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Promotoras de Salud: Roles, Responsibilities, and Contributions in a Multi-Site Community-Based Randomized Controlled Trial

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Abstract

There is widespread recognition of the cultural and linguistic appropriateness of *promotoras de salud* (a Spanish term for community health workers) in health education and outreach among Hispanic communities. Yet there are significant gaps in the literature regarding the preparation, implementation and evaluation of *promotoras'* engagement in research. To address this gap, we examine *promotoras*' research-related training, roles, responsibilities, and contributions in a community-based participatory research project involving a multi-site randomized controlled trial of a physical activity intervention for Mexican-origin women in Texas and South Carolina. We identify both benefits and challenges associated with *promotoras'* engagement as community researchers; examine variations and differences in *promotora* roles and responsibilities related to the research contexts, sites, settings, and individual characteristics; and discuss implications for research and practice.

Keywords

Promotoras de salud; community health workers; community-based participatory research; community researchers; Hispanics; physical activity

Promotora[*] is a commonly used Spanish term for community health worker (CHW), a broad umbrella category of para-professionals who provide health education and outreach services within their own communities (World Health Organization, 1978, 1989). Also called by a plethora of other names (e.g. health advisor, natural helper, peer educator),

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[*]In this article we use the feminine term *promotora*, rather than masculine *promotor*, because of the focus on women's health and the fact that all *ENLACE promotoras* were women. Depending on the source usage, we use either *promotora*, community health worker (CHW), or both when referring to literature.

CHWs are individuals to whom community members regularly turn for information and resources (Guinn, Vincent, Jorgensen, Dugas, & Semper, 2007; Reinschmidt et al., 2006). There is widespread agreement on *promotoras'* cultural and linguistic effectiveness in conducting community health education and outreach within U.S. Hispanic communities (Fernandez et al., 2009; Medina, Balcazar, Hollen, Nkhoma, & Soto Mas, 2007; Saad-Harfouche et al., 2011; Waitzkin et al., 2011). By delivering culturally-tailored health education and disseminating information about health and social resources to Hispanics and their families, *promotoras* serve as bridges between their communities and the formal healthcare system (Forst et al., 2004; Rhodes, Long Foley, Zometa, & Bloom, 2007).

Health education, advocacy, emotional support, referral and information support, and community capacity building are common CHW practice domains (Andrews, Felton, Wewers, & Heath, 2004; Koskan, Hilfinger Messias, Friedman, Brandt, & Walsemann, 2012; May & Contreras, 2007; Parra-Medina et al., 2009). In some situations, *promotora* roles extend beyond delivery of information to include serving as behavioral change agents or health systems navigators (Anders, Balcazar, & Paez, 2006; Waitzkin et al., 2011). Across programs and settings, CHW roles range from unpaid volunteer to salaried paraprofessional (Cherrington et al., 2008; Hinton, Downey, Lisovicz, Mayfield-Johnson, & White-Johnson, 2005).

More recent additions to the *promotora* role repertoire include research-specific activities. The most commonly reported *promotora/*CHW research role is delivery of interventions through teaching, demonstration, or provision of social support (Larkey, 2006; O'Brien, Squires, Bixby, & Larson, 2009; Pieper, 2008; Strolla, Gans, & Risica, 2006). For example, in one randomized controlled trial (RCT), *promotoras* implemented a community-based breast and cervical cancer screening intervention, conducting home visits with individual women randomized to the intervention group and helping participants schedule health screenings and medical appointments, in addition to performing research-specific roles of administering informed consent and collecting process evaluation data (Hunter et al., 2004). In another RCT designed to test a *promotora*-delivered cardiovascular health education program, *promotoras* also engaged in participant recruitment and retention activities and collected process and outcomes data (Balcazar et al., 2006). Findings from an assessment of *promotora* involvement in a randomized study of a mental health intervention indicated that although key stakeholders found the *promotora*-delivered mental health intervention useful and cost-effective in identifying and managing depression, *promotora* role confusion and blurred boundaries compromised the fidelity of the research design and the ability to implement the intervention as planned (Waitzkin et al., 2011).

Despite clear evidence of the benefits of a *promotora* approach for health promotion in Hispanic communities and indications of increasing involvement in research, we identified several gaps in the literature on *promotora* involvement in research. These included scant attention to the types of skills and knowledge needed for engagement in the role of community researcher and the lack of evidence of *promotora* involvement in developing or testing research interventions they deliver. Furthermore, CHW knowledge is rarely systematically documented or integrated into research or program evaluation data (Peacock, Issel, Townsell, Chapple- McGruder, & Handler, 2011).

To address knowledge and practice gaps related to *promotora* research engagement, in this report we examine the *promotora* research-related roles, responsibilities, and contributions in the context of a multi-site RCT conducted within the framework of community-based participatory research (CBPR; Israel, Schulz, Parker, & Becker, 1998; Minkler & Wallerstein, 2002). We begin with an overview of the contexts, settings, and research process and then provide a more in-depth examination of specific *promotora* research roles

and responsibilities. We then examine variations and differences related to context, sites, settings, and individual *promotora* characteristics and conclude with a discussion of the benefits, challenges, lessons learned and implications for research and practice.

