software (QSR International Ltd. Pty., 2012). After the initial round of coding, the team compared codes for agreement and decided on two criteria for keeping extant codes. For participant interviews, codes had to be present among at least 50% of the program participants. For priest interviews, codes had to be present in both interviews. For *promotora* interviews, codes had to occur among at least two *promotoras*. In addition, the research team determined that the codes used for the final analyses had to be agreed on by at least two of the four researchers. Codes that did not meet these criteria were discussed and members mutually decided whether to incorporate them or not based on their importance. From these codes, themes were identified by merging similar or related codes across participants. All quotes

Table 1. Baseline Characteristics of Study Participants ($N = 34$).

	M (*SD*) or %
Age (years)	64.3 (7.7)
Mexican origin[a]	91.2%
Time spent in the United States (years)	32.3 (15.3)
Formal education (years)[b]	6.1 (2.9)
Married	64.7%
Catholic[c]	97.1%
Employed	41.2%
Encounter financial difficulty covering daily living expenses	88.3%
Living with family[d]	82.4%
Have no health insurance[e]	38.2%
Have at least one chronic condition[f]	85.0%
Cardiovascular disease	68.0%
Arthritis/osteoporosis	36.0%
Diabetes	32.0%
BMI (kg/m^2)	30.1 (4.8)
Overweight or obese[g]	82.4%
Fair or poor perceived health status[h]	83%
Depression[i]	
Score	14.8 (4.7)
Depressed[j]	100%

Note. BMI = body mass index.
[a]One participant was born in the United States, one in Guatemala, and one in Colombia.
[b]Acquired in both native country and the United States.
[c]One participant was Christian Evangelic.
[d]Including spouse and other family members (i.e., adult children, grandchildren).
[e]26.5% had public insurance.
[f]Other chronic conditions included cancer, asthma, sciatica/body pain, thyroid problems, and depression.
[g]BMI $\geq$ 25 kg/m^2.
[h]Participants were asked to assess their own health as excellent, very good, good, fair, or poor.
[i]Two participants did not complete the baseline measure.
[j]Had composite score $\geq$ 10.

in this article have been translated into English and all identifying participant information has been removed.

Results and Discussion

Religious content. We developed a curriculum that explored the links between religious inclination and health behavior to understand the extent to which religious activities can be added to existing behavioral change programs to increase their appeal among Latinas. There is a small yet informative literature regarding the potential link between religious inclination and health behavior (Lasater, Becker, Hill, & Gans, 1997). Results from health-behavior-intervention studies involving religious context (partnering with religious organizations and church staff) have been mixed, showing differences in successful outcomes among different cultures and across religious denominations (Austin & Claiborne, 2011; Bopp et al., 2007; Bopp et al., 2012). To date, a majority of the studies that have explored the efficacy of combining health education content with religious themes have been conducted in African American evangelical settings (Bopp et al., 2007; Bopp et al., 2012). Recent work on Catholic populations (Krukowski et al., 2010) has demonstrated positive weight loss outcomes among White female Catholic parishioners following an intervention of incorporating religious content with the participants in the religious content group reporting greater program satisfaction and less weight regain 6 months post intervention. A clear finding from AEA is that the religious curriculum can serve as a powerful tool to promote behavior change in many ways. The association between faith through religious content and the program is described below.

"In God we trust!" Participants in the study confirmed the great importance given to faith, as something good, safe, and important, and many extended these sentiments to the program. In the interviews, most Latinas mentioned God during their discourse. "For by Him, and through Him!" Clearly, they feel guided by God, who helps them daily. For most Latinas, God is their support, and they thank him every day for his blessings. Through the religious content, participants were able to relate and extend their strong values of faith to the program.

