Differences in Knowledge Acquisition, Perceived Engagement and Self-Efficacy in Latino Promotores Delivering the Heart Disease Prevention Program Su Corazón, Su Vida

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Differences in Knowledge Acquisition, Perceived Engagement and Self-Efficacy in Latino Promotores Delivering the Heart Disease Prevention Program Su Corazón, Su Vida

by

Samuel Matos-Bastidas

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy College of Public Health University of South Florida

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Keywords: community health workers, health promotion, cardiovascular disease, health program

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LIST OF ABBREVIATIONS

AAHE: American Association for Health Education
ANOVA: Analysis of Variance
APHA: American Public Health Association
BLS: Bureau of Labor Statistics
BMI: Body Mass Index
CBO: Community-Based Organization
CBPR: Community-Based Participatory Research
CDC: Centers for Disease Control and Prevention
CHW: Community Health Worker
CVDs: Cardiovascular Diseases
DALYs: Disability-Adjusted Life Years
DHHS: Department of Health and Human Services
DOL: Department of Labor
GFHR: Global Forum for Health Research
GLM: General Linear Model
HEART: Health Education Awareness Research Team Project
HIPAA: Health Insurance Portability and Accountability Act
HIV: Human Immune-deficiency Virus
HRSA: Health Resources and Services Administration
IOM: Institute of Medicine
IRB: Institutional Review Board
LMIC: Lower Middle-Income Country
MATCH: Mobilizing Action Toward Community Health Logic Model
MCH: Maternal and Child Health
MDGs: Millennium Development Goals
MH: Mental Health
NCDs: Non-communicable diseases
NCLR: National Council of La Raza
NHLBI: National Heart, Lung and Blood Institute
NIH: National Institutes of Health
NWS: National Workforce Study
OMH: Office of Minority Health
PAHO: Pan-American Health Organization
PPM: PRECEDE/PROCEED Logic Model
PRE: Predisposing, Reinforcing and Enabling Factors
PRECEDE: Predisposing, Reinforcing and Enabling Constructs in Educational/Environmental Diagnosis and Evaluation
PROCEED: Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development
PRT: Promotores Readiness Test
PSS: Pre-Selection Survey
SCC: Senior Connection Center (formerly West Central Florida Area Agency on Aging)
SCSV: Su Corazón, Su Vida (Your Heart, Your Life) program
SCT: Social Cognitive Theory
SDGs: Sustainable Development Goals
SMART: Specific, Measurable, Achievable, Realistic and Time-based (acronym for setting objectives)
SOC: Standard Occupational Classification
SPIG: APHA’s Special Primary Interest Group
UN: United Nations
VHW: Village Health Worker
WHO: World Health Organization
YMCA: Young Men’s Christian Association
**ABSTRACT**

*Su Corazón, Su Vida* (Your Heart, Your Life) is a community-based, small-group health intervention designed to empower Latinos to enhance cardiovascular disease awareness and initiate enduring lifestyle changes to improve health outcomes and quality of life. Originally developed to be delivered in weekly sessions in Spanish or English language, it addresses several heart disease risk factors including unhealthy eating habits, poor physical activity, high cholesterol, overweight, metabolic syndrome, diabetes and tobacco smoking, among others. Instructors use diverse learning and support strategies such as group discussion, role modeling, problem-solving, health action planning, and self-monitoring. Participants help each other to stay on track by making weekly pledges and reporting on them to the class the week after. Course materials include bilingual flipcharts, activity handouts, the *Act in Time to Heart Attack Signs* video, and the instructor manual. Program facilitators are usually community members who received the curriculum and then became *promotores de salud* using the train-the-trainer model. While the program has proven to be effective, there have been few publications examining the lived experiences of participants during the training and facilitation processes. Both quantitative and qualitative methods were employed in this research study, whose primary purpose was to understand participants’ perceptions while being trained and then teaching *Su Corazón, Su Vida* in Spanish to other community members. Findings were informed by tenets from the PRECEDE-PROCEED model (PPM) and the social cognitive theory (SCT), including implementation barriers and facilitators potentially affecting program *engagement* and *promotores’ self-efficacy*. 
The secondary purpose of this study was to compare changes in heart health knowledge outcomes in newly trained promotores and community members receiving Su Corazón, Su Vida from them, by using a validated test based on the program’s curriculum. For both groups, the 23-item pretest was found to be reliable and internally consistent, with a Cronbach’s $\alpha$ of .810. The 23-item posttest had a Cronbach’s $\alpha$ of .783. A total of 20 Latino participants were recruited to attend five 2-hour training sessions, followed by program facilitation with a similar schedule. Seventeen promotores completed the training, of whom 16 completed the pretest/posttest, taught the program and underwent in person, in-depth interviews at the end. Thirty-two community members receiving the program from promotores also completed the pretest/posttest. Results from the quantitative confirmatory phase indicated that there was significant increase in heart health knowledge acquisition after the intervention was delivered in promotores ($t(15) = 3.967, p = <.01; 95\% CI: 1.561, 5.188$) and community members ($t(31) = 3.337, p = <.01; 95\% CI: 1.093, 4.532$). Compared to Latinos born in the U.S., Latino promotores born abroad obtained higher knowledge posttest scores ($F(1, 14) = 7.35, p = .02$). There were no differences in post-intervention knowledge based on participants’ age ($r = .11, 95\% CI: -.371, .513$), gender ($F(1, 14) = .41, p = .53$), education level ($F(3, 12) = 2.93, p = .08$), and language spoken at home (Spanish only vs. English and Spanish) ($F(1, 14) = .002, p = .97$). Qualitative findings of the exploratory phase indicated that participants equated the program’s positive outcomes to their own efficacy as promotores and to community members’ empowerment. They perceived self-efficacy as commensurate to program engagement, and related to personal attributes like acquiring proper knowledge, and possessing certain communication and personality traits. Promotores also linked community members’ empowerment to their ability to make decisions conducive to health behavior change. Challenges found included scheduling and transportation
issues. Participants suggested some modifications in the program contents and delivery such as introducing new activities and working in small groups close to home. Elements of the social cognitive theory and the PRECEDE-PROCEED model informing program training and facilitation included observational learning (role modeling), reciprocal determinism, outcome expectations, incentive motivation and other self-management constructs. Several recommendations to enhance the program’s reach and sustainability are provided. Su Corazón, Su Vida offers a viable and inexpensive avenue to inform Latino families and encourage positive changes leading to cardiovascular disease prevention and control.
CHAPTER ONE:

STATEMENT OF THE PROBLEM

Cardiovascular Disease

Cardiovascular diseases (CVDs) remain the leading cause of death in industrialized countries as well as in the developing world, causing about 31% of all fatalities worldwide. Globally, this equates to 17.9 million people. Of these deaths, 85% are due to heart attack and stroke. CVDs include ischemic coronary disease, congestive heart failure, cerebrovascular disease (stroke), and peripheral vascular disease (WHO, 2020). Both CVDs and other chronic non-communicable diseases (NCDs) such as diabetes, cancer, and chronic respiratory disease have progressively replaced infectious disease as the main cause of morbidity and mortality in lower middle-income countries (LMICs), a trend previously seen in developed nations. Because of such an epidemiological transition, LMICs now account for more than three quarters of CVDs deaths worldwide. Limited access to integrated primary healthcare and to high-tech medical resources also places an undue social and economic burden on families (WHO, 2020).

While the average CVDs mortality rate in the Americas (132/100,000) is better than worldwide figures (298/100,000), there are still sharp differences across the region according to income. Higher CVDs mortality was observed in low-income (242 per 100,000) and medium-income (186 per 100,000) nations, compared to high-income countries (154 per 100,000) (Avezum et al., 2018). Despite a decline in CVDs being observed in the Americas, great disparities persist among individual countries of the region in terms of morbidity and mortality. For instance, rates above 200 per 100,000 still persist in Guyana, Trinidad and Tobago, the
Dominican Republic, Bahamas, and Brazil (Avezum et al., 2018). CVDs are the leading cause of death in the United States, which is similar to worldwide mortality trends. They are currently responsible for about 1 out of 3 deaths, or 854,390 people; mortality rates of 198.8/100,000 for heart disease and 44.9/100,000 for cerebrovascular disease were reported in 2017. Gender disparities also persist across the region, with heart disease mortality rates being consistently higher in males than females. In the U.S. general population, rates of heart disease are 216.9 (438,041 deaths) and 181.2 (416,349 deaths) per 100,000 population, respectively. Among Hispanics, heart disease caused 29,171 deaths in males and 25,181 deaths in females (Kochanek, Murphy, Xu, & Arias, 2019).

Higher life expectancy has resulted in a demographic transition characterized by progressive aging of populations. This, in turn, has favored an epidemiological transition with resulting increase of chronic non-communicable health conditions like CVDs. About 15% of the American population is aged 65 and older, which means more opportunities for CVDs and their complications to occur. There are approximately 83 million people in the U.S. suffering diverse forms of CVDs including high blood pressure, coronary disease, stroke, and heart failure (WHO, 2020). Also, there are 735,000 heart attacks each year, of which 525,000 occur for the first time. In terms of mortality, some 750,000 annual deaths are attributable to heart disease and stroke combined, amply exceeding those caused by cancer or lung disease. In summary, heart disease is the leading cause of death across all races/ethnicities excluding some minorities such as Asian Americans, Alaska Natives and American Indians (CDC, 2017).

Heart disease is the leading cause of death among those aged 65 years and older, ranking second in the 45-64 y, and third in the 25-44 y age groups (Kochanek et al., 2019). It also imposes an undue societal burden because of its increasing occurrence in younger age groups,
which means less economic productivity. CVDs are also economically burdensome in high-income countries like U.S. where their total cost amounted to USD 351.2 billion in 2014-15 (USD 213.8 billion in healthcare expenditure and USD 137.4 billion in lost productivity and mortality) (Benjamin et al., 2019). For these reasons, effective primary prevention interventions offer a less expensive--and much healthier--alternative to the treat-when-it-happens approach to CVDs management.

The burden of CVDs can be reduced through prevention measures at two levels: population-wide and individual interventions, whether the individual is still healthy (primary prevention) or has an established disease (secondary prevention). The World Health Organization (WHO) recommends combining both strategies to implement measures such as comprehensive tobacco control policies, taxation (to reduce intake of foods high in fat, sugar, and salt), building walking and cycling paths to encourage physical activity, and creating healthy school menus for children (WHO, 2020). The above measures are included in the WHO’s Global Action Plan for the Prevention and Control of NCDs 2013-2020. This plan aims to achieve a 25% reduction in the number of premature deaths from NCDs by year 2025. From the nine targets included in such a plan, two targets call for a 25% reduction in the global prevalence of hypertension, and an optimization in the number of eligible people (at least fifty percent) to receive drug therapy and counseling (including glycemic control) to prevent heart attacks and strokes (WHO, 2020). Health promotion is fundamental in each of the three levels of prevention, because it targets several CVDs risk factors like tobacco use, sedentary life, unhealthy eating, and stress.
Community Health Worker as a Profession: First Attempts

Health promotion has long been at the forefront of the WHO’s strategies to achieve health for all. Since the Declaration of Alma-Ata (now Almaty, Kazakhstan) outlined the necessary steps for all the countries to achieve an acceptable level of health by year 2000, many efforts have been made to include health promotion and disease prevention as socially acceptable, scientifically sound, and ethically justifiable measures undertaken by health authorities and communities (WHO, 1978). The Declaration clearly gave “education concerning prevailing health problems and the methods of preventing and controlling them” a preponderant role requiring maximum community and individual participation in the planning, implementation, and evaluation efforts. To this end, it also established a place for health workers, including community workers. The desirable, ongoing interaction between community members and community health workers (CHWs) is referred to as community embeddedness (WHO, 1978).

Prior to Alma-Ata, there were attempts to engage local, non-professional people from underserved communities to provide health education and take care for their peers (Campbell & Scott, 2011). China’s barefoot doctors and Thailand’s village health volunteers are examples of such community-based initiatives, following a wave of decolonization and democratization in Southeast Asia, Africa, and Latin America in the 1950s-1960s (Zhu, Ling, Shen, Lane, & Hu, 1990).

In the U.S., the role of CHWs started in the 1960s as an effort to reach out to underserved communities with health promotion and disease screening programs, especially in remote areas. However, their popularity has experienced ups and downs, and they have recently thrived in
marginalized communities and ethnic minorities left out by the conventional healthcare system (Koch, 1998; Swider, 2002). More recently, efforts have been made to articulate diverse common issues faced by CHWs, and to propose policies and recommendations benefiting their roles. Through Policy Statement 2001-15, the American Public Health Association (APHA) established a Special Primary Interest Group (SPIG) who worked with a host of advocates toward a national definition of the CHW workforce (APHA, 2001).

Competencies and Roles of the Community Health Workers

The functions a CHW can effectively perform should be commensurate to their level of education, type and duration of training, community health needs, and size and geographical distribution of the population being served (Lehmann & Sanders, 2007). Acting as liaisons between health systems and communities, CHWs are uniquely positioned to tackle many challenges such as health disparities, access to care, quality of care, and health care costs. Their advantageous position as skilled advocates, outreach workers, and care coordinators enables them to fill up gaps in health systems. According to WHO, PEPFAR, and UNAIDS (2007), CHWs can perform both medically-oriented and socially-oriented tasks depending on their training, education level, and specific mission in the local community. For instance, the WHO recommends 313 specific tasks for Human Immunodeficiency Virus (HIV) infection prevention and control, 115 of which can be performed by CHWs. Of these 115 duties, 48 are related to medical skills while 67 tasks can be classified as socially oriented. WHO’s Task Shifting approach recommends that non-physician clinicians, and even people living with HIV/AIDS, “can safely and effectively provide specific HIV services, both in a health facility and in the community” (WHO et al., 2007).
Medically oriented competencies focus on individuals, are typically performed in medical environments, and often include the use of thermometers and weight scales. Socially oriented tasks, on the other hand, are related to raising public awareness and generating behavior change in non-medicalized settings like homes, churches and schools (Campbell & Scott, 2011). Medical tasks related to HIV/AIDS care performed by CHWs include testing and counseling in facility and community, execute/interpret HIV test (rapid test or ELISA), manage self-limiting side-effects of antiretroviral (ARV) drugs, and take weight, height and vital signs among others. Social tasks include educate on HIV testing and counseling on prevention issues, provide key information on HIV, safer sex and condom use, distribute condoms and educational materials, and advise on nutrition, clean water and other sanitation measures as needed (WHO et al., 2007).

Designed to ameliorate the increasing shortage of health workers in developing countries (and in developed ones as well), and to help achieve the United Nations’ Millennium Development Goals (MDGs), the Task Shifting Guidelines consider CHWs as “another pair of hands” in clinics to help nurses and doctors perform medical tasks. In this direction, the medical and social competencies allow CHWs to undertake different roles in the community, such as educators and health promoters (WHO et al., 2007). Another role-based classification of CHWs has divided them in generalists and specialists. Generalist CHWs are expected to perform a wide range of functions including home visitation, environmental sanitation, provision of water supply, first aids, treatment of simple ailments, health education, nutrition counseling, family planning, communicable disease control, referrals, record-keeping, and collection of vital statistics. The Chinese barefoot doctor program and Brazil’s Programa Agente Comunitário de Saúde (Ceará State program) would be examples of generalist CHW programs. Specialist CHWs, on the other hand, have a program-specific focus, i.e. they perform fewer health roles within a
defined thematic area such as maternal-child health, TB care, malaria control and HIV/AIDS care. Specialization has mainly taken place in the last few decades as an attempt to find a precise balance between expertise and flexibility (Lehmann & Sanders, 2007).

After the MDG-era, additional global initiatives have been devised to fill the remaining MDG gaps. The Sustainable Development Goals (SDGs) is a multi-country 17-goal development agenda mounted on the three pillars of development: economic, social and environmental. One of its sub-targets, to “ensure healthy lives and promote well-being for all at all ages” (Goal # 3), pursues a substantial increase in the recruitment, development, training and retention of the health workforce in developing countries, especially in the least developed ones (UN, 2015). CHWs are called to be frontrunners in this fifteen-year (2015-2030) enterprise.

Efforts to empower CHWs as necessary agents of change in the U.S. have come from many fronts. Besides the APHA, other medical and health-related policy-making organizations such as the Institute of Medicine (IOM), the International Labor Organization (ILO, 2012), and the U.S. Department of Health and Human Services (DHHS) have issued policy papers on CHWs’ roles and functions. The 1998 National Community Health Advisor Study proposed the following seven roles for CHWs (Koch, 1998):

1. Bridging and providing cultural mediation between communities and health and social service systems (cultural brokers).
2. Providing culturally appropriate health education and information (health educators).
3. Ensuring people get services they need (health navigators).
4. Providing informal counseling and social support (counselors).
5. Advocating for individual and community needs (community advocates).
6. Providing direct service, such as basic first aid and administering health screening tests (health services providers).

7. Building individual and community capacity (capacity builders).

Likewise, the IOM strongly urged that health and social services “programs using CHWs, especially among medically underserved and racial and ethnic minorities, should be expanded, evaluated and replicated.” IOM’s report on racial and ethnic disparities recommended “integration of trained CHWs into multidisciplinary health care teams using community-based, comprehensive approaches to best address such issues” (IOM, 2003).

In addition to their functions in the local communities’ health and social services systems, CHWs act as advocates and agents of social change. They typically conduct a broad range of activities that include home visitation, administering immunizations, giving referrals, and counseling for diverse health issues. However, there is still lack of consensus regarding their exact competencies and roles; in this sense, perhaps it would be wiser to point out what professions they do not include: nurse aides, medical assistants, physician assistants, paramedics, traditional healers and birth attendants, among others (Lehmann & Sanders, 2007). Other authors like Balcazar et al. (2011) have vowed for an ethical perspective that “change health care from ‘sickness care’ systems to systems that provide comprehensive care for individuals and families and supports community and tribal wellness.” They propose three specific action steps to further advance such a preventive, patient-centered philosophy: 1) Incorporating CHWs’ unique perspective into the improvement of healthcare systems; 2) Promoting the integration of CHWs in the full range of healthcare delivery and population health programs; and, 3) Implementing a national evaluation research and policy-making agenda to ensure the sustainability of the CHW workforce in the long term.
A systematic review covering twelve years of peer-reviewed articles and grey literature (Olaniran, Smith, Unkels, Bar-Zeev, & Van Den Broek, 2017) aimed to categorize CHWs according to their competencies and level of education. The following three main groups were identified using a modified version of the ILO’s definition of paraprofessionals: lay health workers, characterized for having little to no formal education and receiving a short informal training; level 1 paraprofessionals, usually having some kind of secondary education and receiving informal training outside a recognized institution; and, level 2 paraprofessionals, with secondary education and formal training from a recognized institution lasting a few months to more than a year. The authors also established a direct relationship between this competency-based classification and remuneration. Lay health workers usually were unpaid whereas level 1 paraprofessionals received allowances and performance incentives, and level 2 paraprofessionals often were salaried.