Settings and Contexts

This pilot study involved community members in the design and implementation of a theoretically-based, culturally appropriate, community-based, multi-site *promotora*-delivered physical activity intervention. *ENLACE,* the research project title, is a Spanish term meaning to link, join, or connect. The title reflects both the *promotora*-led approach that builds on and enhances health connections between Latinas and their existing social networks and the joint community-academic research partnerships that generated the research in the Lower Rio Grande Valley (LRVG) region of Texas (TX) and the South Carolina (SC) Midlands. These two geographically distinct settings have a common demographic characteristic: the majority of the Hispanic population is Mexican-origin and among this sub-population, Spanish fluency is widespread. The LRGV is an established, Hispanic-dominant settlement on the U.S./Mexico border, where 85% of the population is Hispanic and the majority is U.S.-born. In contrast, the SC Midlands is an emerging Hispanic settlement area, where the majority of new Hispanic residents are of Mexican-origin, with Central Americans forming the second largest Hispanic sub-group. U.S. Census Bureau data (2010) indicate a 148% increase in the Hispanic population in SC between 2000 and 2010, the highest rate among all states during that period. Hispanics constitute 5.1% of the population statewide and between 4.8 and 5.5% in the principal Midlands counties (U.S. Census Bureau, 2010).

There are some contextual differences in terms of *promotora* initiatives between the two sites. Texas has a well-established state-wide CHW institutional infrastructure. The Department of State Health Services sets statewide training and certification standards and administrative rules for persons serving as CHWs/*promotores,* instructors, and sponsoring institutions/training programs and requires certification for all CHWs receiving compensation for services provided. These standards apply to all CHWs/*promotores* in Texas, those formally employed, receiving stipends, or volunteers. Our ENLACE partner was the *Colonias* Program, a community development initiative supported through Texas A & M University for the past 20 years. There are 10 Community Resource Centers (CRCs) established and supported through the *Colonias* Program in Hidalgo, Starr, Willacy, and Cameron counties. These CRCs provide health and social services to local residents, support community education and outreach through an established *promotora* program, and serve as a community gathering place where residents exchange information, identify local problems, and develop solutions. In contrast, there is no formal system of CHW support, training, or infrastructure in South Carolina. However, there is a decade-long history of *promotora* initiatives in the Midlands, linked primarily to the outreach and advocacy efforts of the South Carolina Hispanic/Latino Health Coalition, our *ENLACE* community partner (Walton, Calvo, Flores, Navarrete, & Ruiz, 2009).

Research Aims and Processes

The *ENLACE* research goals were to 1) identify and understand factors that influence physical activity behaviors among low-income Mexican-origin women living in Spanish-dominant communities in two distinct geographic locations; 2) develop and pilot test a culturally and linguistically appropriate/tailored, community-based, *promotora*-delivered physical activity intervention for this population; and 3) assess the feasibility and effectiveness of engaging community-based *promotoras* as participatory researchers. We purposefully opted for a *promotora*-led delivery model to enhance cultural receptivity, foster

trust among participants, and improve intervention reach and retention. The research process, conducted over a two-year period, occurred in four phases: Partnership Development, Formative Assessments, Intervention Planning, and *Promotora*-Delivered Intervention Implementation and Testing. We wove *promotora* training and support activities across these research processes. At both sites, *promotoras* participated in 32 hours of formal training for specific research-related activities (i.e., research ethics, formative assessment activities, baseline measurement, and intervention implementation) across the various phases, in addition to on-going supervision and support from the Community Liaisons and research staff.

Phase 1: Partnership Formation

In Phase 1 we established campus-community partnerships and formed an *ENLACE* program advisory team (PAT) at both sites. PAT members included representatives from local Hispanic-serving organizations (e.g., Hispanic health agencies and coalitions), faith-based groups, public health agencies, and physical activity initiatives, in addition to *ENLACE* research staff. Each project site had a part-time bilingual Community Liaison employed by the community research partner organization, whose primary role was coordination and communication with the Hispanic community and the project *promotoras*.

During this phase we selected the *promotoras* and began to prepare them for their research roles. We hired four *promotoras*, two at each site. The *promotora* selection criteria were Mexican-origin women with prior experience in conducting community outreach, evidence of strong linkages to the local Latina community (e.g., active in local health, civic, or religious organizations), and Spanish literacy and fluency. To prepare the four *promotoras* for their roles, initial training aimed to introduce them to the goals of the *ENLACE* research project and familiarize them with the basic research principles, norms, and ethics. We used the Spanish-language *Training in Research Ethics and Standards (TRES): A Self-Study Guide for Promotores* as the basis for this training, adapting it to the context of the *ENLACE* project (San Diego State University, 2005). The *TRES* curriculum contains culturally relevant examples that illustrate realistic ethical dilemmas when conducting research with Hispanic communities. The training addressed the purpose of research and responsibilities of those involved in research; the risks and benefits of participation in research and the importance of protecting confidentiality; and the components of the informed consent process: recruitment, enrollment and participation.

