New Paradigms in Border Health Community Participatory Research Using Promotoras de Salud: A chronic disease reduction model

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Abstract

The existence of significant Hispanic health disparities requires the use of innovative community-based participatory research models to insure appropriate research questions are asked and dissemination of the findings to those affected occurs. Promotores de Salud (PS) or community health workers who are residents of local communities when integrated into a community-based participatory model such as the one presented in this article provide an opportunity to address more effectively health disparities associated with health outcomes of Hispanics. This article also describes an application of how a PS model can integrate research into a community agenda for addressing health disparities for cardiovascular disease (CVD) and their risk factors within a complex border environment such as the one found in El Paso/Cd. Juarez Mexico.
Given the significant extent of Hispanics health disparities, it is critical that researchers use culturally sensitive research models that also include traditions, language, customs and community experiences when investigating these issues (McQuiston, Parrado, Martinez, and Uribe, 2005). Innovative community-based participatory research models are required to bring health education/information to Hispanic families and related health activities to break the cycle of behaviors that lead to a variety of health disparities. Appropriate investigation methods are essential in order to develop research proposals and perhaps most importantly, to disseminate findings back to the Hispanic communities in which the research was conducted.

Community-based participatory research is a process which ideally involves the residents of the community in the development of the research questions and at a minimum, in the dissemination of the findings. A key to success is the collaborative nature of the research process that is inclusive and uses a “bottom up” approach. In this “bottom up” approach, the community is an active participant from the beginning of the research process including formulating the “appropriate” research questions. For example, in the community-based participatory research model, the investigator(s) identifies a significant health disparity such as obesity and type 2 diabetes. The researcher(s) then involves community members and/or family members diagnosed with diabetes, local community groups, and other key stakeholders such as the local diabetes association, school district, etc in the development of the research proposal. On the other side of the spectrum of the research process is the “top down” approach of conducting the research enterprise. In the “top down” approach the investigator(s) independently identify research questions and then seek community involvement in carrying out the research project. This process, while may be considered as part of a community-based participatory research agenda, is
not an optimal approach because the community is not a partner in the initiation of the research endeavor but is simply a participant in a pre-determined process absent of its input.

A number of obstacles impact the health of Hispanics. For example, the lack of health promotion literature written in Spanish, the limited number of Spanish speaking health care providers, a high rate of poverty, insufficient access to health care for primary care and preventive care, and the high rate of Hispanics who are monolingual Spanish speakers who become vulnerable due to their marginalization in society all contribute to health disparities (Balcazar, Alvarado, Hollen, Gonzales-Cruz, Hughes, Vazques, and Lykens (2006). To help to minimize these factors culturally appropriate health interventions are urgently needed. The use of a community-based participatory research model that use a “bottom up” methodology shows promise in assisting researchers when addressing these issues.

Promotores de Salud have been used as one of the key components of a community-based participatory research model (Balcazar, Alvarado, Hollen, Gonzales-Cruz, Hughes, Vazques, and Lykens, 2006; Balcazar, Alvarado, Hollen, Gonzales-Cruz, and Pedregon, 2005; Kim, Flakerud, Koniak-Griffin, Dixon, 2005; McQuiston, Parrado, Martinez, Uribe, 2005; Cohen and Ingram, 2005). PS provide one way of connecting the research and researchers to the “grassroots” of local Hispanic communities. PS are culturally competent, bi-lingual, and are familiar with health research. PS serve as the interface between the community and health researchers who may or may not have these cultural specific competencies.

In an ideal model of family health education using community–based participatory research, the PS focuses on the Hispanic family, including not only the mother who is usually the participant in research projects, but also men in the family, who have not typically
participated in health education projects as well as their children. With this emphasis on the Hispanic family, a holistic approach is used to build culturally-appropriate research projects to combat multiple risk factors to address health disparities such as CVD. Interventions to address CVD need to include all family members when possible. A significant need exists to find empirical evidence on how to incorporate family interventions within a community-based participatory research perspective in order to address CVD disparities in the Hispanic community (Anders and Bristol, 2005). The purpose of this paper is to: a) describes a model of community based participation research that utilizes Promotores; b) provide an examination on how the PS model can be applied within the context of a community participatory framework, and c) to address some of the issues and concerns with this suggested model.

Theoretical Models of Community Based Participation Using Promotores

Many public health interventions that combine community outreach processes and participatory research are using PS to address health disparities among racial and ethnic minority groups (Corkery et al., 1997; Eng et al., 1997). The implementation of the concept of PS has become a common practice in the field of minority health promotion and health education (Eng et al., 1997; Kegler, Stern, Whitecrow-Ollis, & Malcoe, 2003; Witmer, Seifer, Finocchio, Leslie, & O’Neil, 1995).