Furthermore, selection criteria depended on whether CHWs were being recruited by the community or other organizations. In general terms, residence in the community and personality traits that engender trust and respect were considered extremely important by recruiting community organizations and NGOs, while health facilities and government employers preferred educational qualifications and previous experience in healthcare as desirable traits. Most importantly, this review found that CHWs in high-income countries like the U.S. mainly cater to ethnic minorities and low-income communities, by providing health promotion services related to chronic conditions such as CVDs and diabetes (Fleury, Keller, Perez, & Lee, 2009). The opposite occurs in LMIC where CHWs are more focused on communicable disease (Olaniran et al., 2017). Such findings are aligned with this research’s intent to explore the cultural and socio-educational mindset of Latinxs in the U.S. becoming heart health promoters.
**Su Corazón, Su Vida: A Proposed Health Intervention**

*Su Corazón, Su Vida* (Spanish for *Your Heart, Your Life*) is a culturally sensitive heart health promotion program, developed by the federal government, that can be delivered in Spanish or English and is based on simple concepts about the behavioral control of cardiovascular risk factors (NHLBI, 2014b). By using colorful picture cards and presenting familiar contexts, *Su Corazón, Su Vida* (SCSV) allows participants to gain awareness on, and to apply in their lives, basic concepts of cardiovascular function and heart prevention. It has been successfully implemented in places such as California, Illinois and New Mexico (Balcazar et al., 2006), as well as in northern Mexico (Balcazar, Byrd, Ortiz, Tondapu, & Chavez, 2009).

A modified version of this program was delivered to the research participants with the purpose of measuring their knowledge scores before and after the intervention, as well as their perceptions on the program’s barriers and facilitators. Although a detailed description of the program’s content and pace will be provided on chapter two, SCSV is typically facilitated in time periods ranging from four to twelve sessions. This program is the flagship product of *Salud Para Su Corazón* (Health for Your Heart), an evidence-based, nationally recognized, culturally sensitive, and language appropriate initiative of the National Heart, Lung, and Blood Institute (Alcalay, Alvarado, Balcazar, Newman, & Huerta, 1999; NHLBI, 2014b).

The cardiovascular disease curriculum of SCSV was designed for community-based organizations (CBOs), and is based on the model of community-based participatory research (CBPR) to reduce risk factors for CVDs, diabetes, and other chronic diseases (Balcazar et al., 2010). This initiative was first launched in 1994 as a partnership between the NHLBI and several academic institutions, professional associations, and nonprofit organizations. After the first SCSV Manual especially for Latinos appeared in 1999, other manuals were developed including

In addition to the multiple advantages and benefits of the NHLBI’s *Su Corazón, Su Vida* curriculum, its integration with the *promotor de salud* model is what distinguishes it from other heart health programs (Balcazar, Alvarado, Hollen, Gonzalez-Cruz, & Pedregon, 2005). *Promotores* have proven to be a cost-effective intervention strategy for expanding health access and health care services to underserved and underinsured minority communities, including Latino communities in the U.S. and abroad (Ro, Treadwell, & Northridge, 2003). Moreover, the SCSV’s curriculum has been considered “one of the best available educational materials for addressing cardiovascular disease risk factors in the Hispanic/Latino community in the U.S.” (Balcazar, Byrd, et al., 2009).

The NHLBI curriculum was chosen primarily because it has been widely tested and utilized. The NHLBI curriculum addresses preventing heart disease as a primary target without neglecting other chronic conditions. Secondly, other examined curricula focused on cardiovascular disease control rather than prevention. Thirdly, this curriculum has proven to be culturally competent among Latino communities. Fourthly, it is available in Spanish from its creation, and its level of literacy is low enough to make it understandable to broader audiences. Finally, this curriculum was developed with wide input from CHWs, and it was designed to be facilitated by *promotores*.
Statement of the Problem/Need

Heart disease poses a heavy burden for disadvantaged populations such as Latino minorities in the United States. Due to the many challenges encountered by these communities to access appropriate health services and the prohibitive costs of conventional hi-tech healthcare, successful preventative educational programs seeking behavioral change have been pondered. There are currently limited studies showing how the changes in heart health knowledge of Latinos trained as Su Corazón, Su Vida (SCSV) program promotores are influenced by different demographic factors. I am especially interested in exploring participants’ lived experiences when teaching the program to other community members, as such experiences can act as predictors of program success and promotor effectiveness. To fill this gap in the literature, it is imperative to implement and evaluate interventions such as SCSV to make sure they reflect the cultural preferences of Latinos. Therefore, research is needed on the process of training selected participants to facilitate the SCSV health curriculum, through a capacity-building process involving key local allies and the participant community. I did assess the role community members play in becoming effective promotores serving their own neighborhoods, as well as the factors determining such success.

Research Plan

Purpose of the Study

The main goal of this pretest-posttest design study is to evaluate the training and facilitation processes as well as learning outcomes of a group of Latinos living in Tampa, Florida who were trained as promotores to facilitate the SCSV program (exposure) to other community members. Quantitative changes in heart health knowledge were compared before and after the
intervention was delivered both in *promotores* and community members (outcome). *Promotores’* lived experiences while teaching the program were also assessed in the qualitative portion of the study. Some tenets included perceived level of engagement and personal self-efficacy. Cultural factors potentially creating training and implementation barriers and facilitators were explored as well. I do hope such assessment will help establish the adequacy of SCSV in forming community-based health promoters in different sub-settings within the Latino population and, in this way, I expect this research will contribute to inform any future program development.

**Objectives of the Study**

Objective 1: To compare changes in heart health knowledge of both Latino *promotores*, before and after completing SCSV health promoter training, and community members before and after receiving SCSV from *promotores*.

Objective 2: To understand the lived experiences of Latino *promotores* while facilitating SCSV to community members.

Objective 3: To understand the role played by different factors in *promotores’* knowledge acquisition and success.

The above objectives were addressed through the following research questions.
Research Questions

Table 1.1: Research Questions according to Objectives

<table>
<thead>
<tr>
<th>Objective</th>
<th>Research Question</th>
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<tr>
<td>1, 3</td>
<td>1. What factors relate to heart health knowledge scores change in Latino <em>promotores</em> and community members?</td>
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<tr>
<td></td>
<td>1.1 Is there any difference in mean score change based on <em>promotores</em>’ age?</td>
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<td></td>
<td>1.2 Is there any difference in mean score change based on <em>promotores</em>’ gender?</td>
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<td></td>
<td>1.3 Is there any difference in mean score change based on <em>promotores</em>’ education level?</td>
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<td></td>
<td>1.4 Is there any difference in mean score change based on <em>promotores</em>’ primary language spoken at home?</td>
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<tr>
<td></td>
<td>1.5 Is there any difference in mean score change based on <em>promotores</em>’ place of birth?</td>
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<tr>
<td>2, 3</td>
<td>2. Assess the barriers and facilitators influencing perceived program engagement and self-efficacy in Latino <em>promotores</em> teaching the heart disease prevention program <em>Su Corazón, Su Vida</em></td>
</tr>
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</table>

Question 1 was addressed through the application of a Pretest/Posttest design, and question 2 was addressed by conducting individual, in-depth interviews and observation of *promotor*-delivered classes. The alignment of the research questions with the study variables, domains, data collection tools, and analysis procedures is fully explained in the Methods section in Chapter 3.

Significance of the Study

Public health problems typically consist of three distinctive components: *magnitude*, *relevance* and *vulnerability*. Magnitude refers to high morbidity, mortality, disability, and other measures of disease burden such as Disability-Adjusted Life Years (DALYs) due to ill-health and Health-Adjusted Life Expectancy (HALE) (Skolnik, 2016). Relevance examines the social and economic impact of the health issue as well as the transcendence and importance the affected populations assign to it. Finally, vulnerability means if, and how, the health issue can be fought
against. CVDs meet the three criteria above because it remains the leading cause of death both in developed and developing countries, it carries an important socioeconomic toll, and it is amenable to control and prevention actions.

The course Su Corazón, Su Vida has been delivered to underserved at-risk populations in the U.S. using low-cost resources such as lay health educators and community venues. However, promotores’ lived experiences in perceived program engagement and self-efficacy while learning and teaching the program have not been explored. Adapting this program to the particular conditions of Latino subpopulations in the U.S. must include the appropriate selection, training and motivation of successful health promoters. Such optimization of human assets would contribute to resource saving and would help reduce the disparities gap in heart disease and other chronic health issues in Latinos.

**Definition of Some Terms**

**Cardiovascular Diseases (CVDs):** Group of chronic disorders with similar risk factors affecting the heart, blood and vessels, and including ischemic coronary disease (heart attack), congestive heart failure, cerebrovascular disease (stroke), and peripheral vascular disease among others (WHO, 2020).

**Chronic Disease:** Health condition that has long duration or slow progression, usually responding to multifactorial causes; examples of chronic, non-communicable diseases are cardiovascular diseases (like heart attacks and stroke), cancers, chronic respiratory diseases (such as chronic obstructive pulmonary disease and asthma) and diabetes. They are generally considered to be treatable but not curable (WHO, 2018).
Community Health Worker (CHW): A frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served, thus allowing them to work as intermediaries between the community, and available health and social services (APHA, 2009).

Education Level: Sometimes also called educational attainment, it designates the highest diploma or degree, or level of work towards a diploma or degree completed by a person.

Health Education: Array of consciously constructed opportunities for learning, involving some form of communication designed to improve health literacy and develop life skills which are conducive to individual and community health (WHO, 1998).

Health Promotion: Process of enabling people to increase control over their health and its determinants, and thereby improve their health, through strategies of advocacy, social mobilization, and development of healthy public policy (WHO, 1998).

Latino/Hispanic: Terms designating any person in the U.S. with genealogical origins in Latin America/Spain, who may be racially diverse but sharing a language (Spanish) and cultural heritage. It is considered an ethnolinguistic group (ethnicity), not a race (WPL, n.d.). Both terms were used interchangeably in this research.

Promotor: Short for promotor(a) (or promotores) de salud, it is the Spanish language term designating a usually female CHW reaching out to underserved members of Latino/Hispanic communities to improve their health status. They are usually members of the target population, and share many of the same social, cultural and economic characteristics (DHHS, 2011).
*Su Corazón, Su Vida*: Spanish-language designation of a cardiovascular disease prevention program (*Your Heart, Your Life*) designed by the NHLBI (2014b) to be delivered in English or Spanish, through which participants learn to avoid and control heart disease risk factors.
CHAPTER TWO:

REVIEW OF THE LITERATURE

Introduction

Health promotion is widely considered a fundamental pillar of public health. Along with major improvements in sanitation and the development of vaccines, it has helped greatly the efforts to eradicate infectious disease and diminish the burden of non-communicable diseases. Educational interventions to prevent illness and promote healthy behaviors may be delivered by diverse professionals and laypersons, from medical doctors, nurses and social workers to community advocates and traditional healers. Community-based health promoters come from different backgrounds and have been termed in many ways depending on their intended duties and populations served.

Cardiovascular disease is the first cause of death in the U.S. and worldwide, and its prevalence is strongly influenced by factors related to lifestyle (WHO, 2020). While the cardiovascular mortality rate in the U.S. has decreased in recent years and is below the average for the Americas (168/100,000), it is still higher than that of middle-income countries in the region such as Chile, Costa Rica, Mexico and Peru (de Fatima Marinho de Souza, Gawryszewski, Orduñez, Sanhueza, & Espinal, 2012). Su Corazón, Su Vida (Your Heart, Your Life) is a bilingual (English-Spanish) program established by the federal government in 1999 to provide heart health education to families, thus improving cardiovascular outcomes. It is centered on changing behaviors related to well-known cardiovascular risk factors, and it has
proven to be culturally sensitive (NHLBI, 2014b). Nonetheless, there is very limited experience
documenting how Latino *promotores* perceive program engagement and self-efficacy, and how
different barriers and facilitators might influence effectiveness on implementing this health
intervention in Latino communities of the U.S.

**Global Health and Burden of Disease**

MacLachlan (2006) describes global health as “an attempt to address health problems that
transcend national boundaries, may be influenced by circumstances and experiences in other
countries, and are best addressed by cooperative actions and solutions” (p 259). Over the last 50
years, global health victories have been impressive. Smallpox eradication, polio confinement to
only three countries in the world, and malaria deaths reduction by more than 25% since 2000 are
some examples. Also, child deaths from diarrhea and maternal mortality rate have fallen by
about 50% each since 1990 (Himelfarb, 2014). Successes in the fight against communicable
disease, and the subsequent progressive aging of the world population, have resulted in chronic
conditions like cardiovascular disease and diabetes are increasingly dominating morbidity and
mortality figures in developing and developed countries alike. The result has been a shift in
priorities of governments worldwide.

Health is now described from many perspectives. From a human right perspective, health
has been included in almost every country’s constitution as a responsibility of each nation to its
citizens. In this context, ill health problems are caused by multiple factors, and usually require
shared, multidisciplinary solutions. Moreover, there are tremendous inequalities and privileges in
accessing health services. According to the Global Forum for Health Research, of the USD 73
billion invested annually in global health research, only about 10% of funding from all sources is
devoted to 90% of the world’s health problems. This disparity is better known as the “10/90 gap” (GFHR & WHO, 2004).

Global health disparities also pose a great impact on human and economic development: health has been unanimously deemed a prerequisite for development and a key to maintaining global security (Labonte, 2004). In this vein, the eight Millennium Development Goals (MDGs), including their twenty-one targets, aim to reduce health and socioeconomic disparities through sustainable development. Especially MDG-1 (eradicate extreme poverty and hunger) and MDG-8 (develop a global partnership for development) address social and economic determinants of health (UN, n.d.).

More recently, the Sustainable Development Goals (SDGs) have been proposed as a means of taking over what the MDGs left unmet through the so-called “5 Ps”, thus urging action over the years 2015-2030 in critical areas for the future of humankind, namely people, planet, prosperity, peace and partnership; likewise, health is considered as inextricably linked to sustainable social, economic and environmental development. Of the 17 proposed SDGs (including 169 sub targets overall) approved by the world dignitaries on late September 2015, SDG-3 is directly concerned with healthy life and wellbeing for all at all ages. Its thirteen sub-targets address diverse health concerns from maternal-child health (MCH) to mental health (MH) issues, from communicable disease to chronic, non-communicable conditions. In this respect, sub-target 3.4 advocates for a reduction by one third of premature mortality from non-communicable diseases through prevention and treatment, by 2030. Implementation of successful tobacco control strategies in all countries is also called for in another sub-target (UN, 2015). Healthcare workers, and especially lay health workers like promotores, play a central role in these initiatives (de Francisco Shapovalova, Meguid, & Campbell, 2015).
The rationale behind this joint effort between high income and middle-low income countries is to ameliorate the global burden of disease, where heart disease plays a major role regardless of a country’s income level. Presently, sustainable socioeconomic development is tightly intertwined with concepts like global citizenship, interdependence, social justice, cultural diversity and values, conflict resolution and human rights, especially the right to health (de Francisco Shapovalova et al., 2015).

**Culture and Health**

Intersect between culture and health is quite complex. Health and illness are experienced differently across cultures. While health is considered a universal asset, it may be conceived in diverse ways by different human groups. It is frequently said health is a local phenomenon because factors leading to their presence (or lack of) are produced and modulated locally. Under the 1946 World Health Organization Constitution’s definition of health as “a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity” (WHO, 1946), many attempts have been made to adapt this concept and its interpretation to the peculiarities of specific populations. Such adaptation is especially important when those populations are considered minorities in any given geographic space, such as Latinos in the U.S. At this point, the concepts of health and culture intersect very closely.

More than 150 different definitions of culture have been proposed demonstrating an ample variability and lack of consensus in the usage of the term. Culture has been defined as “the histories, attitudes, behaviors, languages, values, beliefs and uniqueness, which distinguish each racial or sub-cultural group in a society” (Kroeber & Kluckhohn, 1978). Another definition
refers to “the way of life of people and includes the tools or methods by which they extract a livelihood from their environment” (Smart & Smart, 1995).

Culture has also been put into conceptual categories such as generic (learned vs instinctive behavior), artistic expression, hierarchical and hegemonic (expressing dominance or power distribution among groups), or holistic and pluralistic (denoting interconnectedness and coexistence) (Allen, 1992). Above categories often overlap. Due to such variation, an operational, pragmatic definition of culture as it relates to the health field should be used. In this case an interesting analogy has been posed between biologists needing “a particular ‘culture’ (lab) to allow the growth of a specific (micro) organism, and ‘social cultures’ nurturing the growth of people with particular beliefs, values and habits” (MacLachlan, 2006). Moreover, culture entails the way people manage to communicate those beliefs, values and habits with each other and across human groups. In the public health and healthcare fields, for instance, culture determines our perceptions of disease and health seeking behaviors, as well as the health providers’ attitudes, all of which affect the delivery of services. For this study, I have used MacLachlan’s definition of culture.

For a public health intervention to be effective, an alignment between cultural constructs of both providers and recipients should be the norm; cultural competence addresses such an alignment. The American Association for Health Education (AAHE) defines cultural competence as “the ability of an individual to understand and respect values, attitudes, beliefs, and mores that differ across cultures…” (JCHEPT, 2012). The above definition also encompasses using such ability when planning, implementing and evaluating health promotion programs. Likewise, organizations may have or acquire cultural competence, which entails those “behaviors, attitudes, and policies within a system, agency…that enable them to work effectively
in cross-cultural situations” (Cross, Bazron, Dennis, & Isaacs, 1989). Culturally diverse settings include individual and family homes, schools, churches and faith-based organizations, and the community at large. For instance, delivering a health program to church members might require the health promoter to be mindful of their spiritual beliefs and their interaction with the proposed intervention (Pérez & Luquis, 2008).

Symbols and codes used in culture communication include words, gestures, beliefs, and customs. Hence, informal and formal language are key components of cultural competence. As health is considered a supreme good, it is not surprising that cultural groups have used different ways to communicate the health-related phenomena. This way, in addition to having a physical or pathophysiological explanation, diseases also entail psychological and social dimensions that define how a specific ill-health condition will be conceived by the patients, their families, and the whole society. The better a targeted community owns the cultural constructs of a public health issue, the higher its likelihood to accept, adopt, and act upon a proposed health behavior change.

During the 20th century, the discipline of health promotion contributed greatly to reduce mortality from infectious disease in industrialized countries and developing nations alike. The notion that behavior change, and improvement of living conditions have surpassed biomedical technology in causing an increase in life expectancy, makes health promotion efforts a primordial tool in any cultural setting. The main challenge for health intervention deliverers is to use a theoretical framework that is understood by members of the receptor cultural group (MacLachlan, 2006). The ability of health promoters to navigate successfully through such cross-cultural nuances will determine to a great extent the results of any health promotion intervention. MacLachlan (2006) suggests researchers and program administrators should check (and recheck)
for the appropriateness of content, format and mode of delivery of any preventive effort. During
the pilot study, close attention should be paid to the health message narrative and discourse, how
the decision-making process works (individual vs collective) in the local community, and the
recognition of existent social networks, leaders and natural helpers.

Preliminary needs assessment and subsequent planning by culturally competent program
planners and administrators require following cultural sensitivity principles and using well-
known planning frameworks such as PRECEDE-PROCEED, MATCH, intervention mapping,
SMART, and CDC-Cynergy, among others. The proper use of any one of these frameworks
should provide an insight of the target populations’ cultural characteristics for meeting their
cultural needs (Pérez & Luquis, 2008). Delivering the program Su Corazón, Su Vida has given
the researcher a fresh perspective on how the cultural constructs of both promoters and
participants might influence the program’s implementation process and effects.