We conducted the *TRES* training in Spanish in a group format at both sites. The *ENLACE* Community Liaison, a native Spanish-speaker and foreign-trained physician, taught the curriculum in SC; the principal investigator, a bilingual Mexican-American, conducted the training in TX. The *Colonias* program requested that the *TRES* training be provided to their entire *promotora* staff ($n = 15$), not just the *ENLACE promotoras*. The University of Texas Health Science Center Institutional Review Board accepted the *TRES* training in lieu of the Collaborative Institutional Training Initiative (CITI) for *ENLACE promotoras'* role in human subjects research. Throughout the study, investigators and staff incorporated the concepts and principles from the *TRES* curriculum into the formal instruction and preparation related to the *promotoras'* specific research activities (e.g., recruitment, eligibility screening, informed consent, data collection, intervention delivery) and the research processes and protocols (e.g., randomization, control/wait-listed groups).

Phase 2: Formative Assessments

Concurrent with the first stage of the *promotora* training at both sites, the researchers and PATs planned the formative assessment activities aimed at further elucidating social,

cultural, economic, and environmental factors that may influence physical activity behaviors among the low-income Mexican-origin women living in these two distinct geographic settings. To explore the local socio-cultural attitudes and neighborhood environmental barriers and facilitators to Latinas' engagement in leisure-time physical activity, we conducted individual, semi-structured interviews with local community leaders (n = 13 in SC; n = 13 in TX) and 8 focus groups with adult Mexican-origin women (n = 33 in SC; n = 36 in TX). Although there were variations in the process, *promotoras* and PAT members provided input on neighborhood selection for the formative assessment activities and subsequent physical activity intervention at both sites (Parra-Medina & Hilfinger Messias, 2011).

Promotoras recruited women from their social networks who met the inclusion criteria for the two focus groups (i.e., one for women ages 18– 39, one for women age 40 or above). The rationale for separate focus groups for younger and older women was to explore potential differences in physical activity attitudes and practices related to life stage and family responsibilities. Each *promotora* was responsible for planning and implementing the organizational logistics for the two focus groups held in her neighborhood. To invite them to participate, *promotoras* contacted women in person and by phone. To ensure attendance, they selected the location, arranged car-pools, secured childcare resources, and procured refreshments. At the appointed time and place they were on-site to greet participants as they arrived and assisted in processing informed consent and completion of registration forms prior to initiation of the actual focus group activity. Trained Spanish-speaking research assistants conducted the focus groups. Following the completion of the focus group the *promotoras* assisted the research staff in disbursing participant cash incentives and obtaining signed receipts. *Promotoras* attended the focus group discussions as observers and participated in subsequent debriefing sessions with the investigators, contributing their interpretations and perspectives on the participants' responses and contributing suggestions on the development of the intervention program content and format.

Phase 3: Intervention Planning

Formative assessment data on the unique barriers to physical activity among Latinas in these two distinct regions provided the basis for the development of the culturally and linguistically-tailored *ENLACE* physical activity intervention (Parra-Medina & Hilfinger Messias, 2011). Unanticipated delays in grant implementation limited the time available for curriculum development. As a result, other than providing input during the focus group debriefing sessions, the *promotoras* had less direct involvement in developing the actual physical activity curriculum than originally envisioned. The researcher-developed *ENLACE* pilot intervention was a structured, 8-week curriculum that emphasized behavioral skills (e.g., physical activity self-monitoring, goal setting, time management and problem solving) and exposed participants to locally available, culturally appropriate, low-cost physical activities (e.g., walking groups, resistance bands, Zumba© videos).

At both sites, regular meetings with the Community Liaisons and consultations with the researchers provided opportunities for *promotoras* to review the materials before implementing the curriculum. *Promotoras* contributed suggestions on modifying language, content, and presentation formats. In planning and scheduling the intervention sessions, *promotoras* contributed essential information about participants' family care-giving and employment obligations and transportation needs.

We originally intended to conduct the specific intervention implementation training for the TX and SC *promotoras* simultaneously via concurrent video-conferencing. Due to scheduling and logistical problems, we conducted the three on-site intervention trainings in

the LRGV with synchronous video-conference participation of the SC investigators and Community Liaison, who subsequently conducted the on-site training sessions for the SC *promotoras*. Although asynchronous, the content and processes for the intervention training at both sites were identical. Using the *ENLACE* intervention curriculum manual, we trained the *promotoras* for their various roles and responsibilities (e.g., planning skills, techniques for group facilitation, record-keeping), in addition to providing them with specific physical activity content (e.g., definitions, benefits, levels of intensity, goal setting, warm-up stretches, proper use of exercise bands, organization of walking groups). Each *promotora* received a complete *ENLACE* intervention manual and all the handouts and materials (e.g., pedometers, exercise bands, DVDs) required to deliver the intervention.