> The prayers help me a lot. (Participant)

> I always watch the programs about the Virgin of Guadalupe; I like them, the saints' miracles . . . If I am not going to the Church, I feel that I am doing something good for me when I watch these programs . . . . (Participant)

> God sent it to me for some reason [in reference to the AEA program] . . . And I understood that I do not have to feel alone because God gave me a family . . . . (Participant)

The participants felt that the program is safe and in sync with their faith. This idea is further supported by the priests who believe that the church is an extension of their home. They trust the preaching of the church, so linking the program to the church increases its acceptance.

> . . . And since the purpose for what they're doing right now you know comes into religion, what is God calling me to do with my time and my energy now so yeah, . . . One thing is because of how the church is, you know, people feel at home. (Father)

> People are more reliable and come to activities that belong to the Church or at least that are in the Church . . . I think that it makes easy for people to say, "Ok I am going to attend because it is the Church or it is announced by the Church" . . . . (Father)

It was clear in our study that participants perceived obtaining spiritual support through the religious content, which led to changes in their behavior. Many participants expressed being empowered with the spiritual support that they received from the church, priests, saints, and through prayers, which enabled them to follow the program and keep on going.

> There will be a day when I will no longer be able to walk quickly and God allows me to keep walking even if not so fast. (Participant)

> Thanks to God for that time I felt good . . . [in relation to attending a workshop because of her health status.] (Participant)

> I send blessings to the Father because my [depressive episodes] were tremendous and I always spoke to Him, I needed a talk . . . . (Participant)

The inclusion of parables from the Bible and stories about saints helped participants to reflect on their lifestyle and motivated them to change. Many felt they were nourishing their body and soul with stories that felt very close to their reality. This is supported by the following quotes:

> [Readings from the Bible] . . . helped me to think in a different way, to think better things . . . they motivated me to follow [in relation to the behavioral changes]. (Participant)

> . . . Very good because they help us to think more . . . Both are really important because they are also spiritually nourishing . . . . (Participant)

> That was fine, because it talks about the Spirit, and really this also helps us, we can be with the faith, because for example if one combines the food or what one is doing with

> the faith . . . This is going to help to keep me healthy . . . . (Participant)

One *promotora* and both priests recognized that faith can help Latinas get healthier. They reported that the religious curriculum brought good energy to the group of participants and helped them reflect on their behavior.

> So we did the prayer, we read the Bible and then the story . . . The interesting thing, how we related that part of the Bible with what we were working [on in the workshop], for example, the nutrition, how God wants us to nourish our body . . . and with physical activity too. God wants our body to be healthy . . . When we read the Bible and after we discussed it, this was how they could connect the workshop with [Bible parables] . . . So it seems that she connected it more because most of them are very religious, they come a lot to the church . . . . (*Promotora*)

> It is important, I think, because people can see that it is not only a medical thing but it is also for their own spiritual life, their own faith . . . . (Father)

> I think it is very interesting that you are combining a component to see um, how a religious structure institution affects people's health. I thought that was very interesting, never really researched that myself so . . . I found it interesting and admirable. (Father)

Another notable motivational aspect of the religious content relates to how inspired and interested participants felt about the stories covered in each workshop. Most participants could relate to the stories, as if they were written for them. They recognize how faith helps them to be healthier. Telling religious stories was a good way to motivate women to make better healthy choices and change their unhealthy behavior.

> I like the religious material because from these I can have good experiences, good advice . . . I like religious things a lot. (Participant)

> It was something really beautiful, there were experiences related with health, nutrition, and exercise . . . all stories were related to the workshops. (Participant)

> There was a story, I do not remember the name of the Saint, but he climbs the mountains, and he felt nearer to God, more when he was on the top of the mountain, this story was very beautiful because it related to me . . . when I was in Mexico . . . . (Participant)

A *promotora* expressed that the religious content encouraged many women to participate during the workshops. She thought that participants felt comfortable and motivated when they were asked to talk about the parables and stories during the religious discussion.