Community Health Workers and Successful Health Promotion

Lehmann and Sanders (2007) identify several determinants of successful performance of
lay health workers or promoters. Firstly, community participation is a powerful determinant of
sustainability through an iterative process that ensures the community members’ involvement
from program planning to implementation and, subsequently, to evaluation. Both public health
professionals and community members share a critical role in the program planning and
evaluation cycle, starting with the initial needs (and assets) assessment, following with the
process evaluation, and finishing up with the intervention effects (outputs and outcomes)
evaluation; this is an iterative process (Issel, 2014). There are multiple approaches to conduct
program and project evaluation, including those with strong stakeholder involvement. The model
for collaborative evaluations (MCE) is one of several models fostering stakeholder participation since the early stages of the process (Rodríguez-Campos & Rincones-Gómez, 2012). Secondly, political stewardship and adequate resourcing should translate into advocacy from political leaders and health officials; good program management must also be included among the critical resources. A crucial step is the selection of appropriate CHWs from within their own community and under the community supervision; this process is usually done through village health committees or community health boards. It is important to highlight that selected CHWs must reflect awareness of the targeted health issue (Lehmann & Sanders, 2007).

Another vital success factor in health promotion relates to training and continuing education. Health promoters should be continuously trained close to their working context, and refresher sessions should be given as much importance as the initial induction; also, training should be both competence-based and practice-based. Lastly, appropriate supervision and infrastructure support will further program effectiveness, and will depend on the specific organization’s protocols. Whether the CHWs are paid or not, their supervisors must act as role models, and the flow of information should be bidirectional (Carter-Pokras et al., 2011; Lehmann & Sanders, 2007). Of the aforementioned factors determining success of CHWs performance, community embeddedness is the most important yet often neglected determinant. In actuality, some authors point out a tendency to move away from community-focused primary healthcare to biomedically-focused selective healthcare (Campbell & Scott, 2011).

In an integrative literature review to determine whether CHWs were effective in community health promotion and disease prevention efforts, 79% of qualified studies demonstrated some positive outcomes mainly related to better case management and increased access to care. It was also reported improvement in knowledge acquisition, behavioral change,
and health status outcomes in a small number of studies, but several limitations were cited such
as high attrition rates, lack of standardized measures in some cases, reliance on self-reported data
and, in general, poorly defined interventions which might compromise their replicability
(Swider, 2002). A reasonable path to address these drawbacks before new studies are conducted
might include setting realistic expectations, defining carefully the population to be served, and
advancing a research agenda that stresses stronger study design and documentation of CHW
activities. A 5-tier health impact pyramid has been proposed to better target the specific points
where health interventions would have a higher chance of being successful. These efforts should
usually be concentrated at the base of the pyramid, where socioeconomic determinants of health
are located (Frieden, 2010).

Community Health Workers and Capacity Building

Health promoters’ efforts usually pursue behavior change while building community
capacity and empowering families and themselves with the ultimate aim of improving health
outcomes. Behavioral change, in turn, requires prior acquisition of knowledge and increased
awareness about a health issue (Swider, 2002). Sranacharoenpong and Hanning (2012) reported
the results of a four-month training received by CHWs in rural Thailand about diabetes
prevention and control with an emphasis in nutrition. After sixteen educational sessions
conducted over 4 months, the health promoters randomly assigned to the intervention group (n= 35)
scored significantly better in terms of understanding of nutritional recommendations and
knowledge of food sources related to diabetes. There were significant differences between the
intervention group’s own baseline and post-training knowledge scores, as well as when
compared to the control group (n= 34) scores. After a follow up measurement at 8 months, the
intervention group still obtained significantly higher scores related to diabetes prevention’s
understanding and knowledge. While this study included key health messages for the population about diet, physical activity and risk factors for type 2 diabetes, its authors deemed the duration of the training to be short to effect behavior change of at-risk population (Sranacharoenpong & Hanning, 2012). Behavior change is closely linked to the individual’s state of readiness; thus, sometimes is possible to achieve increased knowledge and awareness, but not change of behavior, because program recipients were not ready to embrace that change. A study by Gupta, Mutukkanu, Nadimuthu, Thiyagaran, and Sullivan-Marx (2012) about CHWs delivering a diarrheal disease prevention intervention in southern India reached conclusions in that direction.

It is important to point out that community capacity-building helps health promotion programs to be sustainable beyond their funded life span. Capacity-building is generally considered a bottom-up process that is sometimes carried up intuitively by CHWs and community members alike. The point here is to focus on community assets rather than on community needs, and to boost such assets so they may be helpful to other health programs as well. In a qualitative study involving 64 health promoters in New Zealand, capacity-building (expressed under several terms included in the Ottawa Charter for Health Promotion, like community action, community development and community partnership) was deemed “a natural consequence” of working with, rather than for the community (Lovell, Kearns, & Rosenberg, 2011).

The Ottawa First International Conference on Health Promotion established three capacity-building basic strategies, namely enabling, mediating and advocacy, which should be common to any health promotion initiative. The Conference also issued five cues for action including build healthy public policy, create supportive environments, strengthen community action, develop personal skills, and reorient health services to a health promotion perspective.
(WHO, 1986). CHWs are often members of the communities they serve and act as natural liaisons with service providers and government officials. CHWs may seamlessly undertake these basic strategies and cues for action as part of their duties and competencies related to capacity-building.

**Demographics of the Community Health Workers**

Internationally, CHWs are a very diverse group devoted to multiple tasks and with variable demographics. They can be male or female (although women predominate), young or old, with varying socioeconomic status (SES) and levels of literacy. A review by Lehmann and Sanders (2007) of 17 programs where CHW’s gender was reported showed that they usually were of “mature age” (20 - 45 years), and 70 percent were female. The authors also reported that “in virtually all cases in the literature, CHWs come from the communities they serve and they have little or no secondary and no tertiary education.” Irrespective of such a demographic diversity, there is wide agreement that cultural sensitivity of CHWs to the local norms and customs is the most relevant prerequisite to ensure community acceptance and ownership (Lehmann & Sanders, 2007).

In the U.S., the National Workforce Study (NWS) of CHWs, conducted by the Health Resources and Services Administration (HRSA)’s Bureau of Health Professions, provided the first comprehensive, systematic attempt to establish the number of CHWs. By 2018, there was an estimate 123,800 CHWs working in the United States. Projected growth rate for the CHW occupation is about 11% for the period 2018-2028, more than twice the average growth rate for all occupations (DOL-BLS, 2020).
Ideally, demographic distribution of CHWs in the U.S. should reflect the racial and ethnic composition of the communities they are serving. Nonetheless, there is a disparity or misalignment in this regard, as explained next. According to the NWS, 82 percent of CHWs are females between the ages of 30 and 50 years, with a predominance of non-Hispanic Whites and Hispanics (39% and 35%, respectively); African-Americans only amount to 15.5 percent of CHW workforce, which contrasts with up to 68 percent of Black/African-Americans being program recipients. By comparison, 78 percent of Hispanics and 64 percent of non-Hispanic Whites received health programs delivered by CHWs (DHHS, 2007). It is not always feasible to match the CHWs and their target communities in terms of race/ethnicity. CHWs also work with special populations including uninsured, immigrants, the homeless, isolated rural residents and migrant workers (DHHS, 2007).

**Toward a Unitary Definition of Community Health Worker**

CHWs constitute a heterogeneous category of community-based individuals delivering health promotion, education interventions and other disease prevention and control actions. Their efforts have contributed to reduce the burden of chronic conditions such as diabetes and heart disease. They may be paid or unpaid and can have very different backgrounds including culture and education attainment. Furthermore, they have been named in many different ways depending on the socio-cultural context and their specific duties. A UNICEF/WHO report about management of sick children by community health workers gathered over 20 local names for CHWs around the world, including village health worker (VHW), colaborador voluntario (Latin America), agente comunitario de saude (Brazil), monitoras (Honduras) and many others (Gilroy & Winch, 2006). Responding to such heterogeneity, several initiatives to properly define and
normalize the profession have been advanced. One of the first attempts to standardize the CHW definition came from the WHO (1989), who stated:

They should be members of the communities where they work, should be selected by the communities, should be answerable to the communities for their activities, should be supported by the health system but not necessarily a part of its organization, and have shorter training than professional workers (p. 6).

The Public Health Association (APHA, 2009) also proposed a uniform definition of CHW:

A frontline public health worker who is a trusted member of and/or has an unusually close understanding of the community served. This trusting relationship enables the community health worker to work as a liaison/link/intermediary between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery.

The latter definition also includes capacity-building and awareness components through a wide array of activities including outreach, community education, informal counseling, social support, and advocacy.

As a means of standardizing the CHW profession, the APHA asked the Department of Labor’s Bureau of Labor Statistics (DOL-BLS) to adopt their proposed definition and have CHW included as an occupation in the Standard Occupational Classification (SOC) Manual. The request was approved and published under code SOC 21-1094 (Balcazar et al., 2011; DOL-BLS, 2018). Keeping up with the APHA definition, the SOC code job description states that CHWs “assist individuals and communities to adopt healthy behaviors, conduct outreach for…health
organizations to implement programs…that promote, maintain, and improve individual and community health.” They also “may deliver health-related preventive services such as blood pressure, glaucoma, and hearing screenings, and may collect data to help identify community health needs” (DOL-BLS, 2018). As examples of CHWs, the manual lists lay health advocate, peer health promoter and promoter (a). Such a landmark decision paved the way for CHWs to be able to lobby for appropriate remuneration for their services at private and public social and health services organizations.

The U.S. Department of Health and Human Services’ Office of Minority Health (DHHS-OMH) also endorsed the APHA-proposed definition, making it equivalent to promoter(a) de salud (Spanish for health promoter) but adding that these personnel can be either volunteer or paid (DHHS, 2016). This endorsement milestone (especially by using the Spanish language term) highlighted the role CHWs play reaching out to vulnerable, low-income, and underserved members of Latino communities. The short form promotor(a) alludes to a female CHW, and it is widely used along the U.S.-Mexico border (Lucio et al., 2012).

Other initiatives aimed to normalize the CHWs’ professional profile have advocated bringing the goals of Alma-Ata regarding to community participation back to the global development agenda (Chowdhury & Rowson, 2000), and have also emphasized the importance of supporting the “rights, resources and opportunities” for communities and civil society to undertake health promotion (WHO, 2006). The Bangkok Charter for Health Promotion proposed four key commitments to be taken by states and international bodies, namely, putting health promotion in the center of the global agenda, as well as making it a core responsibility for every government, a requirement for good corporate practice, and a key focus of communities and civil society (WHO, 2006). All in all, regardless of the CHW definition to be used, it should
emphasize that “they are individuals with an in-depth understanding of the community culture and language, have received standardized job-related training which is of shorter duration than health professionals, and their primary goal is to provide culturally appropriate health services to the community (Olaniran et al., 2017). Despite all the efforts taken to standardize the CHW profession, they often remain isolated, working from the margins of the healthcare system due to social and organizational challenges driven by economic inequality and discrimination. As stated in a commentary by Torres et al. (2017) about the current status of CHWs in the U.S. and Canada, “they seek to serve their communities but face structural barriers owing to their work in contexts of economic deprivation.”

**Su Corazón, Su Vida: An Evidence-Based Program**

The heart health promotion program *Su Corazón, Su Vida (Your Heart, Your Life)*, seeks to tackle known heart disease risk factors among vulnerable populations using the *promotor* model. *Su Corazón, Su Vida (SCSV)* is a license-free program from the federal government developed in 1999 and reviewed in 2008. This heart health course was “created especially for Latino communities” by the National Heart, Lung, and Blood Institute (NHLBI) at the National Institutes of Health (NIH), U.S. Department of Health and Human Services. The manual is taught by CHWs (*promotores*) and focuses on “helping people build the necessary skills to make practical, lasting changes to help fight heart disease and to improve their health” (NHLBI, 2008a, 2008b, 2008c). The manual uses bilingual (English, Spanish) flipcharts and is organized in eleven sessions addressing concepts of basic heart structure and function, heart disease and cardiovascular risk factors.
The program is also available in electronic format (PDF file) and includes fifty-six picture cards (plus fifty-six corresponding script card sheets), as well as the trainers’ manual. Pictorial scenes are very appealing and colorful, and the script presents typical family situations through five Latino characters belonging to the fictitious Ramirez family. Its main aim is educating participants about addressing unhealthy eating habits, lack of physical activity, and smoking, among other risk behaviors. During each session, participants are encouraged to commit to personal healthy goals to be achieved by the next meeting.

The first session of the course (“are you at risk for heart disease?”) explores the aforementioned cardiovascular risk factors in the context of the participant families, followed the next class by training on the proper identification of, and action upon, a heart attack’s early signs. During this session, a 15-minute educational video on heart attack signs is presented. The third, fourth and fifth sessions deal with specific risk factors like sedentary life, high blood pressure, and high cholesterol, respectively, and how to keep them under control.

Session six (“keep your heart in mind”) aims to reaching and keeping a healthy weight, while session seven addresses the control of the diabetes as an independent cardiovascular risk factor. Sessions eight and nine discuss strategies on how to eat in a heart healthy way, especially in the face of economic constraints. Session ten educates about living tobacco smoke free, and session eleven is reserved for a general review and graduation of the participants. A twelfth session, for the promotores only, is intended to assess the program, both process and outcome evaluation.

Su Corazón, Su Vida is generally delivered to small groups (5-10 individuals) without age limitation in several community locations like churches, community centers, and participants’
homes. In addition to the theoretical content, the course includes the *Act in Time to Heart Attack Signs* video which presents people talking about their experiences with heart disease, as well as some practical activities like workout sessions accompanied with music. The program also teaches suggestions on how to prepare nutritious meals and make food substitutions, as participants usually cook heart healthy dishes for the graduation session. In addition to the program manual and flipcharts, a cookbook entitled Delicious Heart Healthy Latino Recipes is delivered.

For this research study, the program was facilitated in five 2-hour sessions according to the following schedule:

**Table 2.1: Su Corazón, Su Vida Original and Modified Session Schedule**

<table>
<thead>
<tr>
<th>Original Session</th>
<th>Topics</th>
<th>Modified Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Are You at Risk for Heart Disease?</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Act in Time to Heart Attack Signs Video: Act in Time to Heart Attack Signs</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Take Heart: Say Yes to Physical Activity</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Help Your Heart: Control Your High Blood Pressure</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Be Heart Smart: Keep Your Cholesterol in Check</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>Keep Your Heart in Mind: Aim for a Healthy Weight</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Protect Your Heart: Take Good Care of Your Diabetes for Life</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>Make Heart Healthy Eating a Family Affair</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Eat in a Heart Healthy Way—Even When Time or Money Is Tight</td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td>Enjoy Living Smoke Free</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Review and Graduation</td>
<td></td>
</tr>
</tbody>
</table>

The above 5-session schedule was proposed to reduce attrition, more likely to occur if the original, longer schedule were to be used. To this end, the course topics were distributed according to their length and content, and then they were rearranged to fit in two-hour meetings,
allowing 10 minutes at the end of each session for questions and answers. Furthermore, modified versions of *Su Corazón, Su Vida* have been delivered successfully to Latino populations elsewhere (PAHO, 2014; Staten, Scheu, Bronson, Peña, & Elenes, 2005). The theoretical content was facilitated using the printed-out manual and flipcharts as well as a laptop and video beam projector. Practical activities in each session were supported by printed handouts for the participants. At the end of the fifth modified session, participants received a compact disc containing the course manual, picture cards, instructional video, and cookbook.

Since the initial launching of the *Salud Para Su Corazón* initiative in 1994, there have been multiple experiences delivering it to Latinos in the United States, especially in border populations. Thanks to an agency-community partnership between NHLBI and several grassroots organizations in the D.C. area (Community Alliance Working for Heart Health), a wide needs assessment effort was initiated to gather feedback on Latinos perceptions about the impact of CVDs on their lives (Alcalay et al., 1999). From there, several theoretical constructs informed by the social-ecological model and behavior change theories, as well as social marketing principles, were incorporated to the initiative. Behavior change theory included elements of planned behavior, self-efficacy and health belief model among others, resulting in a few deliverables such as *telenovela* short videos, posters, *fotonovela* booklets, cookbooks, *charla* presentation materials, flipcharts and *promotor* manual. All the materials were tested for cultural adequacy using qualitative and quantitative instruments. Using pre-posttest surveys, respondents were significantly more aware of CVDs risk factors and how to prevent heart disease after the intervention was delivered as compared to baseline. The educational materials, especially the *telenovela* PSAs, were successfully disseminated through diverse community channels including the nationwide Spanish TV broadcaster Univision. Both formative and summative evaluation
were conducted. *Su Corazón, Su Vida* program emerged from NHLBI’s *Salud Para Su Corazón* Project (Alcalay et al., 1999).

Process and outcome evaluation of the *promotor* model using SCSV tenets was conducted by the *Salud Para Su Corazón* – National Council of *La Raza* (SPSC–NCLR) partnership in seven CBOs at five states including California, Illinois, New Mexico, Rhode Island and Texas. The 6-month educational intervention facilitated by 33 recently trained *promotores* to 223 Latino families (320 family members total) reportedly generated positive changes in heart-healthy behaviors (18 percent self-reported improvement), as well as improved heart-health awareness and created a cultural environment for learning heart-health information. Referrals to health care providers for blood pressure, diabetes and blood cholesterol screening, and surveillance of body weight and waist circumference were more frequently done as well (Balcazar et al., 2005).

In this study, SCSV was delivered through seven 2-hour sessions, and gathered data from *promotores*, program recipient families and CBOs staff. One year after implementation and follow up in three of the community centers located in California, Illinois and New Mexico, investigators demonstrated that the train-the-trainer *promotor(a)* model worked by eliciting significant, positive changes in *promotores’* pre-post knowledge and performance skills. The closed-format heart knowledge test scores rose from 74% for the pretest to 100% for the posttest (n =11). However, only one center reported test scores. Health lay leaders reported enhanced ability to recruit and teach families, provide follow up and participate in community events. Overall, they felt more confident to better communicate with class participants, organize and present health information, and encourage participants to express their opinions. Participant families also reported adequate 6-month follow up through phone calls and home visits with the
aim of reinforcing concepts taught in class. Feedback comments obtained from the CBOs were generally positive too (Balcazar et al., 2006).

Another successful application of the SCSV course in Latinos was *Pasos Adelante* (Spanish for *Steps Forward*), a curriculum aimed at preventing cardiovascular disease and other chronic diseases in Hispanic populations, but with a stronger emphasis on diabetes prevention and control. Other than that, this program is identical to SCSV with its 11 teaching classes and the 12th session for review and graduation. The study also included community advocacy and walking clubs led by the trainers. After delivering the curriculum to 248 participants (there was no comparison group), the authors found out positive changes related to increased awareness of participants on healthy lifestyle behaviors including walking habits, long after the course ended. They also reported on replication of the program with *promotores* in Mexico, as well as possible adaptation of the curriculum for reaching out Native American populations (Staten et al., 2005).