Phase 4: Implementing and Testing the Promotora-Delivered Intervention

We pilot-tested the *ENLACE* intervention using group randomization with repeated measures. Four *promotoras*, two at each site, each recruited two groups of 15 Mexican-origin women ages 18 and older ($N = 120$) who did not meet current national physical activity guidelines (Haskell et al., 2007). At baseline, study participants completed an intervieweradministered survey and anthropometric measures and wore an accelerometer for one week. Following the baseline assessments, the researchers randomized groups to intervention or waitlist control status. Randomization was balanced within *promotora* (i.e., for each *promotora* one group was intervention the other was wait-listed). Each *promotora* delivered the 8-week physical activity program to the designated intervention group, using the *ENLACE* intervention manual.

During this phase, the four *promotoras* actively engaged in a variety of essential research roles, including survey development and assessment, participant recruitment, data collection, and implementation of the intervention. In developing the research protocols, we conducted mock assessment sessions at both sites with the *promotoras* taking on the role of research participants, in order to assess format, linguistic, and cultural appropriateness of the various instruments and to calculate the estimated time needed to conduct the actual pre- and post-assessment sessions. During debriefing sessions following these activities, *promotoras* made specific suggestions on content, format, and delivery of the Spanish-language survey.

Promotoras recruited, screened, and scheduled participants for the baseline assessment. These activities required multiple contacts, either by phone or in person, to assess eligibility, provide women with the necessary information regarding the research project, and schedule and confirm attendance. To gather important process evaluation data, we trained the *promotoras* to track their contacts with potential participants using standardized forms. At her specific site, each *promotora* was responsible for recruiting potential research participants and conducting the initial eligibility screening according to the inclusion criteria (e.g., Mexican-origin, ages 18 years or older, understand Spanish, live in the target neighborhoods, currently not meeting recommended physical activity guidelines, no medical contra-indications). As part of the eligibility process, we trained *promotoras* to administer the Physical Activity Readiness Questionnaire (PAR-Q; Thomas, 1992) and screen for medical exclusions (i.e., women who were pregnant, diabetic, had uncontrolled hypertension, or were undergoing therapy for life-threatening illnesses such as chemotherapy or radiation therapy).

We conducted the assessment activities at four specific locations, one for each *promotora*-specific cohort. Each *promotora* scheduled the assessment sessions for her cohort of 30 participants at a local community facility and made arrangements for transportation and childcare. At the SC sites, *promotoras* greeted participants, provided orientation for those needing childcare, and assisted with the informed consent processes. Once participants had

completed the consent process, the *promotoras* routed them to the various data collection stations (e.g. survey interviews, anthropometric measurement, accelerometer monitoring). The SC Community Liaison was responsible for the anthropometric measures (e.g. height, weight, and waist circumference). In the LRGV, the two *promotoras* actually conducted the baseline assessment interviews and other trained CRS staff members were responsible for the welcoming participants, obtaining informed consent, and monitoring the activity flow. Because the *promotoras* subsequently delivered the intervention, other researcher staff conducted the followup survey interviews.

Following completion of the baseline assessments, the Community Liaisons provided ongoing supervision and support for the *promotoras* as they implemented the physical activity intervention according to the *ENLACE* curriculum with the intervention group participants. Although instructed to implement the intervention as prescribed in the curriculum manual, the *promotoras* did have the liberty to determine specific implementation logistics (e.g., day, time, location). The follow-up assessment occurred at 14 weeks and involved the *promotoras* in a similar process to that of the baseline assessment. The final *promotora* responsibility was to offer the *ENLACE* physical activity intervention to the wait-listed groups.

Promotora Contributions and Benefits to the Research Process

ENLACE promotoras provided input and participated in the planning and implementation of the logistics of various research phases (i.e., individual interviews, focus groups, eligibility screening, pre- and post-data collection activities). Involvement during the entire research trajectory was clearly an added benefit, as *promotoras* provided important information and input along the way, from formative assessment to post-intervention planning for a larger scale RCT. Their input was critical in eliciting and interpreting the experiences, perspectives, and interests of other Mexican-origin women in the communities. Bringing community perspectives and voices to the research process is clearly a benefit of more active *promotora* involvement in the research process (Peacock et al., 2011).

Benefits from the longitudinal *promotora* input and involvement throughout the research trajectory included access to *promotoras'* existing social networks, their contributions of community-based insights and perspectives to the intervention and measurement development and implementation, which enhanced the social and cultural appropriateness of the intervention research, and the valuable asset of having the community's trust. In Texas, the fact that *promotoras* were part of an ongoing institutional structure facilitated communication and coordination.