Promotores de Salud have participated in many programs that address a variety of public health issues ranging from screenings, referral to the health care system, maternal and child health interventions, and health education for prevention and control of chronic diseases such as diabetes, cancer, and heart disease (Corkery et al., 1997; Meister et al., 1992; Navarro et al., 1998). PS programs have used a variety of conceptual and theoretical frameworks of health
education and health promotion. To date, these conceptual frameworks are guiding the different methods in the delivery of health education models used by PS (Castro et al., 1995; Eng et al., 1997; Navarro et al., 1998). For example, the “Por La Vida” model intervention in San Diego, California was developed using the theoretical framework of natural helpers defined by Eng and colleagues (Eng et al, 1997; Navarro et al, 1998).

Current approaches in clinical and prevention research have considered the incorporation of cultural factors such as ethnic health beliefs and aspects of acculturation and family as key components in the design of health promotion and interventions programs for Hispanics (Castro & Balcazar, 2000). Even though individual behavior theories have been helpful to aid in the development of interventions focusing on lifestyle modification, social ecological theory has emerged as an important theoretical construct to guide the development of effective culturally-health promotions approaches in minority communities (Stokols, Allen, & Bellingham, 1996).

The contemporary challenge in the design of community-based participatory research interventions has been to incorporate constructs from several theories that take into consideration traditional individual focus behavior change strategies, social ecological and culturally-relevant theories that avoid “one size fits all” approaches (Castro & Balcazar, 2000). Community-based participatory research can be a powerful strategy when it considers the translational approach proposed by Stokols and colleagues (1996) whereby health promotion orientation is applied in the context of three domains: social ecological approach, environmental enhancement and restructuring, and behavioral change modification (Stokols et al., 1996).

Within the framework of the “ecological paradigm”, social support, and community networks are important constructs for bringing a “cultural approach” to health promotion and
disease prevention and control interventions in Hispanic communities. A PS model provides context to the community participatory research when it is defined within an ecological framework. In this ecological context, PS serve as community agents for negotiating health access and health care services to Hispanic individuals and families in the community. Promotoras de Salud participate actively in this negotiation by: a) providing health-related information and knowledge about how to initiate healthy changes in lifestyle behaviors, b) by understanding the “situational circumstances” of the lives of people in terms of their social, economic, immigration status conditions, and c) by bridging the gap between the individual, the family, and the community in terms of the readiness for receiving health information and knowledge according to the particular “situational and personal circumstances” under which Hispanic families live.

In this article a model of PS will be presented using the Salud Para Su Corazon (SPSC) (Health for Your Heart) initiative as an example of how community-based participatory research is connected with PS to enhance the delivery of community interventions associated with risk reduction of cardiovascular disease (CVD). Salud Para Su Corazon model uses PS to address pressing health disparities that exist in Hispanics associated with chronic conditions such as obesity, diabetes, hypertension, and heart disease (Balcazar, et al, 2005).

In 1994, the National Heart, Lung, and Blood Institute (NHLBI) launched the Salud Para Su Corazon (SPSC) Latino Community Cardiovascular Disease Prevention and Outreach Initiative. The SPSC model was developed as a community-based prevention and outreach initiative. The SPSC model since its inception has continued to adapt theoretical frameworks to develop a community-based outreach approach for the Hispanic community (Alcalay et al.,
The original SPSC model incorporated communication and health behavior theories including social learning, self-efficacy, and planned behavior to reach Hispanic families in the community (Alcalay et al., 1999).

This model also included an ecological perspective framework which included the individual, the family, and the community. A community-agency partnership perspective was a key strategy for implementing the SPSC original approach. Building a community alliance for heart health was the primary mechanism that guided all stages of the community intervention project to increase awareness of risk factors for CVD and to increase knowledge of ways to prevent heart disease among Hispanic individuals (Alcalay et al., 1999; Alcalay, Alvarado, Balcazar, Newman and Ortiz, 2000).