Similar results in terms of healthy behaviors were reported in a NHLBI-HRSA (Health Resources and Services Administration) partnership study delivering SCSV randomly to high risk Hispanic communities in the southern border region. This research did not include a control group, but the pretest-posttest scores were compared within the same intervention group. Health behavior changes were measured by using the My Family Habits Scale, a 35-item, self-reported instrument. Clinical outcomes such as weight, BMI, low-density lipoprotein (LDL) cholesterol level, high-density lipoprotein (HDL) cholesterol level, triglyceride level, glycated hemoglobin (HbA1c), and systolic and diastolic blood pressure were also collected. The intervention was delivered in 8 sessions. Most clinical outcomes showed significant improvement 6 months after the *Salud Para Su Corazón*-HRSA initiative was completed. There were also improvements in self-reported behaviors related to consumption of healthy amounts of salt and sodium,
cholesterol, and fat, as well as being more engaged in behaviors related to healthy eating pursuing adequate weight. (Balcazar, Alvarado, Cantu, Pedregon, & Fulwood, 2009).

A research reporting improvement in self-reported healthy behaviors was conducted by Medina, Balcazar, Hollen, Nkhoma, and Mas (2007) in the *Salud Para Su Corazón* of North Texas (SPSCNT) project. Investigators delivered the SCSV bilingual curriculum to 113 participants not randomly self-assigned to one of two groups: classroom-based intervention (six 2-hour sessions) and home-based group (education materials mailed/delivered plus phone calls to encourage reading them). A 35-item Likert-type scale questionnaire was used in both groups to evaluate heart healthy behaviors. Results showed significant differences between posttest and pretest scores in the general group (but not between classroom-based and home-based groups) regarding several heart disease prevention behaviors including salt, sodium, fat and cholesterol consumption, as well as increased physical activity and weight control practices. In this sense, the positive role played by *promotores* in effecting behavior change is undeniable, although it remains to be seen if those changes will translate to better heart disease outcomes in the long term.

Another study using the *promotor* train-the-trainer model targeting hypertensive Mexican-Americans was conducted by Balcazar, Byrd, et al. (2009). About 100 participants were randomly assigned to either intervention (9-week SCSV *promotor* curriculum) or control group, measuring pretest-posttest health behavior indicators and perceived benefits. Clinical data (waist circumference and blood pressure) were also assessed. Classes were delivered in four 2-hour sessions for groups of 15-20 participants during weeks 1, 2, 3, and 8 (plus follow up phone calls on weeks 4-7, and evaluation session on week 9). Behavioral measures include self-efficacy and readiness for behavior change. After nine-week intervention, there were statistically
significant differences in perceived benefits and two heart-healthy behaviors (salt and sodium, and cholesterol and fat) between the intervention and control groups. No changes in clinical outcomes were observed.

The Project HEART (Health Education Awareness Research Team), on the other hand, used a CBPR approach to support the promotor model with the intent of decreasing the prevalence of CVDs risk factors in communities of El Paso, Texas. Project HEART pursued positive behavior change by increasing awareness on clinical risk factors like high cholesterol and high blood pressure among Hispanics. Promotores training was completed in 16-18 hours and, after that, 328 participants were recruited and randomly assigned to receive either the SCSV curriculum (n=192) from the promotores for eight 2-hour classes or basic educational materials (control group, n=136). After two months of intervention and a two-month follow up, the intervention group showed significant improvement in self-reported behaviors related to weight control practices, salt and fat consumption, as well as greater perceived susceptibility to CVDs risk factors and perceived benefits of healthy behaviors, as compared to the control group (Balcazar et al., 2010).

The program has also been combined with other incentives to promote physical activity and behavior change. A purposive sample of 211 Latino participants were asked to wear belt pedometers to measure their daily activity over three weeks while receiving the SCSV education curriculum. The authors reported a significant increase in the average number of steps walked daily between week 1 and week 3, as well as some positive gains in terms of perceived awareness and motivation to get engaged in physical activity (Trudnak, Lloyd, Westhoff, & Corvin, 2011). Further analysis would be needed on the individual contributions of health education and use of pedometers in these participants, or whether a probable potentiating
mechanism is present. A randomized controlled trial monitoring physical activity was a pedometer-based telephone intervention in 222 cardiac patients who did not attend a cardiac rehabilitation program (Furber, Butler, Phongsavan, Mark, & Bauman, 2010). Patients in the intervention group (n= 109) demonstrated significant increase in physical activity levels at six weeks and six months after the program was delivered, as compared to controls (n= 113).

Another study by De Heer, Balcazar, Castro, and Schulz (2012) using a structural equation modeling (SEM) methodology explored the link between the theoretical constructs used in developing SCSV (such as the health belief model), several contextual and social determinants (e.g. birthplace, gender, family cohesion), and SCSV intervention participation. They found a direct, causal relationship between intervention participation (e.g. number of health classes attended) and improved health habits; in other words, it provided further evidence that the promotores SCSV really works. However, it fell short of finding evidence for reduction of CVDs risk indicators and the long-term impact of promotores interventions on clinical outcomes.

Other studies have gone beyond a mere change of beliefs or health behavior demonstrating a positive effect on clinical indicators. A randomized controlled trial design (Koniak-Griffin et al., 2015) was used to deliver a Lifestyle Behavior Intervention (LBI) to 111 immigrant, obese, Latina women for eight weeks (one class a week) with measurements of heart knowledge, heart health behaviors and clinical outcomes at baseline, 6 months and 9 months. The control group (n=112) received a home safety/disaster preparedness workshop with comparable measures and follow up. Elements of acculturation were also considered. Women in the LBI group showed significant improvements in dietary habits, physical activity and waist circumference. Most importantly, a treatment dosage effect was found, resulting in women who received high-intensity LBI exhibiting greater reductions in body weight and waist
circumference. There were also significant gains in heart knowledge scores as measured by an 8-item pretest-posttest instrument. In addition to the improvement of health behaviors and heart disease risk factors, this study showed that *promotores* health educational interventions in high-risk community members is both feasible and acceptable, as indicated by high session attendance, participation and retention rates (Koniak-Griffin et al., 2015).

SCSV has been tailored to meet community needs. A collaboration between the Pan-American Health Organization (PAHO)’s U.S.–Mexico Border Field Office, academic institutions, and several Mexican state and local governments resulted in an adaptation made to SCSV curriculum to better respond to a needs assessment conducted among the border populations. The resulting *Camino a la Salud* (Path to Health) *promotor* manual includes the original topics of SCSV plus two extra sessions on sleep disorders/healthy sleep promotion and mental health/control of emotions; this modified version is being widely used by *promotores* in northern Mexico (PAHO, 2014). Furthermore, there are experiences, albeit limited, delivering the SCSV curriculum in several locations in Mexico through partnerships between American and Mexican academic institutions as well as local health authorities and community organizations (Balcazar, Fernandez-Gaxiola, Perez-Lizaur, Peyron, & Ayala, 2015; Balcazar, Perez-Lizaur, Escalante Izeta, & Villanueva, 2016). For instance, the US-Mexico Border Center of Excellence PS-CHW program to counter chronic disease, and the *Universidad Iberoamericana*, Department of Health and University of Texas School of Public Health *Promotor de Salud* Project have obtained some positive results in terms of behavior change and clinical biomarkers. Nonetheless, there is a poor definition of *promotores/CHWs*’ roles as well as scarce institutional support, training and funding.
Theoretical Background

**PRECEDE-PROCEED Model**

This research was grounded in the principles of PRECEDE/PROCEED, the logic model initially developed by Lawrence Green in the 1970s, and whose main purpose is to provide structure to the causal theory behind the application of a health program (Glanz, Rimer, & Viswanath, 2008). In this regard, the framework has been described as a roadmap providing avenues for different behavior change theories; thus, the model itself does not predict or explain causality but it gives a structure to the theory that does. The PRECEDE component, which stands for Predisposing, Reinforcing and Enabling Constructs in Educational/Environmental Diagnosis and Evaluation, looks at all the factors involved in planning an intervention aimed to address a public health issue or need. In this vein, an analogy is made between doctors making a medical diagnosis before designing a treatment plan, and public health professionals making educational diagnoses before developing intervention plans (Green & Kreuter, 2005).

Added in 1991, the PROCEED (Policy, Regulatory, and Organizational Constructs in Educational and Environmental Development) component pursued a greater emphasis on the environmental factors as determinants of health and health behaviors. It also sought to provide program planners with skills in aligning proposed interventions with the existing regulatory and organizational environments, thus increasing the likelihood of program success (Glanz et al., 2008). The PROCEED component also comprises steps for program evaluation including process, impact and outcome evaluation. Another revision of the framework incorporated essential elements of the participatory approach and socioecological model, as well as it recognized the role genetics plays in determining health behavior and overall health status.
(Green & Kreuter, 2005). For the purposes of this research, I used the PRECEDE component as well as the implementation and process evaluation phases of PROCEED.

Figure 2.1: PRECEDE-PROCEED Model (Glazn et al., 2008)

The PRECEDE-PROCEED Model (PPM) depicts quality of life and its relationship with individual health as they are influenced by several determinants resulting from the environment and individual behavior, as well as by a person’s genetic makeup (see Figure 2.1). Thus, the PPM framework works backwards beginning with the social assessment (Phase 1) of a given public health issue followed by epidemiological, behavioral and environmental assessments.
All the above determinants are, in turn, influenced by diverse factors included at different levels (individual, interpersonal, population, societal) of the socioecological model. Predisposing, Reinforcing and Enabling (PRE) factors are all accounted for during the educational and ecological assessments comprising Phase 3 (see Figure 2.1). The PPM can be applied to any public health issue, and the study of the unhealthy behaviors leading to it.

Predisposing factors refer to many attitudes, beliefs, knowledge, and values determining engagement in healthy or unhealthy behaviors. For instance, learned attitudes toward tobacco smoking, getting involved in physical activity, and the value a given culture places on food are major determinants of individual behavior and, subsequently, of heart disease. Reinforcing factors are those determinants that encourage people to keep practicing an already initiated specific behavior under the guise of social rewards; they also may work as negative reinforcement or deterrents (Banerjee et al., 2015). An example would be a person being economically rewarded by their employer or insurance company (i.e. getting lower premiums) for quitting smoking or going to the gym, thus decreasing their cardiovascular risk. Finally, the enabling factors look at the availability of institutional and local community resources, as well as the prevailing rules and regulations that empower people in achieving and maintaining a high quality of life (Green & Kreuter, 2005). A government-dictated smoke-free policy at the workplace and public spaces, and a statewide policy on the salt content of soda drinks would be enabling factors to prevent heart disease.

Among the ten great public health achievements in the United States during the 20th century (CDC, 1999), motor vehicle safety and tobacco control are two clear examples of how public health surveillance and clinical research may inform public policy development and
promote change in social norms, as described in the phases of the PRECEDE-PROCEED model. In both cases, it was a combination of multilevel intervention including individual and community education coupled with sound policy regulation and enforcement which resulted in commonsense preventive measures we now take for granted, such as seat belt use, child restraint systems, driver education, maximum blood alcohol concentration permitted, smoke-free policies, tobacco marketing regulations, and smoking cessation programs among many other public health efforts. This resulted in a 90 percent reduction in death rate per vehicle mile traveled (despite the number of miles traveled in the U.S. multiplied 10 times in the last century), as well as a 50 percent decrease in tobacco consumption rates, and reductions in cancer and heart disease (Gielen & Green, 2015).

Phase 1 of the PPM illustrated the fact that these public health issues were of societal concern since the 1950s and 1960s (e.g. the first Surgeon General’s Report on Smoking and Health of 1964), and then supported by appropriate epidemiological and environmental evidence of morbidity, mortality, burden of disease and quality of life (Phase 2). Despite of strong opposition of big tobacco and carmaker industries, the alignment of good science, political will and public pressure led to educational programming (phase 3) and lasting policy changes (phase 4) resulting in modifications of individual behavior as well as what is now socially acceptable and what is not.

The above factors must be carefully aligned with the educational strategies whenever any public health intervention is going to be implemented. This means an administrative and policy assessment must be conducted as part of the alignment of the health promotion program with other existing programs in the field (Phase 4). In this sense, Su Corazón, Su Vida has been proven successful among Latino communities in the U.S., but there is limited experience
exploring *promotores* engagement with the program and perceived self-efficacy. Latinos as an ethnic conglomerate show wide cultural diversity that may help explain any differences in the way they perceive *Su Corazón, Su Vida* and act upon it. Despite Latinxs in the U.S. often “are characterized as a single ethnic group, great variety exists within the Hispanic population.” Such differences encompass diverse aspects like language and religion preferences, SES, and education background among others (Hernandez, Nesman, Isaacs, Callejas, & Mowery, 2006).

An adapted version of the PPM was used to evaluate the training and implementation process (Phase 5) of *Su Corazón, Su Vida* (see Figure 2.2). Process evaluation was conducted during and after implementation of the program by conducting observation sessions and individual, in-depth interviews (Phase 6).

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**Figure 2.2: PRECEDE-PROCEED Model applied to CVDs Prevention. Adapted from Glanz et al. (2008)**
A major determinant of health program success is the ability of facilitators to adequately convey the intervention’s main messages, which should be tailored in a culturally appropriate manner. There are several “weak links” in the PPM that can be addressed by CHWs. They can become agents of change in their communities, whether by modeling or teaching healthy behaviors, as well as by promoting their social acceptance, pertaining to the predisposing and reinforcing factor domains of the model (Phase 3). Promotores can also be instrumental in aligning Su Corazón, Su Vida’s requirements (Spanish-language, delivered at homes, low-literacy participants) with the specific needs of underserved Latino populations of Tampa Bay.

PPM has been applied as a theoretical framework in multiple studies involving heart disease and other chronic conditions. Garcia et al. (2019) enrolled 90 Latino adults and youth in a qualitative research study exploring factors affecting childhood obesity. They used the PRECEDE component of PPM and conducted focus groups by age range. They found generational differences between parents and children regarding unhealthy eating as a cause of overweight in different domains including eating habits, cultural perceptions of weight, acculturation, childhood obesity perceptions, and economic issues. Among the predisposing factors identified, participants perceived a normalization of overweight in Latino families, as well as described some structural determinants (enabling factors) such as produce and fresh food deserts, and wide availability and affordability of fast food. They also perceived reinforcing factors such as parents using food as a reward for kids’ performance in school (i.e. offering ice cream when the report card is almost due); a strong intergenerational component driving health behaviors was also identified, with children putting blame on their parents (who were working long hours to provide for them) for their poor eating choices. Understanding these diverging conceptions may help inform future health policy development.
Another qualitative study using the PRECEDE component of the PPM explored the motivations of patients experiencing diabetes, hypertension and hypercholesterolemia to get engaged in self-management behaviors. Using the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist, researchers found that driving factors were not only associated with patients, but also with their health providers, the healthcare system itself and the policies in place at that moment (Gorina, Limonero, & Álvarez, 2019). Ensuring a proper theoretical background for every planned intervention is the basis for the so-called evidence-based health promotion, understood as “the use of information derived from formal research and systematic investigation to identify causes and contributing factors to health needs and the most effective health promotion actions to address these in given contexts and populations” (Smith, Tang, & Nutbeam, 2006). Obviously, formal evidence in isolation is not enough to guarantee effective health promotion; it still needs the skills and sound judgment of public health professionals to select and apply that evidence.

A Canadian mixed-method research study explored the determinants of the PPM’s ecological and educational phase driving heart health promotion programs in Anglican, Catholic and United churches (Banerjee, Strachan, Boyle, Anand, & Oremus, 2015). Thirty-three pastors and parishioners from six churches underwent semi-structured interviews and focus groups. Beliefs and attitudes predisposing the implementation of health interventions in religious organizations included the presence of established groups (e.g. senior clubs), having a secure infrastructure for the activities, and the alignment of spiritual values with physical health (the body seen as “a temple of the Holy Spirit”). Being able to secure funding to offer free/affordable services was also perceived as a strong driver of success. A recurrent theme was the relevance of role modeling by clergy in all planned activities.
A study exploring the effect of PPM on preventive behaviors in 164 subjects at risk of developing type 2 diabetes demonstrated that the PPM-based educational program significantly improved knowledge and attitudes in the intervention group as compared to controls. Average scores of predisposing factors ($p = .001$), reinforcing factors ($p = .001$), and enabling factors ($p = .02$) were significantly different at baseline and after the program was delivered in the intervention group, who also showed significant improvement in nutritional habits ($p = .001$) (Moshki, Dehnoalian, & Alami, 2017). PPM has also been used as a framework combined with self-management theories to measure changes in health behavior, attitudes and efficacy of patients with established diagnosis of diabetes mellitus. A semi-experimental study randomly assigned 86 type 2 diabetes patients to either theory-based and PPM education intervention or intervention using PPM only. Subjects in the first group experienced higher mean scores of attitude, self-efficacy, self-care, and reinforcing factors one month after the intervention was delivered. Furthermore, there were significant differences in knowledge, attitude, self-efficacy ($p = 0.001$), self-care ($p = 0.001$), and enabling factors in both groups before and after the intervention ($p < 0.05$)(Azar et al., 2018). In other words, the positive effects were evident if the health program was grounded on the PRECEDE-PROCEED model but were potentiated after combining it with an appropriate self-management theoretical foundation.

The PPM framework has been applied in less conventional settings with mixed results. An online peer-to-peer suicide prevention and awareness for depression intervention in African-American college students achieved some significant improvements in attitudes related to depression as a disease and attitudes about managing depression; nonetheless, it failed to show statistically significant benefit in knowledge change, i.e. the peer-to-peer training was not completely effective in transferring corresponding changes for students trained by peers (Shanta
Bridges et al., 2018). Other interventions using PPM as a roadmap for program planning, implementation and assessment include improvements on healthy lifestyle awareness and attitudes in adolescents with beta thalassemia (Bazpour, Gheibizadeh, Malehi, & Keikhaei, 2019), and the design of cost-effective educational campaigns to promote exclusive breastfeeding, and to prevent and control diarrhea in under 5 year olds (Popoola & McHunu, 2015).

**Social Cognitive Theory**

The Social Cognitive Theory (SCT), as related to the PPM framework, was the foundational principle used to explain the perceptions of participants in this study related to attitudes, skills and behavior change. As a *self-management* theory, SCT framework is central to many health program interventions designed to empower patients in taking care of their own health, especially those with chronic conditions such as cardiovascular disease and diabetes among others. Formerly known as social learning theory, SCT incorporated during its evolution tenets from diverse disciplines including sociology, political science, and cognitive and humanistic psychology, with the intent of explaining how individuals interact with the physical and human environment resulting in behavior change. While it posits that human beings are shaped by their environment, it also recognizes that people can create and alter the environment pursuing social benefit and improving health outcomes; this principle is known as *reciprocal determinism* (Glanz et al., 2008). SCT encompasses several psychological determinants at the individual level such as *outcome expectations*, which motivates individuals to engage in any behavior in function of the potential results of such behavior; in this regard, people assign perceived values to the expected outcomes. This construct can be further expanded to include the prevailing social norms about a health behavior (it is then called *social outcome expectations*), or
as a function of how the individual anticipate will feel about himself by performing the behavior (in this case it is termed *self-evaluative outcome expectations*) (Bandura, 1977). *Self-evaluation* is informed by self-incentives and external rewards which, in turn, are related to the reinforcing factors of PPM. There is also a clear link between the health outcomes a person expects to achieve (whether individually or collectively) as a result of behavior change, and the level of *engagement* with the program intervention he or she is being exposed to. In other words, the higher the *expectations* of a positive outcome, the higher the *engagement* with the program. I looked closely at this relationship in the qualitative part of the study.