Promotoras personally recruited research participants through their existing social networks (e.g., community, school, church, work). They excelled at effectively mobilizing community resources and recruiting participants for various program components (e.g. focus groups, assessment sessions, intervention program). This confirms what others have reported on the valuable asset of *promotoras'* social networks and their effectiveness in community mobilization and creating bridges between communities and organizations (Elder, Ayala, Parra- Medina, & Talavera, 2009; Forst et al., 2004). At both sites, *promotoras* were known within their local communities and had demonstrated an established level of respect and trust. The ability to effectively recruit eligible participants willing to agree to take part in the research was a testament to the trust and respect afforded the *promotoras* within their communities. The *promotoras* had regular contacts with participants outside the context of the *ENLACE* intervention and reported additional opportunities for informal information sharing and support, at church, children's sporting events, school functions, or the local grocery store. We also attribute the high level of retention and measurement compliance in

the study, particularly the very high compliance with the accelerometer measurement protocol and lack of any damaged, lost, or unreturned activity monitors, to the *promotoras*' level of engagement and communication with participants (Sharpe et al., 2011). During the assessment sessions, all participants received instructions on use of the accelerometer and were asked to wear the monitor for one week for the pre- and post-assessments. During the week, *promotoras* made phone calls to remind participants to wear the monitor and confirm their presence at the scheduled return visit.

Promotoras contributed cultural perspectives related to the delivery format (i.e., the need for more group discussion time and having participants engage in activities with others of similar abilities/levels); knowledge and skill building, and participants' expectations for more varied activities and investment in personal resources (i.e., women's willingness to invest in their own exercise mats, bands, or hand weights). Their knowledge of local activities and community norms benefited the program implementation at both sites, sometimes in different ways. For example, the LRGV *promotoras* alerted the investigators that participants were likely to consider the outfits worn by the women in select Zumba© videos as too risqué and advised against conducting post-assessments during the August back-to-school period due to the increased potential for scheduling conflicts. When planning the SC *ENLACE* activities, *promotoras* negotiated for schedules that would accommodate participants' employment and work demands.

Promotora-Related Role Challenges

Longitudinal *promotora* involvement in this RCT project did pose some research challenges. Finding the proper balance between maintaining fidelity to the aims, expectations, and norms of research and responding appropriately to community norms and expectations is a commonly-noted challenge in CBPR (Israel et al., 1998; Minkler & Wallerstein, 2002). As researchers, we faced challenges in determining how much autonomy *promotoras* should have in the implementation of the interventions and how best to provide oversight of the intervention delivery processes. In the post-intervention debriefing sessions the *promotoras* noted they would have been more confident in their own ability to deliver the intervention if the training had incorporated more hands-on activities related to physical activity.

Promotoras did acknowledge ways in which participation in *ENLACE* expanded their repertoire of skills over the course of the research project. Participation in this research exposed *promotoras* to new concepts, information, and skills; expanded their relationships with a new set of institutions and practices (e.g. university-based research) and contributed to their personal and professional development (Koskan, Friedman, Hilfinger Messias, Brandt, & Walsemann, 2013). The LRGV *promotoras* noted they were accustomed to engaging residents in finding solutions and providing referrals for all their constituents in the *Colonias* program, but working within the context of a RCT required that they understand the rationale for initially "withholding" information and support from the wait-listed control groups. *Colonias* program staff observed the *promotoras* facing a new learning curve as they initially struggled with the RCT format. However, as the *promotoras* became more familiar with the format they showed signs of understanding the broader context and recognizing the importance and potential impact to the community of fidelity to the research design.

For the most part, *promotora* roles and responsibilities were the same at the two sites, although there was some variation. The LRGV Community Liaison and *promotoras* all were employees of the *Colonias* Program, and the Community Liaison was the *promotoras'* direct supervisor. Therefore, there were clear reporting lines of communication among them and each person had designated CRC office space with a desk, phone and computer. Because the Community Liaison was the only person with internet access that allowed for uploading data

using web-based data entry, she was responsible for entering *ENLACE* referrals and eligibility screenings into a master database. The SC community partner organization paid the *promotoras* and Community Liaison for their involvement in the *ENLACE* project. Because the South Carolina Hispanic/Latino Health Coalition does not have office space, they worked out of their homes and used their personal phones. The Community Liaison collected the referral and eligibility forms from the *promotoras* and a graduate assistant entered the data at the *ENLACE* university research office.

We did encounter some site-specific challenges to our research design. The RCT protocol required each *promotora* to identify and recruit two groups of women living in distinct, geographically separate neighborhoods and who were not part of the same social network (e.g. church community or school district). A researcher at each site randomized groups at each site to intervention and wait-listed control arms of the study occurred at the *promotora*-level. In the case of one SC *promotora*, this meant that she went outside her usual social network to recruit a distinct group of women. The *promotora* did not live in either of the neighborhoods, but had substantial contacts in one neighborhood through her church affiliation. She was able to recruit women from another neighborhood, but she did not have strong prior relationships within that neighborhood's social network. This second location was randomly assigned to the intervention group and early on in the intervention the *promotora* encountered several logistic challenges: the presence of 16 – 20 children requiring childcare during the sessions; problems scheduling intervention sessions to meet employment and childcare requirements of the group members; and losing several participants who dropped out of the program within the first weeks. Although these issues are common in community-based research, in this instance the *promotora* was unable to draw on prior social contacts, knowledge, and relationships with the women. This situation highlighted a weakness in our RCT research design. As a result, in a subsequent project we modified the design and randomized at the community level to avoid randomization within each *promotora's* groups.