The PS model was incorporated into the original SPSC approach to build a stronger community participatory research component in which PS serve as direct agents of change for Hispanic/Latino individuals, families, and communities (Balcazar, et al, 2006; Balcazar, Alvarado, Hollen, Gonzales-Cruz, Hughes, Vazques and Pedregon, 2005; Balcazar, Alvarado, Hollen, Gonzalez-Cruz and Pedregon, 2005). PS serve the community by exposing Hispanic families to science-based practice knowledge about how to use heart-health risk reduction principles to affect behavior change. PS deliver educational sessions to Hispanic families using “Your Heart, Your Life” curriculum. This PS curriculum is a user-friendly, bilingual program for PS developed by NHLBI specifically for Hispanic communities. It offers a variety of cultural and language-appropriate instructional methods including lectures, handouts, recipes, hand-on demonstrations, videos, informal individual and group discussions, role-playing, peer teaching, actor scripts, problem solving, games, values and symbolism and group activities.
Two PS models have been developed as part of the SPSC project, the PS SPSC-National Council of La Raza (NCLR) (Balcazar et al, 2006; Balcazar, Alvarado, Hollen, Gonzalez-Cruz, and Pedregon, 2005; and the PS SPSC North Texas (SPSC-NT) Enhanced Dissemination and Utilization Center (EDUC) project (Balcazar, Hollen, Medina, Pedregon, Alvarado and Fullwood, 2005). These PS models have adapted new perspectives to the theoretical foundation for the development of culturally relevant interventions among Mexican Americans (SPSC-NT) and other Hispanic subgroups (SPSC-NCLR) (Balcazar, et al, 2006; Balcazar, Alvarado, Hollen, Gonzalez-Cruz and Pedregon, 2005). The SPSC-NCLR PS outreach model included several components: 1) theory-driven elements that guided the original SPSC project including, participatory and social action research (Flores, Castro, & Fernandez-Esquer, 1995; Minkler & Wallerstein, 2003); 2) the community-based organizations and community alliance of partners; 3) culturally-enriched process dimensions incorporated in the planning, development, implementation, and evaluation of the PS approach; 4) the train-the-trainer model of PS, 5) the dynamic relationships between promotoras, program participant families, and the community-agency, alliance-coalition, and 6) cardiovascular health promotion outcomes for Hispanic program participants (Balcazar et al, 2006).

Elements of the SPSC-NT included an ecological perspective based on the establishment of a network of partner organizations and the development of a culturally-enriched PS train-the-trainer activities to support a 6-month SPSC intervention with Su Corazon, Su Vida program (Your Heart, Your Life) implemented by PS. The PS model of the SPSC-NT included several enhanced dissemination and utilization initiatives that included culturally-enriched dimensions into the community participatory process. The different process dimensions of culture were
incorporated in the following domains: 1) Promotora recruitment, 2) Promotora training, 3) family participant recruitment to intervention, 4) program intervention, 5) monitoring intervention delivery, 6) program infrastructure, and 7) program evaluation. Examples of specific culturally-enriched dimensions have been reported for each of these domains (Balcazar, Hollen, Medina, Pedregon, Alvarado and Fulwood, 2005).

Findings from the SPSC PS intervention programs (Balcazar, et al, 2006; Balcazar, Alvarado, Hollen, Gonzales-Cruz, and Pedregon, 2005; Balcazar, Hollen, Medina, Pedregon and Fulwood, 2005) using different research designs have demonstrated that Mexican Americans and other Hispanic groups can change lifestyle practices related to cholesterol and fat intake, improvements in salt consumption, and physical activity and dietary behaviors towards weight reduction and control (Balcazar, and Luna Hollen, 2004; National Heart, Lung, and Blood Institute, 2003; Balcazar, Alvarado, Hollen, Gonzales-Cruz, and Pedregon, 2005). Findings from other PS prevention studies involving minority samples have also demonstrated positive results (Cohen & Ingram, 2005). These results suggest that a community outreach framework of PS can be used as an initial element of discussion of community participatory research activities to be developed within the context of an effective community outreach process. In Figure 1 we

**INSERT FIGURE I HERE**

introduce an adapted PS model for risk reduction of CVD risk factors that provides the basis for linking “bottom up” “top down” approaches to community participatory research applied to Hispanic within the context of our Hispanic Health Disparities Research Center (HHDRC), a collaborative between the College of Health Sciences of the University of Texas at El Paso, and
the University of Texas, School of Public Health, El Paso Regional Campus, Health Science Center at Houston.

The PS model of community participatory research needs also to take into account methodological strategies that account for the powerful effects which racial and ethnic disparities and socioeconomic factors have on the prevalence of multiple risk factors associated with chronic diseases such as CVD. Thus, interventions that address disparities in Hispanics must also be described within a contextual framework of social determinants of health (Borrell, 2005). In Figure 2 we present a hypothesized contextual model of CVD risk factor reduction for Hispanics.