Another core tenet of SCT is perceived *self-efficacy*, defined as “beliefs that individuals hold about their capability to carry out action in a way that will influence the events that affect their lives” (Smith et al., 2006). Bandura (1994) adds that “…beliefs determine how people feel, think, motivate themselves and behave. This is demonstrated in how much effort people will expend and how long they will persist in the face of obstacles and aversive experiences.” Although *self-efficacy* is not exclusive of the cognitive theories, it can be perfectly integrated to the PRECEDE-PROCEED model because it addresses the ownership and capability that allow people to effect and control their life and health outcomes through behavior modification. In other words, individual efficacy to engage in behavioral change is informed by the predisposing factors driving that change such as a person’s beliefs and preconceptions. Moreover, both the positive and negative (deterrent) reinforcing factors of the PPM can determine whether a person is willing or not to remain engaged in a recently initiated behavior. *Self-efficacy* was initially proposed as a driver for individual behavior, but recently has been given weight as determinant of social change through political and organizational action (Glanz et al., 2008). Health promotion programs like *Su Corazón, Su Vida* may take advantage of SCT concepts such as
social outcome expectations and collective self-efficacy for the ultimate purpose of effect societal change.

Observational learning is a concept central to the cognitive theory because it determines how individuals get to know and adopt new behaviors through processes of attention, retention, production, and motivation. Human behavior as a cognitive process typically occurs through modeling. Transmission of knowledge, skills, and beliefs usually takes place under the form of peer modeling, that is, the continuous, non-verbal display of attitudes which are certainly more important than verbal cues. Lifestyle changes promoted by the health programs necessarily incorporate modeling components if they are to achieve sustainable behavior change. In addition to the individual determinants for behavior change, SCT incorporates environmental drivers such as incentive motivation and facilitation which are related with the reinforcing and enabling factors of the PPM (Glanz et al., 2008).

Firstly, incentive motivation works through a system of rewards/punishments for desired/undesired behaviors. Therefore, individuals are influenced beyond their perceived expectations or self-efficacy. Incentives (or deterrents) are also addressed in the phase 3 of the PPM. Secondly, the facilitation mechanism acts at the societal level by creating and making available resources and structures needed by individuals to engage in behavior change. Facilitation is notably similar to the enabling factors addressed in the educational and ecological assessment stage of the PRECEDE-PROCEED model. Health behavior change is also determined by the individual level of readiness (Should I do it now?), which in turn is influenced by both the perceived importance of the problem (Why should I? How will I benefit?), and the confidence to master the skills required to achieve that change (Can I? How will I do it?) (Mason & Butler, 2010). This triad of behavioral determinants are closely intertwined with Bandura’s
central concepts of *self-efficacy* and *outcome expectations* already described in the social cognitive theory (Bandura, 1977).

SCT has been extensively applied in the design of interventions for addressing medicine and public health challenges including heart disease. For instance, the “Women Take PRIDE Heart Disease Self-Management Program” is a group-based behavior change intervention grounded in the SCT that encourages older women to better manage their heart conditions (Gallant, Pettinger, Coyle, & Spokane, 2015). The program was delivered to 129 participants during 4 weeks, showing significant improvement in knowledge, social functioning, and perceived health, including frequency and severity of cardiac symptoms. Women participants used a variety of learning techniques based on the SCT including self-monitoring, problem-solving, and self-management tools such as exercise, diet and stress management. My study focused on aspects of *promotor* self-efficacy as related to behavior change, as well environmental factors at the community and societal level. Similar theoretical links were reported by Boukhechba et al. (2018) studying medication adherence behavior being informed by patient efficacy and social support. Other study (Flora et al., 2015) explored the role self-efficacy and outcome expectations play on cardiac rehabilitation patients’ adherence to exercise therapy. Perry et al (1994) and Tougas et al (2015) found a similar association.

Mobile and internet technologies (mHealth) have also been studied for their efficacy to deliver behavior change interventions. The Text4Heart randomized controlled trial assigned 123 heart patients to either cardiac rehab plus a personalized 24-week mHealth program framed in social cognitive theory and sent by short message service (SMS) text messages and a companion website; or cardiac rehab only. The intervention group exhibited significant changes in the primary outcome composite of adherence to healthy lifestyle behaviors (smoking cessation,
physical activity, healthy diet, and not harmful alcohol use) at 3 months. They also reported higher medication adherence score. However, benefits were not sustained at 6 months post intervention (Pfaeffli Dale et al., 2015). Notwithstanding being based on social cognitive theory including behavioral self-management and motivational constructs, technology-enhanced health programs can face challenges mainly related to the fast pace of changing phone technologies as well as the varied expectations of programs (apps) users, as stated by Lin et al. (2015) as studying the effectiveness of a weight management intervention delivered to young adults through cell phone.

At another technology-assisted study, researchers from the Wii Heart Fitness, a clinical randomized controlled trial, assigned 283 participants to any of three intervention arms: a 12-week program of supervised exercise videogames, standard exercise (e.g., treadmill), or control. The primary outcome was weekly minutes of moderate to vigorous physical activity at the end of treatment, measured at 3 and 6 months post-intervention. Participants in the first arm engaged in 30 more minutes per week of moderate to vigorous physical activity as compared to standard exercise and 85 more minutes per week than controls (all p<0.05). They also showed greater reductions in secondary outcomes like cholesterol, HbA1c, and body fat. In this case, motivation of participants to engage in enduring behavior change and boost their self-efficacy was explained by the concept of gamification, that is, “the process of adding enhancements (rewards, badges, points, levels, etc.) that provide motivational affordances to create a game-like experience that can promote psychological changes and enhance behavioral outcomes” (Bock et al., 2019).

The North Karelia Project in Finland (Puska, 2001) and the Minnesota Heart Health Program (Perry, Kelder, & Klepp, 1994) utilized peer modeling through mass media campaigns or community networks to change attitudes about smoking, weight control, heart-healthy eating
and physical activity, resulting in meaningful improvements in heart disease outcomes and life expectancy. The training process of Su Corazón, Su Vida promotores, was informed by SCT constructs such as self-efficacy, outcome expectations, self-management, reciprocal determinism, self-evaluation and peer modeling, as the trainees reflected on their own engagement and efficacy to facilitate the program, as related to potential health behavior change.

The strength of the outcome expectations tenet can have a predictive value for the success of a behavior change effort as well. Perceptions on illness from 49 cardiac rehabilitation patients were gathered using baseline measures of illness perceptions (weak vs strong), self-regulatory efficacy and outcome expectations (Flora, Anderson, & Brawley, 2015). Exercise minutes were recorded at baseline, after 2 weeks of participation, and following 3 months of cardiac rehabilitation. The “strong illness perception” group reported greater negative outcome expectations. This group also experienced significantly lower health-related quality of life as well as physical and mental wellbeing, as compared to their “weak illness perception” counterparts ($p < .01$). Commensurate differences in engagement on cardiac rehabilitation exercise at 3 months were also documented ($p < .05$). This research study used a combination of two theoretical frameworks, i.e. the common sense model and the social-cognitive theory, which could have a synergistic effect on assessing individual differences in illness perception as related to psychological beliefs and adherence to physical exercise. Researchers hypothesized that such complementary use may help understand the determinants of exercise adherence in cardiac rehabilitation patients.

Other chronic conditions have benefited from having SCT as a foundational framework as well. A systematic review of 18 SCT-based randomized controlled trials (12 of which underwent meta-analysis) comprising cancer survivors showed significant improvements in
physical activity, diet, and weight management outcomes (Stacey, James, Chapman, Courneya, & Lubans, 2015). However, a clear link was not established between SCT constructs and behavioral change effects. While SCT constructs might explain up to 71% of variance in physical activity behavior and up to 61% of variance on dietary behavior, more research is needed to operationalize and properly measure constructs such as self-efficacy. Self-efficacy allows the individual to gain knowledge and develop skills; that is, as self-efficacy increases, people expect positive outcomes, and is able to overcome barriers, and to show motivation and commitment to health goals.

Several SCT tenets including self-efficacy, attitudes, social norms, and facilitators and barriers to diet and exercise were explored by Vaughan, Ghosh-Dastidar, and Dubowitz (2018), who conducted interviews with almost 1,000 residents of low-income neighborhoods facing high risk for chronic disease. After recording participants’ moderate to vigorous physical activity with accelerometers and diet with 24-hour recalls, researchers were able to categorize subjects in four different profiles: (a) moderate diet and negative exercise attitudes, with participants about average on dietary attitudes but experiencing exercise-related challenges (low social support, outcome expectations, physical functioning and self-efficacy); (b) few barriers and benefits of healthy diet and exercise, with subjects reporting fewer barriers and low outcome expectations for diet and exercise; (c) moderate overall attitudes, where participants showed average scores on most indicators but below average exercise self-efficacy; and (d) positive overall attitudes, with more positive attitudes toward diet and physical activity, especially regarding self-efficacy to overcome exercise barriers. Researchers postulated that developing theory-based profiles can be helpful in developing preventative health interventions customized to individual or small group specific needs.
Type 2 diabetes is another chronic disease where the SCT framework has been extensively applied, as it is a multi-causal, multi-systemic health condition requiring an interdisciplinary approach. Diabetic patients often feel lost as they try to obtain resources and navigate through complex systems related to diabetes care. Thus, gaining self-management skills is crucial. Near 400 diabetes elderly patients completed a validated questionnaire based on SCT constructs. Researchers established a significant positive relationship between several SCT constructs (knowledge, self-efficacy, social support, outcome expectations and self-regulation) and the self-care scores of participants. However, most of them (67.37%) had poor self-care ability, which calls for the development of educational interventions for diabetic patients based on cognitive theory constructs (Borhaninejad et al., 2017). The relationship between self-efficacy and self-management behaviors in diabetes mellitus patients also has been reported by Yao et al. (2019). Other instances of successful application of SCT tenets in health intervention design, implementation and evaluation include pediatric populations with chronic conditions (Ng et al., 2018), asthma self-management (Lycett et al., 2018), HIV/AIDS antiretroviral therapy patients (Adefolalu, 2018), and medication adherence monitoring (Boukhechba et al., 2018).

Summary

The reviewed literature supports health promotion as a core public health strategy to fight cardiovascular disease among underserved populations. Health promoters (promotores de salud) play a central role in these efforts, by demonstrating effectiveness in diverse community-based programs delivering health and social services or pursuing behavior change. However, there is limited data showing positive effects of Su Corazón, Su Vida on clinical outcomes, as well as the factors driving self-efficacy and engagement with the intervention. There is also limited literature available about the implementation and evaluation of the program supported by the social
cognitive theory and the PRECEDE-PROCEED model frameworks. *Su Corazón, Su Vida*, the proposed educational program, may contribute to provide new insights in this direction. Findings from this research may provide a better understanding of the specific adaptations that should be made to *Su Corazón, Su Vida* or any other health program to be successful in Hispanic sub-populations. In this intervention, change in the main dependent variable (heart health knowledge) was assessed in its relationship with other variables (education level, gender, age, birthplace and language primarily spoken at home), with the intent of establishing the determinants of *promotores*’ effectiveness. The social cognitive theory was the theoretical guiding principle for this study intending to measure the effect of the intervention on acquired knowledge by *promotores*, while obtaining insights about the teaching-learning process from them.
CHAPTER THREE:

METHODOLOGY

Introduction

This study is centered on exploring heart health knowledge change as well as the lived experiences of Latino promotores trained to facilitate the program *Su Corazón, Su Vida* to other community participants. Its first, confirmatory phase measured knowledge before and after receiving the intervention to verify the adequacy and workability of the program with this specific sample. A validated pretest/posttest was utilized to this end. The second, exploratory phase sought determinants of promotores success during the facilitation process such as self-efficacy and engagement with *Su Corazón, Su Vida*, as well as perceived barriers and facilitators. Data were collected from individual, in-depth interviews, participant observation of classes, and verification mechanisms such as checklists. Social cognitive theory (SCT) was the guiding principle used to explain any perceived changes in beliefs, attitudes and behaviors. SCT constructs such as reciprocal determinism, outcome expectations, self-management and self-efficacy were explored and utilized to analyze data. The PRECEDE/PROCEED model served as a framework to help contextualize the theoretical concepts. As cardiovascular diseases rank high among Latino population’s health concerns, and *Su Corazón, Su Vida* is a proven educational intervention, this study’s aim was to provide a solid theory-backed foundation to ensure the training of effective promotores.
Research Site

East Tampa is an incorporated area of the City of Tampa, Florida dating back to 1911. Its current boundaries roughly comprise Hillsborough Avenue to the North, Interstate 4 to the South, 50th and 56th Streets in the East, and Interstate 275 in the West. Population was 16,355 people living in 5,565 households covering around 3.68 sq. miles in the zip codes 33605 and 33610. East Tampa major neighborhoods include Belmont Heights, College Hill, Jackson Heights, and Seminole Heights among others (Tampa, n.d.) Locally, there are multiple civic groups and grassroots organizations including community centers, nonprofit organizations, and older adult centers involved in health promotion activities.

Community partners for our research included the Senior Connection Center (SCC), and other community & recreation centers. SCC is the local area agency for aging serving the needs of older adults in five counties including Hillsborough, where Tampa is located. As one of the 11 Aging and Disability Resource Center (ADRC) qualified local agencies in the state of Florida, the SCC is usually the primary point of contact for older adults, their caretakers and family members seeking information on diverse community resources and services such as guidance about access and eligibility to enroll in health insurance (Medicare, Medicaid), locating providers, and in-home care information (DOEA, n.d.). In addition to be an information and referral center, SCC also delivers a wide range of evidence-based health workshops in different locales such as community and recreation centers (e.g. YMCA), older adult daycare and living facilities, and senior centers. Health and wellness programs include A Matter of Balance (centered on fall prevention), Chronic Disease Self-Management (CDSMP), Diabetes Self-Management (DSMP), Tai Chi for Arthritis for Fall Prevention, and Enhance Wellness, among others (SCC, n.d.). Being a well-known community stakeholder, the SCC collaborated with the
identification and recruitment of study participants through its department of health and wellness. Currently, this organization is not directly involved in health promotion efforts specifically targeting heart disease; thus, implementing Su Corazón, Su Vida did not result in a duplication of actions.

Trust is a key component in the relationship between health intervention providers and recipients; sometimes it is more important than the intervention itself and is usually fostered by having insiders to deliver it. This research study proposed the facilitation of Su Corazón, Su Vida program including promotion of nutrition and appropriate eating behaviors, decrease of stress levels, and increase of physical activity, by trained members of the community. This was accomplished through modeling and content delivery to grow capacity-building efforts and, in the long range, to reduce the incidence and prevalence of heart chronic conditions in this underserved population and their families.

**Research Team and Handling of Potential Bias**

In addition to the principal investigator, the research team included a research assistant, a certified health educator, and key stakeholders such as the Manager of the Health and Wellness Department at SCC, who was instrumental in making meeting sites available and helping with participant recruitment. Information about the research study was disseminated at community locations where SCC usually facilitates health workshops. Each study participant received course materials and refreshments for the sessions free of charge, as well a $100 participation compensation.

In 2010, the principal investigator was first exposed to Your Heart, Your Life (Su Corazón, Su Vida) through the Fundacion Familia Sana, a Tampa, Florida-based nonprofit
health education organization (no longer active) involved in empowering local communities. While in *Familia Sana*, he collaborated with the facilitation of the Spanish version of SCSV in different community locations, which allowed him to get familiarized with the program curriculum from a *promotor’s* perspective. Furthermore, over the last five years he has been certified to facilitate most of the SCC health and wellness interventions to English and Spanish audiences. As an example, he was involved with the Living Healthy in Your Community project, a 3-year, grant-funded collaborative effort that successfully targeted English- and Spanish-speaking residents of East Tampa and West Tampa. This project included nutrition classes, cooking demonstrations, home gardening (produce and flowers), and the 15-hour, 6-week CDSMP workshop (known in Spanish as *Tomando Control de Su Salud*). All of this exposure has given him a better understanding of local community dynamics. On the other hand, the principal investigator possesses an extensive medical background including critical care and internal medicine practice at his home country, which included treating patients with diverse manifestations of cardiovascular disease. Such a work experience has allowed him to be more cognizant of the crucial role public health, preventative interventions play at community level.

Bias is inevitable in epidemiological research. Bias is “any error resulting from methods used by the investigator to recruit individuals or collect data for the study”, and it can adopt any of two major types: *selection bias*, involving factors that affect study participation; or *information bias*, when there are systematic distortions as information about exposures (or interventions) and diseases (or outcomes) is being collected (Tripepi, Jager, Dekker, & Zoccali, 2010). As this research used an inductive, interpretive approach, some selection and information bias might have occurred, whether related to the study design or to the investigator background. Nonetheless, some measures were taken in an attempt to minimize or control systematic error
throughout the different phases of the study. First, to reduce potential selection bias, participant screening and recruitment were entirely done by SCC’s Health and Wellness Department staff who were not familiar with the other aspects of the research. Their sole task was identifying and determining eligibility of participants. Despite holding a job position at SCC at the time, the principal investigator was not involved at all in the recruitment of study participants. Second, to control for information bias, the knowledge pretest/posttest was proctored by the certified health educator who used to work as a promotor in Familia Sana Foundation. She also delivered the SCSV program to the participants, and verified the attendance and punctuality of participants.

Pretests/posttests were identified with the participant’s number only; this way, test scores were not linked to participants’ names when they proceeded to the exploratory phase of the study. The principal investigator conducted the individual interviews, completed the observation of facilitation sessions, and analyzed the collected data. Interview questionnaire and observation checklist were used during this portion of the study. Finally, both coding and checklist responses were independently reviewed by the research assistant for any inconsistencies.

**Sampling**

A snowball sampling method was used to select 20 community members living in East Tampa, who met the inclusion criteria and consecutively came into contact with the SCC and showed interest in participating. Some of the potential participants were recruited by SCC’s health and wellness staff as they attended events at area senior community centers or stayed in senior living facilities. Other participants were approached as they called or visited the SCC facilities to request information on available resources or to attend community outreach sessions (e.g. SHINE program informative sessions). Snowball sampling was used as existing study participants were able to recruit other individuals from among their acquaintances. Recruitment
continued for several weeks until a quota of 20 participants was reached. Inclusion criteria included interested individuals of Latino descent, any gender, age 18 years and older, who were bilingual (Spanish/English) or who spoke Spanish only. They also were required to read and write, and could have been born in the U.S. (second-generation Latinos) or in any Spanish-speaking Latin American country (first-generation Latinos). Totality of participants were scheduled to receive the SCSV *promotor* training from the certified health educator, in addition to taking the knowledge tests. Finally, they underwent individual interviews as long as they had completed SCSV facilitation to other community members.