> [Participants] asked me to make copies of the prayers, and when I read the Bible, they asked me if I could write it and give them a copy, so I wrote it for them and I gave them a copy, because they want the stories and have them . . . When we started to read the Bible, they participated more, those who were quieter [during previous sections of the workshop] got more involved. (*Promotora*)

An important finding of our study was that participants who received religious content as part of the health education program were less likely to drop out. Retention can be difficult when working with vulnerable Latino populations that can be hard to reach, yet often need health promotion programs the most (Marcus et al., 2013). The religious group had the lowest rates of dropout (81% retention, compared with 25% in the traditional control group and 40% in the intergenerational group). In fact, the religious content attracted participants ($n = 5$) who were initially enrolled in other groups who learned about it and requested to transfer into the group.

Church-based health promotion is key to reaching Latinos because these activities have the potential to enhance physical, spiritual, and mental health (Peterson et al., 2002). Targeting churches and faith-based institutions is an important form of community-based participatory research because it has the potential to garner support from hard-to-reach populations (Baruth, Bopp, Webb, & Peterson, 2014; Campbell et al., 2007). This is further supported by Martinez, Arredondo, and Roesch (2013) who reported success in recruiting, retaining, and effectively promoting physical activity among Latinas when using *promotoras* in a faith-based setting (Martinez et al., 2013). Ultimately, church affiliation was a major strength of AEA as faith-centered and culturally sensitive approaches were incorporated at all program levels from program design, collaborating with the priests to establish a faith-based curriculum, and program implementation.

Intergenerational component. Surprisingly little research has explored the grandparent/grandchild dyad in the context of health behavior change for both generations, the older adult as well as the child. Cantu (2011) argues that many Latinas view caregiving as a reason to remain healthy for their family, ensuring that they are better able to care for them. A recent report published by the U.S. Department of Health and Human Services (DHHS, 2012) indicates that more studies are needed to test strategies that engage family members in physical activity promotion in the home and family settings. Kaplan and colleagues (2009) underscore the importance for grandparents and grandchildren learning about physical activity and nutrition by jointly participating in hands-on activities (e.g., shopping, preparing meals, and walking or biking together) rather than just providing educational

materials alone (Kaplan et al., 2009). Our second study followed these suggestions and provides significant insights with respect to how Latina grandmothers can take advantage of their caregiving roles to improve their own health while continuing to contribute to the health and well-being of their families.

Results from testing the intergenerational component of the program reflected the complexity of Latino families. Generally speaking, our intergenerational activities failed to succeed in many ways. The first issue related to Latinas' daily routines that include a great deal of time caring for grandchildren. For some of them, this situation caused them stress and served as a barrier to attending workshops or completing program activities.

> I cannot do exercise because I have had the four children and had to be aware of them, that nothing happens to them . . . I do not like to run to chase them . . . I do not like to go to the street and talk and talk, scream at them; it is better I do not go out with them . . . . (Participant)

> Sometimes there is no place where you can leave [your grandchildren], you have to bring them [to the program or other activities] . . . Because there was the opportunity for people to come . . . If they do not allow the grandchildren, the [participants] did not come. (Participant)

> The [*promotora*] told them that they allowed children to come [to the program], so there was no obstacle to not go . . . Like I told you before, people who said they could not attend due to their grandchildren, so they had this option. (Participant)

A *promotora* agreed that caregiving roles often served as a barrier to engaging Latinas in the program activities and was a reason for attrition.

> One of [the dropouts], I think that [she was busy with grandchildren], this was the reason because she never attended the workshops . . . she went a couple of times but she did not stay the whole workshop because she had to take care of her grandchildren . . . . (*Promotora*)

The intergenerational program was designed as a workshop for participants and their grandchildren. It provided an alternative for Latinas to participate in a program while continuing to care for their grandchildren, which led to our second issue. When bringing grandchildren to the workshops, participants mentioned that they were distracted and disturbed.