The LRGV *promotoras*, who had more extensive on-the-job experience in implementing outreach and education programs, were extremely patient, although frustrated, with the long start-up period and the compressed training for the actual intervention. Their existing social networks also presented logistic challenges in terms of the RCT design. Given their association with the *Colonias* Program CRCs, the LRGV *promotoras* did not have difficulty recruiting women from distinct geographical neighborhoods. However, because the women were associated with the same *promotora* and CRC or had other social connections beyond the neighborhood level, there was unanticipated "contamination" across control/intervention groups, which became evident during post-intervention assessment processes. For example, study participants from the same CRC in different research conditions (intervention/wait-listed control) car-pooled to the follow-up assessment. One wait-listed participant shared her story of how the intervention participant motivated her to get active and complete her study assessment requirements. Although the *promotora* was able to keep these groups separate in her intervention efforts, she could not control other interactions and communication among participants within the context of the broader community. This was another example of how we identified the pilot study design weakness of randomization of intervention and control groups within each *promotora's* networks.

The context of a multi-site study also posed challenges. In Texas there was an established, formal communication structure within the *Colonias* program that facilitated oversight, accountability and standardization in implementation of research protocols. However, the distance between the LRGV program site and the university researchers, located in San Antonio, created other logistic challenges. In South Carolina, where there was no formal CHW institutional structure and the investigators had a pre-existing relationship with the

Community Liaison, but not with the *promotoras*, communication channeled through the Community Liaison was more informal in nature. The fact that the LRGV *promotoras* were paid employees of the *Colonias* program and the SC *promotoras* were paid through the research grant but had no community affiliation required different logistic approaches at the two sites. The SC *promotoras* were paid a monthly stipend for their participation in the *ENLACE* program and a cash incentive based on the number of participants they recruited that completed the baseline assessments. Since the LRGV *promotoras* were paid employees of the CRCs and their participation in the *ENLACE* project was part of their paid employment, they did not receive the cash incentive for reaching the program recruitment goal.

The fact that the LRGV is a region with a large number of local *promotora* programs, many of which are involved in research initiatives, presented other challenges. Across these various institutions and research projects, there is a wide range of conduct norms and requirements for both *promotoras* and research participants. For example, some projects offer exceptionally high incentives for research participation, while others offer no incentive or compensation. There are also discrepancies in the level of remuneration for *promotoras'* research-related activities. As a result, there are local concerns about creating token economies that emphasize extrinsic over intrinsic motivation for research participation. To address this problem, the *Colonias* Program has established professional job descriptions with pay scales based on responsibilities and experience to avoid inconsistencies across programs. In South Carolina a similar situation arose when another project recruiting participants for focus groups was offering a higher incentive, creating a potential drain within the *ENLACE* recruitment pool.

Implications for *Promotora*-Based Practice and Research

Our findings clearly suggest the need for further consideration of the use of *promotora* networks in context of research. In terms of study design, researchers should carefully consider how the research (e.g., randomization) and program organizational units (e.g., size and composition education groups) can be designed in a way that is congruent with actual *promotora* social networks. Theoretically, *promotoras*' social networks are an important community resource, and research designs that disrupt or create artificial divisions within these networks are likely to result in challenges for the *promotoras*, their social networks, and the research. Systematic examinations of how the characteristics of different types of *promotora* social networks (e.g. church, neighborhood, employment-based, nationality-based) impact outcomes could contribute to the design and implementation of more effective *promotora*-based interventions. The lessons learned from the *ENLACE* pilot contributed to the development of a larger proposal for a RCT to evaluate the *promotora*-led physical activity intervention in a large-scale community trial. Changes in the research design included randomization by community sites rather than within *promotora* and offering an attention control program (rather than offering the intervention to a wait-listed control group). This approach does not separate participants within a promotora's network between intervention and control conditions and also provides an educational intervention for all study participants immediately after completing the initial baseline assessment.

Our findings also indicate potential strategies to enhance *promotora*-engagement in research. Much of the literature on *promotora* recruitment, training, and selection focuses on personal traits (e.g. willingness to serve the community, compassion, empathy, leadership qualities), access to and strength of social networks, communication skills, and level of trust within the community needed for outreach and education activities (Health Resources Services Administration, 2007; Kash, May, & Tai-Seale, 2007; Rhodes et al., 2007) rather than on knowledge, skills and training required for *promotora* engagement in research.