For establishing the sample size in the preliminary confirmatory phase, I followed guidelines contained in *Your Heart, Your Life: A Lay Health Educator’s Manual* from the National Heart, Lung and Blood Institute (NHLBI, 2008c). They recommend a number of 20 participants for the purposes of *Su Corazón, Su Vida* training and program evaluation. For the exploratory qualitative phase, I used the concept of *theoretical saturation (or redundancy)* to ensure the sample size was adequate. Saturation refers to researchers exhausting the whole range of views on any given topic, thus no new information is emerging from the sessions (Krueger & Casey, 2015). While redundancy is usually reached with the third or fourth session, I planned in-depth interviews with all 20 participants coming from the confirmatory phase to exhaustively explore every possible insight they could provide. Individual interviews were considered advantageous as compared to focus group sessions, especially when addressing sensitive topics may result in personal, potentially disturbing reflections. Respondents may feel more comfortable talking in a one-to-one setting which may evoke deeper, intimate insights (Banta & Palomba, 2015). Findings from the interviews were then complemented by participant observation of the program facilitation, as well as the -test scores from the confirmatory phase.
Preliminary Data Collection: Understanding the Research Setting

Before the formal start of the fieldwork, the principal investigator conducted preliminary observations in the community. By doing informal observation at community venues including church events, health fairs and healthy living classes delivered to Latino audiences, the researcher gained a better understanding of these groups’ dynamics, internal hierarchies, modes of interaction and conflict resolution. Furthermore, this helped establish relationships with the host facilities’ staff, and acquire preliminary insight about the use of health-related language by potential participants.

The study was developed in two phases: Confirmatory, quantitative phase which included the training of promotores, who then facilitated the program, and took the heart health knowledge tests; and Exploratory, qualitative phase including the researcher conducting observation of the program facilitation followed by individual interviews with promotores at the end. The overall workflow of the research is seen on Figure 3.1:

**Figure 3.1: Overall Research Workflow**
A Pre-Selection Survey (PSS, see Appendix A) was applied to screen potential participants. Using a snowball sampling method, they were recruited from people meeting the inclusion criteria who came into contact with the Senior Connection Center for any available resources or information. The eligibility criteria were Spanish-speaking or bilingual Latinos aged 18 years and older, both sex, that can read and write, and have local residence. This survey collected preliminary demographic data on potential participants, allowing the screening of prospective candidates to undergo Su Corazón, Su Vida training. Eligible participants were recruited consecutively until 20 participants were enrolled.

**Confirmatory Phase: SCSV Promotores Training**

This phase addressed changes in participants’ heart health knowledge and the factors potentially behind those changes, as stated in objective 1 (“to compare changes in heart health knowledge of Latino participants before and after completing SCSV training”) and objective 3 (“to understand the role played by different factors in promotores’ knowledge acquisition and success”). Research question 1 (What factors relate to post-program heart health knowledge outcomes in Latino promotores and community members?) summarized the scope of the above objectives. Demographic determining factors included age, gender, education level, language spoken at home and place of birth. The confirmatory phase is depicted on Figure 3.2.
During the preliminary informative session, participants became acquainted with the research purposes and extent, and the informed consent process was completed (see Appendix B for Informed Consent document). Recruits were then administered the heart knowledge test (Promotores Readiness Test-0, PRT-0), which included questions on health promotion topics such as basic heart structure and function, heart disease risk factors, and prevention. These topics are usually covered by Su Corazón, Su Vida program (see PRT in Appendix C). The exam was a simplified version of the promotores train-the-trainer pretest/posttest, contained in Your Heart, Your Life: A Lay Health Educator’s Manual, available in English and Spanish, from the National Heart, Lung and Blood Institute (NHLBI, 2008a, 2008c). PRT-0 included 23 close-ended questions and it was piloted in three comparable Latino individuals for basic health literacy,
cultural competency, and test duration. Scores of the pretest and posttest are used for the confirmatory phase of the study. Interviews were used for the exploratory phase.

Once the knowledge pretest had been taken, recruits underwent the training of Su Corazón, Su Vida delivered by a certified health promoter during five weekly 2-hour class sessions held at a community location. Training was based on the official manual (NHLBI, 2008a, 2008c) and program flipcharts (NHLBI, 2008b), and consisted of diverse teaching/learning strategies such as lecturing, modeling, group discussion, problem-solving and role playing. Implementation of the program was thoroughly detailed in chapter two. Class activities were documented using an Attendance, Punctuality and Participation Log (see Appendix E). Then, promotores took the PRT-1 posttest, administered under the same conditions that the PRT-0. Scores of PRT-0 and PRT-1 informed the quantitative portion of the research (Objective 1). These two exams were essentially the same except for PRT-0 additionally including four preliminary questions (A, B, C & D) on relevant experience with health promotion and Su Corazón, Su Vida program. All participants were given ample time to complete the tests. Average duration of tests was 28 minutes (22-35). After training was completed, promotores went on to facilitate the program to community members, who also took the pretest and posttest before and after completing the program, respectively.

Test scores validity and reliability were determined. Validity refers to a test’s ability to measure the traits, skills or attributes it is supposed to measure; according to Kubiszyn and Borich (2010), a test is considered content valid if its items or questions match the instructional objectives. In this case, the test was developed at the same time the program Su Corazón, Su Vida was created, and it is included within the original program manual. Pilot study participants (n=3) reported they felt comfortable responding to the test items and did not find any unclear or
confusing terms in its wording. Their scores ranged from 69.6% to 91.3%. Reliability, on the other hand, entails the test yielding the same or similar score rankings in a consistent fashion. For the purposes of this research, I estimated the reliability through the Cronbach’s alpha method (Cronbach, 1951; Kubiszyn & Borich, 2010).

**Confirmatory Phase: SCSV Facilitation by Promotores**

During this stage, participants who had already completed the SCSV training did perform as *promotores* delivering the program to other community members (see Figure 3.3). For the purposes of consistency, each *promotor* was asked to teach three iterations of the course, and was allowed to freely select relatives, friends or neighbors as class attendants in small groups of maximum five participants. In addition to making the matching of *promotor* and class attendees’ schedules easier, a snowball sampling method might have worked as a driver for motivation and engagement.

![Diagram of Confirmatory Phase - SCSV Facilitation to Community Members](image)

**Figure 3.3: Confirmatory Phase - SCSV Facilitation to Community Members**
Exploratory Phase: Participant Observation

Each *promotor* was asked to facilitate SCSV to 3 consecutive groups of up to 5 participants, with the same pedagogical strategies and class schedule used when they were trained. I randomly selected 6 facilitation sessions during the 3rd iteration to conduct participant observation. At the end, each of the *promotores* was able to teach the program to an average of 9-15 people. A 12-item session observation checklist (Appendix F) and notetaking were the tools used to collect information during the SCSV facilitation sessions.

Exploratory Phase: Promotores Individual Interviews

Objectives 2 and 3, and research question 2 (“Assess the barriers and facilitators influencing perceived program engagement and self-efficacy in Latino *promotores* teaching the heart disease prevention program *Su Corazón, Su Vida*”) were addressed in this portion of the study. Individual in-depth interviews were conducted with every participant who had already completed the SCSV *promotor* training and taught the program to community members in 3 consecutive groups. Interviews were completed at the SCC facilities or participants’ homes, and refreshments were provided. By responding an open-ended questionnaire, interviewees were able to provide perceptions on self-efficacy, engagement with the SCSV’s curriculum as well as perceived barriers and facilitators.

All the individual interviews were conducted in Spanish by the principal investigator. Permission to tape-record sessions for transcription and analysis purposes was obtained, and notes were taken. Participants were assured the information they shared was treated confidentially. After sessions, all notes were checked for accuracy, and compared to the transcripts.
An open-ended questionnaire guide to include domains of engagement with SCSV and self-efficacy was used for the interview sessions. The questionnaire contains fifteen open-ended questions (see Appendix D), previously pilot-tested for accuracy and cultural adequacy with one participant, who was then questioned about their perceptions on the guide. They suggested modifications in the wording of some questions for purposes of clarity. No major changes were made to the questionnaire protocol.

**System of Variables**

Learning outcomes from *promotores* and community members were examined in the quantitative portion of the study, meaning the heart health measurable knowledge acquired by participants because of receiving the program. Post-program heart knowledge outcomes were measured in both *promotores* and community members, exploring their potential relationship with other variables collected from the *promotores* group including primary language and education level (see Table 3.1). Other demographic variables assessed included age, gender and birthplace.

**Quantitative Data Analysis**

Statistical analysis methods for research question number 1 (and its sub-questions) are listed in Table 3.2. Involved variables are also shown. Frequency distribution and paired samples t-test were conducted to compare pre-intervention vs post-intervention means, and thereby describe statistically significant relationships among variables. Research question 1 primarily addressed overall differences in heart knowledge outcomes of *promotores* and community members based on the delivery of the *Su Corazón, Su Vida* program. Sub-questions 1.1 through 1.5 looked at any possible influence of several demographic factors on test scores from the
promotores group only. Knowledge on heart health was the dependent variable analyzed through the PRT mean difference scores before and after the intervention.

Table 3.1: Definition of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Type</th>
<th>Variable Definition (and Categories)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart health knowledge</td>
<td>Continuous</td>
<td>This variable was obtained from the Promotores Readiness Test (PRT) and is defined as the net gain in the PRT scores. (PRT-1 scores minus PRT-0 scores)</td>
</tr>
<tr>
<td>Age</td>
<td>Continuous</td>
<td>This variable was obtained from the Pre-Selection Survey and is defined as time elapsed from birth by the beginning of the study (Completed Years).</td>
</tr>
<tr>
<td>Gender</td>
<td>Dichotomous</td>
<td>This variable was obtained from the Pre-Selection Survey and is defined as biological sex (1. Male; 2. Female).</td>
</tr>
<tr>
<td>Education level</td>
<td>Ordinal</td>
<td>This variable was obtained from the Pre-Selection Survey and is defined as max level of formal education attained by the beginning of the study (1. Elementary/Middle School; 2. High School; 3. College; 4. Graduate Studies).</td>
</tr>
<tr>
<td>Primary Language</td>
<td>Dichotomous</td>
<td>This variable was obtained from the Pre-Selection Survey and is defined as language primarily spoken at home (1. English; 2. Spanish).</td>
</tr>
<tr>
<td>Place of Birth</td>
<td>Dichotomous</td>
<td>This variable was obtained from the Pre-Selection Survey and is defined as Birthplace (1. Born Abroad; 2. Born in the U.S.)</td>
</tr>
</tbody>
</table>

Paired samples t-test was used to analyze differences between PRT-0 and PRT-1 scores in the general group, between promotor and community member scores, and between USA-born and foreign-born promotor scores. Pearson correlation coefficient was used to explore differences accounting for age in the promotores group. Any possible differences in mean scores due to promotor’s gender, education level, language spoken at home and birthplace were assessed using one-way Analysis of Variance (ANOVA), using IBM® SPSS® Statistics Version 25 (IBM Corporation).
Table 3.2: Research Question No. 1, Variables and Type of Statistical Analysis

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Post-Intervention Variable (Type)</th>
<th>Baseline Variable (Type)</th>
<th>Type of Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What factors relate to heart health knowledge scores change in Latino <em>promotores</em> and community members?</td>
<td>Post-program heart knowledge (Continuous)</td>
<td>Baseline heart knowledge (Continuous)</td>
<td>Paired Samples (difference) T-Test</td>
</tr>
<tr>
<td>1.1. Is there any difference in mean score change based on <em>promotores’</em> age?</td>
<td>Heart knowledge score difference (Continuous)</td>
<td>Age (Continuous)</td>
<td>Pearson Correlation Coefficient</td>
</tr>
<tr>
<td>1.2. Is there any difference in mean score change based on <em>promotores’</em> gender?</td>
<td>Heart knowledge score difference (Continuous)</td>
<td>Gender (Dichotomous)</td>
<td>One-way ANOVA</td>
</tr>
<tr>
<td>1.3. Is there any difference in mean score change based on <em>promotores’</em> education level?</td>
<td>Heart knowledge score difference (Continuous)</td>
<td>Education level (Ordinal)</td>
<td>One-way ANOVA</td>
</tr>
<tr>
<td>1.4. Is there any difference in mean score change based on <em>promotores’</em> primary language spoken at home?</td>
<td>Heart knowledge score difference (Continuous)</td>
<td>Primary language used at home (Dichotomous)</td>
<td>One-way ANOVA</td>
</tr>
<tr>
<td>1.5. Is there any difference in mean score change based on <em>promotores’</em> place of birth?</td>
<td>Heart knowledge score difference (Continuous)</td>
<td>Place of Birth (Dichotomous)</td>
<td>One-way ANOVA</td>
</tr>
</tbody>
</table>

Under the analysis of variance model, assumptions about *normality*, *homogeneity of variance* and *independence* were made about the distribution of data. The assumption of normality specifies that samples come from normally distributed populations. ANOVA is generally (though not always) robust against violations of this assumption. The assumption of homogeneity specifies that samples are from populations with about the same variance, and it is robust to violations if the heterogeneity of variance is not too extreme. Finally, the independence assumption implies lack of relatedness of each subject’s response to that of any other subject in the sample. Methodological literature suggests ANOVA is more robust to violations of the

73
normality and homogeneity of variance assumptions, and least robust to violations of the independence assumption (Blair & Taylor, 2008; Hebel & McCarter, 2006).

**Qualitative Data Analysis**

The exploratory phase consisted of observation of SCSV facilitation sessions and individual interviews of *promotores* after facilitation. Six sessions were randomly selected in order to gather information about participant-*promotor* interaction and program fidelity. Information was collected using a Session Observation Checklist (Appendix F) which included 12 tasks to be completed by *promotores* when introducing, conducting and closing the session, such as coverage of relevant topics and use of support material (handouts). Session duration and setting were also noted. Extensive notes were also taken about the group interaction including *promotores* communication skills, verbal cues and body language. These data were then compared and jointly discussed with data from the interview transcripts.

Research question No. 2 was addressed during the exploratory stage. To this end, individual in-depth interviews were conducted with *promotores* once they finished teaching the SCSV program. All the participants who completed the training and taught the program were eligible for the interviews. Latino *promotores* were invited to share their perceptions about the possible barriers and facilitators they encountered while teaching *Su Corazón, Su Vida* to other community members. They also provided their views on how those factors might have influenced their engagement with the program and perceived self-efficacy to teach it.

A word of caution is needed here: qualitative research methods not only allow for, but in fact encourage subjectivity from both researchers and participants. Their predominant feature is interpretive in nature, aiming to provide extensive, vivid descriptions of the *what* and *how*
individuals perceive their exposure to a health intervention like SCSV. The final intent is to give participants freedom to elaborate on their experiences as trainees and promotores. It is also inevitable for the investigator to provide his own perspective when analyzing the data, thus reflecting his background as a middle-age, Latino health professional. It is expected for this observer-participant interaction to further enrich the qualitative analysis.

The analysis process was carried out as follows: once the interview sessions were completed, the recordings were transcribed in the original language (Spanish), and then explored for emerging codes using NVivo® Version 12, a qualitative data analytical software program from QSR International (Melbourne, Australia). I started looking at the transcripts for promotores’ experiences teaching the program, the positive aspects they felt it has, as well as their perceptions on delivering it. Once I noticed some descriptive categories and codes started to emerge and take preeminence, I conducted additional iterations of the coding looking for more emerging codes and themes that were then incorporated into the analysis. Finally, all codes were grouped into nodes or categories allowing for the discussion and interpretation of findings.

Coding of interview transcripts was completed in Spanish, as it is the language the interviews were conducted. The principal investigator considered that doing so would preserve the richness of the participants’ perceptions and contributions, thus allowing a more accurate summarization of findings. Furthermore, Spanish is the native language of the investigator. Next, translating the summarized findings into English allowed for a thorough discussion. Doing the other way, that is, translating the transcriptions immediately into English to code the data in this language would have sacrificed precious cultural nuances only appreciated in the original language.
**Advantage of the Mixed-Methods Approach**

The principal investigator used methodological triangulation, which combines quantitative and qualitative methods to answer the research questions. Such a combination, when grounded on an appropriate theoretical framework, constitutes the mix-methods approach or triangulation methodology. From a quantitative standpoint, the investigator utilized a before-and-after study design, which measured the effect of *Su Corazón, Su Vida* program intervention on participants’ heart health knowledge, the proposed variable to address objective 1. In this sense, participants served as both the comparison and the intervention group at the same time. From a qualitative perspective, objectives 2 and 3 were addressed through a data triangulation approach: participant observation, conducted by the investigator during the *promotor’s* SCSV facilitation to community members, which shed light on group interaction, *promotores* efficacy as well as program fidelity issues. Furthermore, individual interviews were completed after the facilitation sessions to assess the perceptions of the newly trained *promotores* about engagement with SCSV and self-efficacy. The PRECEDE/PROCEED Model (Green & Kreuter, 2005) and the social cognitive theory served as a theoretical framework for the adaptation and implementation of *Su Corazón, Su Vida* to this community-based study.

Triangulation approach involves combining multiple quantitative and qualitative methods. Conducting a confirmatory study followed by an exploratory phase (i.e. facilitation session observation, individual interviews) allowed for triangulation, which implies “the use of more than one approach to the investigation of a research question to enhance confidence in the ensuing findings” (Bryman, 2003). Combination of quantitative and qualitative research is frequently undertaken to establish whether they yield convergent conclusions. Also called multi-method approach, such combination helps researchers acquire a more comprehensive set of
findings than that possibly obtained through the application of one of the methods alone. Typically, triangulation encompasses multiple perspectives obtained from multiple observers using different methods and data sources (Bryman, 2003).

Qualitative methods such as participant observation and individual interviews, frequently utilized in public health and social sciences, are a way to first characterize the subject of study and discover “hunches” and hypotheses before proceeding to quantitative measurements. The opposite can also be seen (although less often), with investigators looking at ethnographic methods to further clarify some findings they already obtained through quantitative approaches. I decided to include a confirmatory, quantitative phase in my study to corroborate findings in the literature about Su Corazón, Su Vida being a proven, time-honored health intervention. Once verified it worked for my participant sample, I would proceed to the exploratory portion addressing promotores perceptions on self-efficacy, engagement and all the factors influencing the success or failure of the program. In summary, by combining different data collection approaches and methods, I would get closer to obtaining a “real picture” of the studied topic.

**Ethical Considerations**

This study followed the current accepted standards of confidentiality and informed consent, and it was conducted under the supervision of the University of South Florida (USF)’s Institutional Review Board (IRB) in Tampa, Florida, USA.

**Confidentiality**

The principal investigator completed all the training associated with research in human subjects, including the Health Insurance Portability and Accountability Act (HIPAA) compliance requirements. All the information obtained from the participants, including that gathered through
PSS, PRT results, individual interview transcriptions, participant observation and notes has been secured by the principal investigator using appropriate procedures including locked cabinets and security passwords in an external hard drive not connected to the internet. Electronic and printed-out material files will be kept for five years after the research completion. All interview sessions were recorded but participants’ names were not included in transcripts, field notes or any other part of data analysis. Pseudonyms were used whenever a specific participant’s quotation were to be included in the discussion. Likewise, PRT results were de-identified before undergoing quantitative analysis.

**Informed Consent**

All the participants were provided with and required to sign an informed consent pursuant to the ethical guidelines of the University of South Florida’s IRB.

**Positionality of the Researcher**

I came to this research study with some skills derived from my personal and professional background. I am a Latino immigrant originally from Venezuela with a medical doctor degree and clinical experience in hospital settings. This has given me wide exposure to the way healthcare systems work in Latin America. Upon coming to the U.S., I became in contact with the *Su Corazon, Su Vida* program, and have been working in the public health field with diverse programs, especially those targeting older adults with chronic conditions including cardiovascular disease. In short, as a clinician I have witnessed the challenges in term of economic and social costs faced by heart patients, especially in intensive care units. I have also observed the major impact well-devised public health measures have on cardiovascular outcomes. Having been exposed to such differing health contexts, cultures and languages
provided me with a unique position to assess the process of training *Su Corazon, Su Vida* promotores, and their lived experiences while facilitating the program in the community.