**INSERT FIGURE 2 HERE**

that incorporates processes by which contextual factors, including immigration time, location and trajectory, socioeconomic position, acculturation, and neighborhood characteristics, work in association with psychosocial factors and individual characteristics (i.e., personal circumstances) which are modified based on culturally-appropriate and effective social/behavioral CVD risk reduction interventions. This figure represents an expanded framework described recently by Borrell (2005), for the effects of racial identity among Hispanics on health and well-being.

**Application of the PS Model for Community Participatory Research**

The PS model has been extensively used in the conduct of community-based participatory research and health education/promotion for the Hispanic population in the border community of El Paso, Texas (US-Mexico Border Health Commission, 2004; CERM, 2002; Texas Tech, 2005). Specifically, PS have been involved in community based participatory research projects in the areas of diabetes, alcoholism and depression, asthma management and
prevention, adolescent pregnancy, environmental health, to name a few. Unfortunately there has been limited information about how these programs have adapted the PS model into the community participatory research paradigm for addressing chronic disease disparities among Hispanics living in the El Paso, Texas border area. PS serve not only as liaisons between community research participants and researchers but also legitimize the research process. How does this process of research works within the context of the PS model?

Figure 1 describes several key components of the PS model that were derived from the SPSC family of programs (one of these SPSC programs, SPSC-NCLR was implemented in Centro San Vicente in El Paso, Texas) using PS that can be used as guidelines to establish a framework of community-based participatory research within a US/Mexico border environment. Identified in Figure 1 are several key components that can be seen as the foundation for setting up a community participatory research agenda with PS. These key components are: a research group represented by the HHDRC university partnership. Involving the community (see Figure 1) means working directly with PS. PS instill both trust and confidence serving as a bridge in the research process due to the fact that community participants identify with them. PS “opens doors” for researchers due to their understanding of acceptable community based cultural practices in terms of what is appropriate to ask in the research process and how appropriate and accurate research information can be obtained.

The PS model of community-based participatory research depicted in Figure 1 is about PS because they serve as direct agents of change in their health education and health promotion efforts due to the fact that their approach directly relates to the Hispanic population not only with respect to language but also to culture and delivery of familiar interventions like the SPSC PS.
program which has been very well accepted by the Hispanic community. Additionally, PS serve as outreach links due to their recognized connections. Figure 1 describes as part of the model building community alliances. PS should not be isolated in their work as change agents. They need the community agency, the community-based organization, the university partnership(s) to work as a team, to support them (financially, socially, emotionally, etc.). The community outreach process can be facilitated by building community alliances with PS (Balcazar, Alvarado, Hollen, Gonzalez-Cruz and Pedregon, 2005). Connecting PS with community health promotion programs is not an easy task, especially if these programs do not use PS. There is much to be learned from building community alliances for health promotion that have PS models as part of their outreach efforts.

Building PS requires appropriate training in specific topics that the PS will learn as they help in the delivery of educational programs that can be successfully implemented to reach the Hispanic family. Establishing the train-the-trainer approach has been a mechanism to build a new cadre of Promotora trainees that spread educational messages of specified programs though family health education activities. Credentialing PS is a hot topic and is being explored in many communities including the border to enrich the educational opportunities of PS. The topic of credentialing of PS is controversial to some groups, who feel that this credentialing process will take away the legitimacy of PS as truly community change agents.

Connecting PS with programs and with families requires good planning, development, implementation and evaluation to achieve the behavioral changes of risk reduction for chronic diseases that we want to see in Hispanic families (Figure 1). A truly participatory research project needs to have good outcomes, in the case for chronic diseases, it needs to develop
strategies of research that will initiate risk reduction among participating Hispanic families and ultimately maintain those behaviors that results in good clinical outcomes (i.e. reduction of BMI, blood pressure, increase physical activity, etc), thus reducing morbidity, and ultimately mortality associated with CVD.