Engaging *promotoras* as community researchers requires additional knowledge and skill sets that need to be clearly identified in selection and training processes. Researchers and *promotora* program collaborators need to address the challenges of adequately preparing *promotoras* and facilitating their engagement as community researchers. In the process, they must consider how best to incorporate preparation for research into training curricula and to delineate *promotoras'* research responsibilities and position descriptions within the contexts of individual organizations and communities. Institutions responsible for *promotora* and CHW certification need to consider inclusion of research-related content into training and certification guidelines and ensure that such training is adapted to the literacy and educational levels of CHWs in diverse contexts (Peacock et al., 2011). Investigators and other research staff need preparation and training to anticipate and adequately respond to *promotora*-related problems and concerns, particularly in situations where new research roles and responsibilities are being added to the workload of existing CHWs (Peacock et al., 2011; Waitzkin et al., 2011). Researchers and program directors must also pay attention to the potential negative impact the additional layers of formal research requirements (i.e., eligibility screening, informed consent) may have on CHW roles, their effectiveness in connecting with the hard-to-reach, and on the level of trust that communities afford them (Peacock, et al., 2011). The implications of training volunteer community-based *promotoras* through grant-funded research with no plans for sustainability or career development once funding ends is an on-going challenge for both researchers and practitioners that warrants serious consideration (Koskan, et al., 2013). Engaging *promotoras* in community-based research can tap into a valuable resource and enhance the quality of research processes and outcomes, if thoughtful and deliberate attention is given to how their roles, responsibilities, and contributions fit within the context of research and the local community.

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References

Anders RL, Balcazar H, Paez L. Hispanic community-based participatory research using a promotores de salud model. Hispanic Health Care International. 2006; 4(2):71–78.

Andrews JO, Felton G, Wewers ME, Heath J. Use of community health workers in research with ethnic minority women. Journal of Nursing Scholarship. 2004; 36(4):358–365. [PubMed: 15636417]

Balcazar H, Alvarado M, Hollen ML, Gonzalez-Cruz Y, Hughes O, Vazquez E, Lykens K. *Salud para su Corazón*-NCLR: A comprehensive promotora outreach program to promote heart-healthy behaviors among Hispanics. Health Promotion Practice. 2006; 7(1):68–77. [PubMed: 16410422]

Cherrington A, Ayala GX, Amick H, Allison J, Corbie-Smith G, Scarinci I. Implementing the Community Health Worker Model within diabetes management. The Diabetes Educator. 2008; 34(5):824–833. [PubMed: 18832287]

Elder JP, Ayala GX, Parra-Medina D, Talavera G. Health communication in the Latino community: Issues and approaches. Annual Review of Public Health. 2009; 30:227–251.

Fernandez M, Gonzales A, Tortolero-Luna G, Williams J, Saavedra-Embesi M, Chan W. Effectiveness of Cultivando la Salud: A breast and cervical cancer screening promotion program for low-income Hispanic women. American Journal of Public Health. 2009; 99(5):936–943. [PubMed: 19299678]

Forst L, Lacey S, Chen HY, Jimenez R, Bauer S, Bauer S, Conroy L. Effectiveness of community health workers for promoting use of safety eyewear by Latino farm workers. American Journal of Industrial Medicine. 2004; 46(6):607–613. [PubMed: 15551366]

Guinn B, Vincent V, Jorgensen L, Dugas D, Semper T. Predicting physical activity among low-income Mexican American women: Application of the theory of planned behavior. American Journal of Health Behavior. 2007; 31(2):115–122. [PubMed: 17269902]

Haskell WL, Lee IM, Russell RP, Kenneth EP, Steven NB, Barry AF. Physical activity and public health: Updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. Circulation. 2007; 116(9):1081–1093. [PubMed: 17671237]

Health Resources Services Administration. Communithy Health Workers National Workforce Study. 2007. Retrieved August 2, 2011 http://bhpr.hrsa.gov/healthworkforce/reports/chwstudy2007.pdf

Hinton A, Downey J, Lisovicz N, Mayfield-Johnson S, White-Johnson F. The Community Health Advisor program and the Deep South Network for Cancer Control: Health promotion programs for volunteer community health advisors. Family & Community Health. 2005; 28(1):20–27. [PubMed: 15625503]

Hunter JB, de Zapien JG, Papenfuss M, Fernandez ML, Meister J, Giuliano AR. The impact of a promotora on increasing routine chronic disease prevention among women aged 40 and older at the US-Mexico border. Health Education & Behavior. 2004; 31(4 suppl):18–28.

Israel BA, Schulz AJ, Parker EA, Becker AB. Review of community-based research: Assessing partnership approaches to improve public health. Annual Review of Public Health. 1998; 19:173–202.

Kash BA, May ML, Tai-Seale M. Community health worker training and certification programs in the United States: Findings from a national survey. Health Policy (Amsterdam, Netherlands). 2007; 80(1):32–42.