The qualitative research process is influenced by the social, economic, cultural, historic and intellectual context of researchers. These features exert a profound impact in the relation between participants and researchers, who are both bringing their baggage into the inquiry. The investigative process also depends on how researchers view themselves and are viewed by others. In this sense, there are often power differentials and negotiation involved. Researchers may act as insiders or outsiders, privileged or not (Merriam et al., 2001; Ozano & Khatri, 2018). For the present study, I was aware of my dual role as healthcare worker and principal investigator. In the past, power differentials became evident every time I got engaged in any community-based activities. It was commonplace meeting people who wanted to discuss their health issues with me in the middle of those activities once they knew I was a medical doctor. Being the study participants of my own ethnicity, cultural background and about my age, it came as second nature that I related to participants’ Latino identity and Spanish language through my own experiences as health provider and patient with a chronic condition (hypertension). Furthermore, I tended to relate more to the experiences of Latinos born abroad coming to live to this country, as I migrated myself a few years ago. Memories came back when, upon arrival, I was struggling to secure a trustable primary care provider to fill up my prescriptions while navigating an unfamiliar healthcare system in an extraneous culture and language.

According to (Berkovic, Ayton, Briggs, & Ackerman, 2020), insider research may confer some advantages such as building rapport and credibility with participants by facilitating a nuanced perspective of the studied matter. But some pitfalls may arise too: participants assuming the researcher should provide health advice, and compromised researcher’s objectivity. The latter
should not be too concerning as qualitative research is, by definition, subjective. As I was preparing to conduct the first individual interviews, I became aware I had to reflect on my own experience as a patient with high blood pressure, as I was going to be discussing about cardiovascular disease risk factors with participants. I was also very familiar with Su Corazón, Su Vida since I was myself trained with the program back in 2009. The intent was not to let my preconceptions lead interviewees’ responses in any way. I, for instance, might fall on the temptation of assuming I understood participants’ lived experiences. Or, some participants might not have access to the same health resources available to me.

In this regard, authors like Tufford and Newman (2010) have proposed a bracketing process, understood as a way “to protect the researcher from the cumulative effects of examining what may be emotionally challenging material.” There are actually calls for it to be done throughout the entire research project (not just during data collection), and for having study participants to do it. Bracketing methods include researchers writing reflexive journals before defining the research questions, as well as memoing and including an outside source during interviewing. It is crucial for researchers to acknowledge preconceptions during the iterative process of data collection and analysis, to avoid interpreting participants’ lived experiences through the researcher’s own personal lens.

While I did not conduct a systematic bracketing process, I took several steps in this direction. At the moment of developing the interview questionnaire, I made sure to include some phrases in its introductory statement encouraging interviewees to feel free to express all of their opinions, feelings and beliefs about cardiovascular disease and the program. Most importantly, I gathered all their comments apparently not related to the research question, as this was an exploratory design. This way, I strived to stay focused on the data, so to avoid being influenced
by my own previous experience as investigator or health worker. In general, I perceived my cultural and professional background as an asset helping the research aim to be achieved while making participants comfortable when sharing their personal views. Previous knowledge on heart disease also helped me to navigate through the intricacies of promotores trying to make sense of their own personal or family traumatic experiences with cardiovascular disease. However, I often found myself walking on a tightrope trying to remain objective during data collection and analysis.
CHAPTER FOUR:

RESULTS

This study examined the relationship between Su Corazón, Su Vida (SCSV), a heart disease health education intervention, and heart knowledge acquisition in Latino promotores and community members, as well as promotores’ perceptions on domains of self-efficacy and engagement with the program as influenced by program barriers and facilitators. Results are presented next according to the order of the research questions.

Research Questions:

1. What factors relate to heart health knowledge scores change in Latino promotores and community members?

   1.1 Is there any difference in mean score change based on promotores’ age?

   1.2 Is there any difference in mean score change based on promotores’ gender?

   1.3 Is there any difference in mean score change based on promotores’ education level?

   1.4 Is there any difference in mean score change based on promotores’ primary language spoken at home?

   1.5 Is there any difference in mean score change based on promotores’ place of birth?
2. Assess the barriers and facilitators influencing perceived program engagement and self-efficacy in Latino *promotores* teaching the heart disease prevention program *Su Corazón, Su Vida*.

**Confirmatory Phase: Quantitative**

**Intervention**

All 20 enrolled participants were convened to receive the 5-week, 2-hour a week, SCSV training, after having taken the PRT-0 pretest. Three individuals did not finish the training workshop; one of them abandoned due to time constraints and personal health reasons he did not wish to disclose. Seventeen subjects completed the training. Of the 17, one dropped out of the study for time constraints and “limited social connections.” The remaining 16 participants (9 born abroad, 7 born in the U.S.) attended all the training sessions, showed punctuality, and then went on to facilitate the program. All of them were included in the analyses.

**Demographic Characteristics**

Twenty Latino individuals were recruited according to the study protocol. Thirteen individuals were females (65%), and seven were males (35%). Average age was 52 years (range 32-73, SD= 13.44). Eighty percent (*n*= 16) of all participants spoke only Spanish at home while twenty percent (*n*= 4) spoke both English and Spanish language. The highest educational attainment was high school in 30 percent (*n*= 6) of participants, while 45 percent (*n*= 9) obtained a college degree, and 20 percent (*n*= 4) attended graduate school; with one individual only getting some elementary/middle school. Ten participants were born in the United States, 6 in Venezuela, 2 in Colombia, and 1 each in Cuba and Ecuador. See Table 4.1 for more details.
### Table 4.1: Demographic Characteristics of Promotores

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<tr>
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<th>Born Abroad</th>
<th>Born in USA</th>
<th>Total</th>
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<td>n</td>
<td>Mean</td>
<td>n</td>
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<tr>
<td><strong>Gender</strong></td>
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<td></td>
</tr>
<tr>
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<td>8</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Male</td>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Respondent's Age (y)</strong></td>
<td>57</td>
<td></td>
<td>47</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primarily Used at Home</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both English and Spanish</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Spanish Only</td>
<td>9</td>
<td>7</td>
<td>16</td>
</tr>
<tr>
<td><strong>Highest Education Level Attained</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>6</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Elementary/Middle School</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Graduate School</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>High School</td>
<td>2</td>
<td>4</td>
<td>6</td>
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</tbody>
</table>

Latinos born in the U.S. were younger with an average age of 47.4 years (range 32-70, \(SD=13.7\)), as compared to participants born abroad, with mean average of 56.7 (range 35-73, \(SD=12.1\)) (Figure 4.1). Overall, males were younger than females (Figure 4.2). There were five women and five men among U.S. born Latinos. Women average age was 50.4±16.4 years, and men average age was 44.4±11.3 years. Born abroad Promotores included eight females and two males. Average age for women in this group was 61±8.8 years, while for men it was 39.5±6.4 years.
Figure 4.1: Age Distribution of Promotores by Birthplace

Figure 4.2: Age Distribution of Promotores by Gender
No significant difference in education attainment according to birthplace was observed. Sixty percent ($n=6$) of those born in the U.S. had a college degree (half of which also had graduate studies), as compared to 70% ($n=7$) of the ones born abroad (one participant had attended graduate school). The rest of participants had mostly high school education (one subject had some elementary school). Of the 4 participants dropping out of the study, there were 2 females and 2 males. One female was born abroad, and had attended college; the remaining 3 participants were born in the U.S. and had completed high school. All of them decided to leave the study during the training sessions or before program facilitation.

Finally, there was difference across groups in the language spoken at home (Spanish vs. Spanish and English). Seventy percent ($n=7$) of participants born in the U.S. used only Spanish as primary way of communication at home as compared to ninety percent ($n=9$) of Latinos born abroad. Participants using both languages at home were usually younger than those solely speaking Spanish (average age 34.3 vs. 53 years). There was a 70-year-old female participant who spoke both English and Spanish at home. She is a retired flight attendant.

**Question 1: Heart Knowledge Outcomes**

A paired samples t-test was conducted to evaluate the possible relationship between the *promotores readiness test* (PRT) scores and delivery of the SCSV program intervention. It was calculated for the test scores from both the *promotores* being trained and community members receiving the program from *promotores* later on. In every case, the outcome variable of interest was heart health knowledge, defined as the net gain in PRT scores (mean score difference between PRT-1 minus PRT-0) in each group as a result of having received the program. PRT test contained 23 questions (each one was worth one point) for a maximum possible score of 23
points. The pretest (PRT-0) was found to be both reliable and internally consistent, yielding a calculated Cronbach’s $\alpha = .81$. Two of the posttest items (questions 10 & 12) were removed from the reliability analysis due to having zero variance resulting in a lower, albeit still satisfactory, Cronbach’s $\alpha$ statistic (.78).

In total, 55 community members received the 5-session program from the 16 promotores during the third iteration of the facilitation. Table 4.2 depicts percentage test score gains/losses from community members nested with their corresponding promotores teaching them SCSV. Promotor interview duration is also shown. Average class size was 3.4 (min: 2, max: 5). Promotor group had a total of 16 pretest/posttest score pairs. This group showed a pretest mean score of 15.7 points ($SD= \pm 3.4$, $min=7$, $max=21$, $median=15$) and a posttest mean score of 19.1 points ($SD= \pm 3.4$, $min=10$, $max=23$, $median=19$), for a net mean score gain of 3.4 points. Paired samples t-test showed statistically significant differences in promotores test scores measured before and after intervention ($t(15)= 3.967$, $p=.001$; 95% CI: 1.561, 5.188).

Thirty-two community members completed both the pretest and posttest administered by the promotores. Eight test scores (5 pretests, 3 posttests) were missing from this group (see Table 4.2). Pretests taken by community members showed a mean score of 14 points ($SD= \pm 4.9$, $min=0$, $max=22$, $median=15$) while posttest mean score was 16.3 points ($SD= \pm 3.8$, $min=8$, $max=22$, $median=16$). Net mean score gain was 2.3 points, and there were significant differences after program intervention ($t(31)= 3.337$, $p=.002$; 95% CI: 1.093, 4.532).
Table 4.2: Pretest/Posttest Scores, Promotores (PR) and Community Members (CM)

<table>
<thead>
<tr>
<th>PR No.</th>
<th>Pretest Score (%)</th>
<th>Posttest Score (%)</th>
<th>Net Gain (%)</th>
<th>Interview Duration(min)</th>
<th>CM No.</th>
<th>Pretest Score (%)</th>
<th>Posttest Score (%)</th>
<th>Net Gain (%)</th>
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Finally, I conducted pairwise analysis for both promotor and community member outcomes combined into one group (n=48 complete pretest/posttest pairs). Their pretest mean score was 14.5 points (SD= ±4.5, min=0, max=22, median=15), and a posttest mean score of 17.1 points (SD= ±3.9, min=8, max=23, median=18). Net mean score gain was 2.6 points. There were statistically significant differences in learning outcomes after program intervention ($t(47)=4.798, p=.000; 95\% CI: 1.742, 4.258$). Altogether, the null hypothesis stating that there was no difference between before and after intervention PRT scores was rejected in Latino promotores and community members, both separately and combined into a single group.

**Question 1.1: Outcome differences based on age.** Promotores’ age was analyzed to describe a possible relationship with the outcome variable of interest, heart health knowledge. Pearson correlation coefficient test only showed a slightly positive correlation between age and PRT mean score difference ($r=.107, 95\% CI: -.371, .513$). Thus, apparently there is no strong linear relationship between the variables age and knowledge gain outcome, or a potential relationship cannot be detected by this method.

**Question 1.2: Outcome differences based on gender.** I conducted one-way analysis of variance (ANOVA) exploring the possible relationship between promotores gender and heart knowledge difference. PRT score mean difference, the outcome variable of interest, was entered along participant’s gender, a dichotomous variable. One-way ANOVA test showed no statistically significant relationship between gender and heart knowledge mean score differences ($F(1, 14)=.41, p=.53$); that is, it failed to reject the null hypothesis of no difference in knowledge mean score differences due to promotores gender.
**Question 1.3: Outcome differences based on education level.** Heart knowledge difference was also compared with the maximum education attainment of participants, which included four levels, i.e. elementary, high school, college and graduate school. One-way ANOVA statistical test showed no significant relationship between *promotores* education level and PRT mean score differences ($F(3, 12)=2.93, p=.08$). In other words, the null hypothesis of no difference in test scores differences in relation to education attainment failed to be rejected. The lowest variance was observed in participants who attended college.

**Question 1.4: Outcome differences based on language spoken at home.** *Promotores* were questioned if they spoke only Spanish at home or if they used Spanish and English interchangeably. I conducted one-way ANOVA statistical test to explore a possible relationship between language spoken at home and heart knowledge score differences. I found no significant relationship between these two variables ($F(1, 14)=.002, p=.97$). Thus, the null hypothesis that there is no difference in PRT mean scores based on primary language failed to be rejected in Latino *promotores*.

**Question 1.5: Outcome differences based on place of birth.** Finally, I conducted statistical analysis to explore the possible relationship between *promotores’* place of birth (United States or abroad) and the dependent variable, heart knowledge difference scores. One-way ANOVA test yielded a statistically significant relationship ($F(1, 14)=7.35, p=.02$) between the two variables, with higher PRT mean scores differences observed in the born abroad *promotores* group ($\bar{x}=5.000, 95\% CI: 2.907, 7.093$). Thus, the null hypothesis that there is no difference in PRT mean scores based on birthplace was rejected.
In summary, the delivery of *Su Corazón, Su Vida* to Latino *promotores* and community members showed statistical association with higher heart health knowledge outcomes. Significant difference in knowledge outcomes based on *promotor* birthplace was also observed.

**Exploratory Phase: Qualitative**

**Promotores Characteristics**

Sixteen Latino trained *promotores* were included in the exploratory phase of the study. Nine were born abroad and seven were born in the U.S. After facilitating SCSV for 2-3 iterations, all of them completed individual, in-depth interviews in Spanish. I conducted the recorded interviews at the SCC facility or at participants’ homes upon their request. Interviews took place between one week and one month after the facilitation ended. Average duration of interviews was 25 minutes (range 15-32). Interview recordings were transcribed, de-identified, and then coded using the NVivo® qualitative research software. Pseudonyms were used to credit direct quotations from participants. Participant number was also included the first time they were quoted.

**First Analysis: Initial Thoughts**

I completed a preliminary reading of the 16 transcripts looking for some commonalities. A 15-item open-ended questionnaire was used to conduct the interviews exploring *promotores’* perceptions and lived experiences while teaching the program. Items in the questionnaire (Appendix D) were based on the social cognitive theory which included principles of reciprocal determinism, outcome expectations (social and self-evaluative), personal and collective self-efficacy, observational learning, incentive motivation and facilitation. The first two, introductory questions in the questionnaire addressed overall knowledge about risk factors for cardiovascular
disease and its impact on promotores’ family and friend circles. Then, they had the opportunity to share their experiences on being trained on and facilitating SCSV.

During this first iteration, I noticed several general themes related to the meaning heart disease entails for Latinos as they elaborated on its root causes, impact and socioeconomic effects. Addressing these overarching commonalities first may help provide a context for further discussion on promotores involvement with the program. These themes included the heart as a source of life, the inevitability of heart disease, and changing eating patterns.

**The heart as a source of life.** Several participants related to the connection between having a healthy heart and living a full life or inversely, leading a “disorderly” life and getting one’s heart sick. This link is prevalent across many cultures who assign heart an undeniable role in human vital functioning as a blood pump, but also give it an emotional connotation, thus seeing it as the bodily seat of feelings and sentiments. Rafael (Participant #5), a participant born abroad summarized it as “…because of their lifestyle and the way they live, their heart will be damaged at the end.” Such a strong connection was also expressed as fear of death: “Nobody wants to see a family member falling ill [of the heart]; and, first thing one thinks is, ‘he is going to die!’”, Norelys (Participant #10), an Ecuadorian woman, said. “That is very troubling, it gets people really nervous”, she added. Spanish-language television frequently depicts heart disease as a grave and terminal illness in telenovelas and radionovelas; also, the lyrics of many popular Latino songs address the aches and pains of being heartbroken because of a love deception; so it is no wonder the symbolism around the heart related to life and death.

Promotores held similar views regarding the heart as a symbol of life, regardless of their country of origin. One participant blamed heart disease as a trigger for mental health disorders
due to the physical limitations experienced by cardiovascular patients, many of who end up
suffering depression. Others mentioned difficulties to stay in physical and emotional contact with
sick friends or relatives, whether hospitalized or homebound, due to “the way we live here, folks
don’t have the same level of contact as we have in ‘our countries’.”

Promotores also appeared to make a connection between the program’s name (Su
Corazón, Su Vida; Your Heart, Your Life) and the importance of working toward keeping a
healthy heart to be able to enjoy a full life. A few commented on the appropriateness of the
program being called that way. They said that the program’s name made it easier to explain
major concepts such as the heart as a vital organ that needs to be taken care of. They also found
it helpful whenever they had an opportunity to talk about the program with a stranger like, for
instance, at an elevator speech. Pursuing and maintaining cardiovascular health was considered
by participants as a fundamental value in the context of family life.

Some of the participants shared adverse experiences they went through involving close
friends and relatives affected by heart disease and other conditions like diabetes. During the
training, they learned how decompensated diabetes can lead to cardiovascular complications or
how a cardiac event can take diabetes out of control. Leida (Participant #1), for example, recalled
her sister’s illness and passing due to diabetes complications, because “she neglected her health
through the end.” Another participant was impressed about a friend’s blood sugar concentration
of around 500 mg/dl shortly before suffering a heart attack. Until receiving the SCSV program,
Maura (Participant #2), a U.S. born Latina, had not realized the existing relationship between
diabetes and cardiovascular disease. “A friend from my church passed away a few days ago”, she
started. “She was hospitalized because of diabetes but then her heart failed, and she died. I was
like, ‘wow! I just learned that in the course; diabetes damages the heart, I mean, there is a
connection between both diseases.” Other participants in the group also pointed out the heart is among the main organs in the body, and its failure may be devastating for both the physical and mental health, thus affecting people’s ability to perform activities.

Beliefs about the heart - life connection were informed not only by direct experiences and family values but also by perceptions from pop culture. Several participants commented on the video they were shown during the course presenting how heart attacks were depicted in movies as a “dramatic” occurrence (“Hollywood heart attack”, they dubbed it). They were especially cognizant of the different manifestations cardiovascular disease may adopt, and how the program helped them to recognize the clinical signs so they could get ready to act on time and make a difference in their family’s lives. Laura (Participant #4), another U.S. born promotor said: “By taking this class I feel I’m putting more years to my mom’s and my husband’s lives.”

Inevitability of heart disease. While most participants agreed about the importance of primary prevention, several of them expressed rather “fatalist” views about the lasting presence of cardiovascular disease in their families, or even affecting their personal health. In some cases, the risk of heart disease was ascribed to genes or poor lifestyle choices such as unhealthy eating, sedentary life, smoking or excessive stress. “My father suffered diabetes; as I am a big person, now I also have diabetes and many risks of heart problems”, shared Marcelo (Participant #17), a 33 y/o U.S. born participant, during the interview. Maura added: “Both of my parents died of heart attack…and in this community we have many people with pacemakers and heart murmurs.”