> When grandchildren go, they are not interested . . . They brought one of [the grandchildren] to the first or second class . . . They are not quiet and I cannot pay attention because they are grabbing this, or grabbing another thing, and I can't do this. With kids, I can't do this. (Participant)

The *promotoras* agreed that the grandchildren were a great source of distraction over the 90 minutes of each workshop. There were only a few activities, involving mostly colors and games that allowed them to participate together. Most of the time, children did what they wanted, which caused stress among the group members.

> I think the bingo was in the first workshop, this interested [grandchildren], but after that they were disconnected because they wanted to explore. (*Promotora*)

An interesting aspect that was reflected on by the *promotoras* included how women felt that bringing their grandchildren to the workshop limited their opportunity to learn, focus, and more specifically, to enjoy AEA. The time spent at the workshop was meant to be their "me time," but having the grandchildren there prevented this from happening.

> There were two people who could not leave their grandchildren at home, because they were caring for them, but there were others who had no grandchildren at home, so they said, "No, this time is for us to learn. If you are caring for grandchildren [she referred to telling her grandchildren]." "And you do not go there, and you sit here, you do not grab this." "[Referring to the grandmothers] we do not pay attention or focus or learn," and then this was a dilemma. (*Promotora*)

A final issue identified in the intergenerational group was attrition, with retention rates of only 40% (compared with 81% in the religious group).

"We can work together our way!" For some participants, this was a promising feature of the intergenerational curriculum. Grandmothers and grandchildren working jointly did some activities at their own schedules. Women mentioned that some of their grandchildren participated in home activities with them.

> Oh yes, yes, yes we will check that we ate, I remembered it . . . I liked it because my children wrote it . . . he told me Grandma, did you have breakfast? He told me "Grandma, you ate this pancake for breakfast and this other thing and he recorded it all . . . ." He told me "Grandma, do you wear your device [in reference to her pedometer]?" And I said yes! Look here is it! (Participant)

> I said to my granddaughter . . . I have to go out to walk. "But do not hurry, I am going with you" [said the granddaughter], she sometimes sleeps over with me during the night. (Participant)

The priests expressed the importance of creating opportunities for Latinas similar to this to teach these women to take care of themselves. This program could also teach women healthy ways to cope with stress, often stemming from family and caregiving issues.

> A lot of times this is what I see when I talk to the older Latinas, they're always worried about their families they say, "Oh my son, my children, and my grandchildren" and they feel sometimes they're responsible for everything that's happening to their family. (Father)

> There is a need for people to go [to the program]. Especially for those that are focused on something in their own life, and care for themselves . . . especially if they are caring for their grandchildren and then doing things for others. (Father)

The shared experiences of the grandmothers involved in this study show the importance of finding innovative and more effective ways to reach intergenerational family members that can benefit all those involved. The struggles expressed by the grandmothers of being distracted or not being able to focus on the content of the workshops with grandchildren present could be addressed by putting more emphasis on the grandchildren themselves. Instead of targeting grandmothers and seeking for ways to include grandchildren, future programs might need to target the grandparent–grandchild dyad. A systematic review by Swanson, Studts, Bardach, Bersamin, and Schoenberg (2011) focusing on healthy habits to improve energy balance (mainly nutrition and physical activity) found 37 interventions focusing on intergenerational energy balance. Most of the studies had portions of the intervention given to both groups together (parents and children) and slightly more than half had portions given to the groups separately. This review included no studies targeting grandchildren/grandparent dyads and there is a paucity of literature on intergenerational health behavior interventions targeting the grandparent/grandchild dyad.

Future research should examine ways to appropriately involve grandchildren in interventions where grandparents' caregiving responsibilities specifically act as a barrier to engaging in healthy behaviors. Likewise, ways to engage family units in healthy behaviors should be explored. The important role of grandparents serving as caregivers in Latino families represents a unique factor, which can serve either as a barrier or a facilitator for all family members to engage in healthy behaviors.

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