To change behaviors and reduce risk factors for CVD among Hispanic families is a challenge and requires research to understand what factors are associated with changing behavior. Thus, we need research to inform us about how these factors should be included in community participatory programs. In Figure 2 we describe a paradigm for participatory research that can help in the definition of factors that are hypothesized to be responsible for affecting risk reduction for chronic diseases among Hispanics. These factors include: contextual factors, social resources, psychological responses and behavioral pathways. A key question for community-based participatory research is how a protocol that uses PS (Figure 1) can include all of these factors that seem to be important to reduce risks for chronic diseases such as CVD? PS can be social agents to affect behavioral change if both behavioral and social interventions are integrated within the contextual factors and social resources when applying the PS model. Social interventions in the case of Figure 2 include the need to introduce social resources to the intervention paradigm of PS models. These social resources for example may include social support, family cohesiveness, and copying mechanisms of some sort. Contextual factors of possible consideration for PS interventions are: acculturation level of the individual and family, immigration status including trajectories of immigration (e.g. history of immigration patterns, first time arrival to US, attempts made to migrate to US, cross-border utilization patterns), socioeconomic position and neighborhood characteristics. A challenge is to integrate the PS
model under a community-participatory research framework considering all of these contextual factors and social resources so that adequate changes in behavior through diet, physical activity, etc can be observed among Hispanic families. This is a difficult participatory research question to answer. This also means that a community participatory research protocol requires to be community-driven, to have a sound methodology, and to have a buy-in from PS in terms of how to collect this type of data and how to address the contextual and social resources that affect behavioral pathways so that we can monitor how behavior change occurred as part of PS interventions. Unfortunately we do not have much information about PS models that have attempted to reconcile research and community-driven participatory efforts within the context of an integrated model of PS such as that shown in Figure 2.

Challenges in Using the PS Community Based Research Models in the Border Area

In this section we identify several challenges for implementing the PS model (Figure 1) within the context of the integrated model of the effects of CVD risk factor reduction in Hispanic shown in Figure 2 for the El Paso border area and possibly other U.S.-Mexico border areas. Adapting positive behaviors for risk reduction of chronic disease such as CVD, diabetes, etc, using the PS model by Hispanic families requires a research perspective that considers the role of contextual factors and social resources and how they operate in a border environment.

In terms of contextual factors, there is a great need to adequately define how Hispanic families living in the border are subject to the effects of acculturation (Castro and Balcazar, 2000). Acculturation in this environment has very different connotations as it would be the case for Hispanics living outside the border. The use of English in the border environment for
example, is not as crucial as an intervening factor, the same may be true for variables such as place of birth, years living in the US. A better understanding of the acculturation process in the border is needed.

The immigration experience for Hispanics living in El Paso, Texas is probably very different from Hispanic immigrants (the majority Mexicans) living outside the border environment. Understanding the immigration experiences in a border environment is crucial and very rarely is taken into consideration when designing PS intervention projects. The colonias or neighborhood settlements located in the US side of El Paso have a distinct social context and their residents have a unique trajectory of immigration. Understanding who these residents are, were they came from, how they define themselves as Hispanics are questions that need to be carefully understood. Because many PS are from the community they share similar experiences regarding immigration histories. Many colonias lack basic services like water, sewage, and their residents may have many barriers that may affect their ability to adequately respond to PS interventions. To what extent PS can use effectively the immigration experience of Hispanic residents living in different neighborhoods who have distinct immigration experiences is an important question that PS can help answer. We need to document to what extent working with Mexican families in El Paso who have their lives very integrated with the Mexico side of the border (i.e. Cuidad Juarez) changes the nature of interventions using PS in terms of their understanding on how contextual factors such as acculturation, immigration, socioeconomic position and neighborhood characteristics operate in affecting interventions for risk reduction of chronic diseases.
Social resources including social support given by families and extended families, the dynamics of family cohesiveness as to how families help each other, and what copying mechanisms they use to combat socioeconomic and health problems are factors that PS know well working with Hispanic families. Unfortunately, little empirical evidence has been documented on how PS negotiates as change agents the social resources available (or not available) to families in the context of the border environment. A unique blend of family support and possible barriers to effectively use these social resources exists in the border environment that PS can capitalize on to promote the right approaches to reach families with intervention that work. This community driven participatory process of research requires then the collection of data on contextual factors and social resources to make better decisions on how PS models need to be tailored to build culturally-appropriate behavioral and social interventions for risk reduction associated with chronic diseases. We have just begin to surface the challenges of how PS models need to be integrated within research protocols that are complex, such as reducing risk factors for CVD in a border environment.

Conclusions

Within the El Paso/Cd. Juarez border region the use of Promotores de Salud as community health workers to participate in a variety of activities related to community based participatory research has shown much promise. Promising PS theoretical models and participatory research protocols using the PS are now emerging and are in great need for empirical investigation. Research addressing how to most effectively integrate and utilize PS as members of the health care team to address health problems along this bi-national border
community is beginning to emerge. The time has come to promote PS models that have a win-
win approach in terms of combining research with community practice.

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Figure 1. PS Model of Community Participation For Risk Factor Reduction For Chronic Diseases
Figure 2. Integrated Model of the Effects of CVD Risk Factor Reduction on Hispanics