Koskan AM, Friedman DB, Hilfinger Messias DK, Brandt HM, Walsemann K. Sustainability of *Promotora* initiatives: Program planners' perspectives. Journal of Public Health Management and Practice. 201310.1097/PHH.0b013e318280012a

Koskan AM, Hilfinger Messias DK, Friedman DB, Brandt HM, Walsemann KM. Program planners' perspectives of *promotora* roles, recruitment, and selection. Ethnicity and Health. 201210.1080/13557858.2012.730605

Larkey L. Las mujeres saludables: Reaching Latinas for breast, cervical and colorectal cancer prevention and screening. Journal of Community Health. 2006; 31(1):69–77. [PubMed: 16482767]

May ML, Contreras RB. Promotor (a) s, the organizations in which they work, and an emerging paradox: How organizational structure and scope impact promotor (a) s' work. Health Policy. 2007; 82(2):153–166. [PubMed: 17049668]

Medina A, Balcazar H, Hollen H, Nkhoma E, Soto Mas F. Promotores de salud: Educating Hispanic communities on heart-healthy living. American Journal of Health Education. 2007; 38(4):194–202.

Minkler, M.; Wallerstein, N. Community-Based Participatory Research for Health. San Francisco: Jossey-Bass; 2002.

O'Brien MJ, Squires AP, Bixby RA, Larson SC. Role development of community health workers: An examination of selection and training processes in the intervention literature. American Journal of Preventive Medicine. 2009; 37(6):S262–S269. [PubMed: 19896028]

Parra-Medina D, Hilfinger Messias DK, Fore E, Mayo R, Petry D, Prabhu Das I. The Partnership for Cancer Prevention: Addressing access to cervical cancer screening among Latinas in South Carolina. The Journal of the South Carolina Medial Association. 2009; 105(7):297–305.

Parra-Medina D, Hilfinger Messias DK. Promotion of physical activity among Mexican-origin women in Texas and South Carolina: An examination of social, cultural, economic, and environmental factors. Quest. 2011; 63:100–117. [PubMed: 21731409]

Peacock N, Issel LM, Townsell SJ, Chapple-McGruder T, Handler A. An innovative method to involve community health workers as partners in evaluation research. American Journal of Public Health. 2011; 101(12):2275–80. [PubMed: 22021290]

Pieper BB. Creating an aging-prepared community in the inner city: An early descriptive evaluation. Journal of the New York State Nurses Association. 2008; 39(1):8–13.

Reinschmidt K, Hunter J, Fernández M, Lacy-Martínez C, Guernsey de Zapien J, Meister J. Understanding the success of promotoras in increasing chronic diseases screening. Journal of Health Care for the Poor and Underserved. 2006; 17(2):256–264. [PubMed: 16702713]

Rhodes S, Long Foley K, Zometa C, Bloom FR. Lay health advisor interventions among Hispanics/Latinos: A qualitative systematic review. American Journal of Preventive Medicine. 2007; 33(5):418–427. [PubMed: 17950408]

Saad-Harfouche FG, Jandorf L, Gage E, Thélémaque LD, Colón J, Castillo AG, Erwin DO. Esperanza y Vida: Training lay health advisors and cancer survivors to promote breast and cervical cancer screening in Latinas. Journal of Community Health. 2011; 36(2):219–227. [PubMed: 20711645]

San Diego State University. Project TRES -- Training in Research Ethics and Standards Curriculum. 2005. Retrieved 05 February 2011, http://projecttres.sdsu.edu/tres/curriculum.jsp

Sharpe PA, Wilcox S, Rooney L, Strong D, Hopkins-Campbell R, Butel J, Parra-Medina D. Adherence to accelerometer protocols among women from economically disadvantaged neighborhoods. Journal of Physical Activity and Health. 2011; 8(5):699–706. [PubMed: 21734316]

Strolla LO, Gans KM, Risica PM. Using qualitative and quantitative formative research to develop tailored nutrition intervention materials for a diverse low-income audience. Health Education Research. 2006; 21(4):465–476. [PubMed: 16303783]

Thomas S. Revision of the Physical Activity Readiness Questionnaire (PAR-Q). Canadian Journal of Sport Sciences/Journal Canadien des Sciences du Sport. 1992; 17(4):338–345.

U.S. Census Bureau. The Hispanic Population: 2010, United States -- States Population Estimates (geographies ranked by estimate):2009 Population Estimates. 2010. Retrieved 07 February 2013, http://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf

Waitzkin H, Getrich C, Heying S, Rodríguez L, Parmar A, Willging C, Santos R. Promotoras as mental health practitioners in primary care: A multi-method study of an intervention to address contextual sources of depression. Journal of Community Health. 2011; 36(2):316–331. [PubMed: 20882400]

Walton A, Calvo Y, Flores M, Navarrete L, Ruiz L. *Promotoras*: Observations and implications for increasing cervical cancer prevention and screening in the Hispanic community. Journal of the South Carolina Medical Association (1975). 2009; 105(7):306–308. [PubMed: 20108723]

World Health Organization. Primary Health Care. Report of the International Conference on Primary Health Care Alma-Ata, USSR; 6-12 September 1978; Geneva. World Health Organization; 1978.

World Health Organization. Strengthening the performance of community health workers in primary health care. Report of a WHO Study Group. Geneva: World Health Organization; 1989. WHO Technical Report Series, No. 780