Such an apparent normalization, or “commonplace”, of heart disease seen as “inevitable” (with all its nefarious consequences in terms of inaction) was expressed as a defense mechanism
against the sorrow and fear caused by illness and loss of life. Often, unavoidability was attributed to fate, almost as if it were given a supernatural character, beyond people’s control. Leida, whose relatives live mainly in Cuba, shared: “Most of my family was like predestined to suffer heart disease; more than five members in my family are affected.” She also confided how her older sister passed away due to complications of heart disease and diabetes. Other participants were more optimistic, showing willingness to make the necessary changes to overcome adverse cardiovascular outcomes.

**Changing eating patterns.** As Latinos migrate to the U.S., they encounter a wide array of foods, especially low-nutrition fast food which is usually more affordable. They can also be exposed to unhealthy eating options in their countries of origin, as American food franchises (and Western eating patterns) are now everywhere. Some of the participants in the study made remarks regarding being unable to access heart healthy options mostly due to cost and time constraints. Junk food is generally cheaper and readily accessible. Jose (Participant #12), a Venezuelan *promotor* shared:

> Because of lack of time or their jobs, folks tend to eat unhealthily and to be more sedentary; they start consuming meals with high cholesterol, saturated fats and lots of salt…I believe this is a major reason [heart] disease is such a concerning problem worldwide, and especially here, in America.

Some born abroad participants pointed out that many foods often available at supermarkets are high in sodium, saturated fat and *trans* fatty acids. They reminisced of the times they had the time and resources to shop for, and prepare, wholesome meal options back in their home countries. A *promotor* expressed worry about having lost control of what her two
teenagers ate at school and at their friends’ homes. She also highlighted stark differences between their current food options and what they used to consume before coming to live in the U.S.

**First Analysis: Emerging Categories and Codes**

During the first iteration of the analysis, I started identifying several recurring topics coming from the participant remarks about their lived experiences being trained on and then teaching *Su Corazón, Su Vida*. Many of those comments were triggered by questions in the interview questionnaire (Appendix D) related to how they perceived the program, an effective promotor attributes, and their expectations when getting involved. At other times, they seemed to completely go “off-script” to elaborate on their personal views about what they felt during their journey as promotores and the way the intervention should be delivered. In this direction, participants started to comment on some factors that hindered the program facilitation, as well as certain real or hypothetical situations which might make its delivery easier and more effective. Table 4.3 displays four primary categories reported by nearly all participants (sources), which included a sizable number of codes and quotations related to those constructs.

**Table 4.3: First Analysis Emerging Categories**

<table>
<thead>
<tr>
<th>Category</th>
<th>Sources (n)</th>
<th>Quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy</td>
<td>16</td>
<td>116</td>
</tr>
<tr>
<td>Engagement</td>
<td>15</td>
<td>126</td>
</tr>
<tr>
<td>Facilitators</td>
<td>14</td>
<td>101</td>
</tr>
<tr>
<td>Barriers</td>
<td>13</td>
<td>39</td>
</tr>
</tbody>
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I will begin describing the least frequently referenced category (*barriers*) up to the most referenced.
Barriers. Promotores described about a dozen different factors or situations under the barriers theme, which influenced adversely the delivery of the program. Some factors were related to the program itself, some were operational in nature. Time constraints was the most frequently cited issue, and it was almost always a complaint voiced by community members attending SCSV classes. This challenge started to become evident as promotores tried to recruit participants, and many people just replied they had very busy schedules. In other instances, they started the course and then stopped attending. In only one case, a promotor complained about shortage of time because he had to work. Ernesto (Participant #8), a U.S. born participant, said: “You can’t get back home at 8 or 9 pm, not having had dinner yet after the whole day on the street (he drives for Uber for a living), and go straight to teach the class…it’s crazy!” One strategy most promotores used to counteract low attendance was giving the class at participants’ homes while accommodating to their schedules. As one participant put it, “it’s the only way for them being punctual!”

Transportation was the second most reported challenge; it was an issue for about five promotores, who faced obstacles to get to participants’ homes. Often times, struggles involved a combination of transportation, weather and time issues. As a result, several promotores decided to hold the workshops at their own homes. A Venezuelan promotor named Angela (Participant #14) shared, “I haven’t completed the classes because I don’t have a car. I’m stuck at home and depend a lot on others.” She was one of five participants who did not return completed knowledge tests. Transportation barriers also affected the completion of tasks related to facilitating the course, for example, stocking on supplies or food for the sessions. In this regard, Maura said, “I wasn’t able to make some copies I needed to give participants handouts because I don’t drive.” In some cases, they had a friend or family member to give them a ride.
An important issue raised by interviewees was participants feeling uncomfortable due to what it was perceived as low (health) literacy. Both Leida and Marcelo reported they had students who were struggling with the course’s basic medical terminology used to describe heart functioning, risk factors and prevention. Apparently, these community members needed extra help to catch up with the rest of the group; in other words, promotores had to spend more time with them in order to reach a uniform level of understanding. Leida, for example, said, “If you include much of medical jargon, people get tired. I had two attendees with very low literacy level, they were tortured! I had to use mainly drawings and pictures to explain myself better.” Another promotor made similar statements about difficulties in communication, but related to language instead. In some cases, participants in the classes would be accompanied by a person who is not proficient in Spanish, thus prompting promotores to reject them or to switch languages, as long as the promotores were bilingual. This situation would create an additional barrier in terms of effective communication and time management. For instance, Nurys (Participant #16), another promotor from Venezuela, encountered this challenge: “I wanted to facilitate it in Spanish; but this woman’s husband only spoke English. Thus, I wouldn’t do it.”

Finally, one promotor described issues in relation to handling computer technology. She experienced some temporary difficulties as trying to play the Act in Time to Heart Attack Signs instructional video.

A frequently cited issue was the conflicting schedules of promotores and class attendees, which resulted in sessions to be postponed or moved around the day, especially to the evening hours. Time demands of workplace were a common reason for this. One participant put it this way, “folks are super busy these days!” Financial struggles were also mentioned as instrumental in the lack of time available for the classes. Marie (Participant #15), a Colombian retired flight
attendant, conjectured that “low-income people have to take several jobs; it’s something we discussed a lot in class.” *Promotores* also described other operational barriers to deliver *Su Corazón, Su Vida*, including some participants experiencing medical issues or going to doctor appointments, and some others going on unexpected or planned trips (e.g. cruise). Leida, for example, lost a participant who was left hospitalized for a long time. “You don’t plan for diseases; they just show up, you know”, she said.

**Facilitators.** Participants had the opportunity to share any factor, strategy or situation they perceived would help *Su Corazón, Su Vida* to be delivered effectively. These facilitators were either implemented during the sessions or proposed for future classes. I was able to classify them as pertaining to the program content, its mode of delivery, or something outside the scope of the program. In the first category, I heard comments about the importance of adding breathing exercises as a relaxation technique, doing light physical activity, and especially, discussing the nutrition principles with greater detail. Removing topics such as the activity on tobacco smoking was also proposed. Several participants did cooking demonstrations at the end of the classes or had food or refreshments prepared in advance for the attendants. Maura’s students, for example, lived in her apartment building, and she just treated them with breakfast or lunch, depending on the time of the session. “I used to incentivize them, ‘what time are you coming over?’ if they would reply, ‘in the morning’, I’d say, ‘right, don’t have breakfast; I’ll have it ready for you.’” Another promotor, Leida, would prefer preparing a meal along her family members during class time (usually at the end). “I also join them on the cookouts during the weekends; so I take the time to reinforce what they learned in class.”

Likewise, praise was given to certain program features such as having colorful pictures, handouts for class activities (e.g. chart for BMI calculation), and the instructional video. One
participant remarked the role of visual memory in learning, particularly for people with low literacy. However, one *promotor* proposed changes to be made to the video: “I’d like it to be a little shorter; or just split it in two or three short clips.” There was a number of strategies implemented or suggested by participants to better facilitate *Su Corazón, Su Vida*. From giving the class in small groups to keeping a slow pace while making good use of time, to allowing ample time to respond questions were the most salient suggestions. Doing the class in small groups was seen as advantageous by participants, to foster a more intimate environment where people could share any concerns. In this sense, Leida said something I found meaningful: “If you’re too shy to ask a question, somebody else is going to do it, and you’re going to get benefitted.”

A strategy utilized by *promotores* to find a common ground with participants or as an icebreaker was *reflecting on past experiences*, that is, inviting them to share aspects of their personal or family medical history. In addition to working as a catalyzer for group dynamics, finding others went through similar health concerns helped everyone to assimilate new knowledge and to better approach a change of behavior in the future. “I have no heart issues; but I do have many risk factors, and that has made more aware about how to better my health”, said Maura in this vein. Others referred they felt empowered just by having participants to talk about their health concerns while using diverse group techniques such as brainstorming and problem solving. Finally, there were some suggestions aimed to improve the delivery of the program, including offering flexible schedules, having *promotores* getting paid and holding the classes at participants’ homes. Leida, for example, said her “means of transportation was the elevator”, as all of her students lived in her building; thus, she organized her classes locally. Regarding
securing payment for facilitators, Ernesto opined that “the program should be staffed with people receiving adequate payment.”

**Engagement.** Totaling 126 quotations, *engagement* was the most referenced category in the first iteration. Understood as the way participants came up to “own” the key tenets of *Su Corazón, Su Vida*, engagement signals the involvement of *promotores* and their families with the program. In other words, to what extent *promotores* were willing to keep teaching *Su Corazón, Su Vida* to other community members. Often times, they expressed it through planning and applying strategies to increase participation; they also reflected on the perceived effect of the program on their own lives. At other times, involvement equated to suggestions from *promotores* and community members to improve the program. Most participants expressed feeling enthusiastic during the training sessions and when facilitating the program to their families and friends. This was corroborated during the direct observation of facilitation sessions. As they were required to teach the program at least 2-3 times before undergoing interviews, the initial excitement soon was replaced by more critical (and serious) views on the program inner workings and viability. In fact, one participant voiced his concerns about the importance of securing funds so *promotores* would be paid as part of the program long-term sustainability. I was able to identify at least four ways *engagement* was brought up through the use of different codes: *habits*, working at the intrapersonal level; *relationships*, working at the interpersonal level; *program features*; and, *program sustainability*. The latter two working at the organizational/policy level.

Interviewees often reflected on how *Su Corazón, Su Vida* influenced them at a personal level, particularly in the formation and consolidation of new health-related *habits*. They conceived it as the realization something was missing in their lives related to health and
wellness. Some of them acknowledged unhealthy behaviors that needed to be changed; indeed, one participant (Jose) likened the program to an “awakening”, also saying: “my work is too sedentary, all day long sitting at the computer. This training helped me try new ways of doing exercise.” Most reported having learned helpful concepts about healthy cooking, healthy eating, and exercise and, in general, working towards living a better life. They also remarked the importance of having quality of life beyond one’s life span. Others highlighted the importance of good communication with their health providers. Habit formation was articulated through terms like “repetition”, “learning”, “changing”, “awakening” and “discovery.” Leida, for example, stated it humorously: “…everything is a habit, it becomes a custom…automatically. You repeat and repeat it. First, they force you to do it, and then you learn to do it.” The gap between learning new knowledge and actual behavior change is determined by a person’s level of readiness. She also proudly shared a personal achievement attributed to having taken the class: “Since I attended the workshop, I am reading the food nutrition facts labels; I never did this before.” Ernesto, who had a coronary bypass surgery a few years ago, reflected: “I did relate to all what we learned in the training. There are so many things…if I’d have avoided them, I wouldn’t have needed those surgeries.” He also said, “At some point, I discovered I could live without smoking.”

Fostering interpersonal relationships was also perceived as a means of feeling engaged with Su Corazón, Su Vida’s tenets. From better communication with doctors to establishing new friendships, to involving family members in the classes, there were a number of observations from community members or strategies already put in place by promotores. Two of them said encouraging students to exchange phone numbers during the first session would increase attendance and keep interest high. Another one used to call his students by phone the day before
class as a reminder. Key terms commonly used under this domain included “being aware”, “meeting people”, “relation”, “acquainted”, “similar interests”, “fun”, “joint participation” and “friendship.” They often equated engagement with awareness driving them to incorporate tenets of *Su Corazón, Su Vida* to their family lives with the aim of achieving a positive change of habits. Other participants shared they were making positive changes regarding portion sizes as well as reading nutrition fact labels while doing grocery shopping. While giving it a religious connotation, the way Leida stated how contagious engagement can be is quite telling: “it’s like when one accepts Jesus Christ, and wants everybody to be saved; well, here one wants everybody to be healed!”

The perceived need to share what they learned with family and friends was very prevalent across the interviews. Some viewed getting involved in the program as “a win-win” because they could obtain useful tools for their personal health while working towards someone else’s goals. Phrases like “planning a diet with my sister” and “bettering my mom’s and my husband’s lives” are examples of how such an interpersonal interaction might be a conduit for program engagement. Maura, facing some health challenges herself, shared this short testimonial:

> My son is diabetic, and his numbers were all so bad. But now he’s become aware and lost some weight. A couple of months ago, his pants size was 42; now it’s down to 36. He goes to the gym six days a week; and everything I learn, I share with him.

Many positive features of *Su Corazón, Su Vida* were aroused by participants. Starting with the program being delivered free of cost, they also highlighted its simplicity, plain language, colorful materials and included recipes for preparing healthy meals. Language adequacy meant no only the literacy adequacy of its wording but also the Spanish language and
cultural appropriateness. This is as relevant as the program was developed in this language from its inception. This is what Laura shared regarding language attributes: “…my aunt, who teaches Spanish, just told me, ‘oh, the [program] wording is so simple and understandable’.” Promotores perceived they could take advantage of those features to boost participants’ enthusiasm and keep them interested throughout the program facilitation and beyond. A frequently cited attribute related to the program content was its “health tidbits” including relevant statistics about heart disease (e.g. mortality rates), cardiovascular function, and lab tests normal values. Interviewees said presenting these quick facts always worked as a conversation starter. Laura believed in this regard: “folks get stunned when they’re told the heart pumps out five liters a minute. ‘Wow, that’s a lot!’” She also shared that these stats helped to “awaken” participants, to have them pay attention to their numbers, and to ask questions during doctor visits. In summary, to empower them; “this way they can be more responsible for their health”, she added.

Participants conceived engagement as contingent upon program sustainability, that is, they would continue to teach the course as long as there were sufficient resources available. Most of them reflected on the long-term effects of the intervention as well as its feasibility. A few expressed their intentions to continue facilitating it, especially because they got to keep the materials and the program is license-free. Leida, for instance, said she was planning to teach it to her daughter and son-in-law who live out of town. Another promotor (Maura) went further stating that “…more than giving the class to other people is to continue learning on how to improve.” Making the program sustainable also comprised calls for obtaining funding and payment for promotores, as well as ensuring program fidelity by following the class schedule to prevent attrition. Alix (Participant #13), a born abroad Latina, explained it better: “It is so important to give the classes back-to-back; because if you stop, two or three weeks pass, and
people start forgetting what they’ve learned so far.” Other participants offered improvement ideas to expand the program and keep it running: “We would be able to develop a multimedia based on this program and upload it to YouTube or any other platform, so it can be accessed by participants after receiving the workshop”, said Jose [he is a computer engineer]. He also emphasized the relevance of keeping a close contact with community stakeholders to promote awareness in the long-term.

Demonstrating interest in the program while working toward long-term objectives was considered worthwhile. Interviewees stated that a good health promoter should exhibit genuine interest in the program in order to be able to learn all its materials and to teach it effectively. In addition to engagement, this attitude is related to the self-efficacy tenet of the social cognitive theory, as it gives participants ownership of the program when they start seeing expected positive results in their lives. Emphasis was also made on having access to every available resource, not only printed out materials but better ideas on how to facilitate the sessions. Others went on to propose refreshers or a more advanced course of study beyond the program for those especially interested in working in that area for a long time. In this sense, Petra (Participant #11), a U.S. born Latina, advanced the following idea: “…if anybody wants to, let’s say, get a deeper understanding on these health topics, it would be good having like an advanced training that can be used to teach the program.”

Furthermore, there were multiple suggestions for program improvement such as allowing more time for exercise (at least 15 minutes every session), enhancing the weekly pledges or health action plans, and organizing smart shopping and healthy cooking events among others (“learning to cook is trendy these days”, said one participant). This idea was seconded by Marie, who shared a strategy she used on class: “I always start with a story. Personal. How healthy
eating has influenced me; and the fact that my profession has been all around food.” Finally, one participant (Marcelo) mentioned the importance of diversity in the *promotores* workforce as a strength of the program. He noticed that participants in the training came from different countries and professional backgrounds including a flight attendant, a dentist, an accountant, an engineer and a chef, as well as people without college degrees. He considered it was a strong point the group being diverse.

**Self-efficacy.** This was the only category referenced by all 16 interviewed participants, totaling 116 quotations. For the purposes of this study, *self-efficacy* included any perception about program ownership and capability of participants to effectively teach SCSV and make decisions to improve their personal and family health. Often times, *promotores* reflected on their own experiences as they delivered the program; at other times, they elaborated on hypothetical situations, for instance, where someone else’s experiences were being discussed. Four primary codes informing *self-efficacy* emerged from the transcripts, each one looking at different facets of the *promotor* role. They were *knowledge, communication skills, personality attributes* and *decision-making*.

The experience of acquiring *knowledge* about cardiovascular health was expressed in a myriad of ways by *promotores*. Action verbs and descriptors like “new things”, “learn”, “teach”, “refresh”, “general knowledge” and “learn to teach” were all used to describe the process of assimilating new information or consolidating what they already knew. Some of them had had previous exposure to heart disease or general health interventions; some had not. Overall, participants denied major problems understanding the program’s content as they said it was designed with a plain language, and they also had the picture cards and scripts to deliver the class. *Promotores* like Leida said some things along the lines of “first you must learn before
teaching” or “learn first so you don’t make mistakes”, to make a point about mastering the program to be effective. Others gave specific examples of what they learned such as how to recognize the symptoms of a heart attack, how diabetes and heart disease are linked or how to get useful information from reading nutrition fact labels. Distinction between refreshing old knowledge and learning something new was made by Rafael: “I already ‘knew’ how to read labels of foods reportedly healthy. But now that I’m really aware of what I am reading, I realize that certain food may not have much sugar, but its level of sodium is pretty high, which is bad for you.” Participants elaborated on the notion they were often expanding on or refreshing heart knowledge they possessed before receiving Su Corazón, Su Vida. Sometimes, it was information totally new to them; yet, at other times, they had the theoretical foundation but did not know how to translate that information into practice.

Promotores’ perceptions on knowledge were informed for their current or past exposure to health interventions other than Su Corazón, Su Vida. Sometimes, such exposure was more of a formal nature, such as taking college courses or structured training; in other occasions, they referred to receiving information as clients of a health program abroad or as patients (or patient’s family members) on a health plan or medical practice. Notwithstanding the context, they reflected on different aspects of SCSV content and language, and how did they feel it influenced them. They also highlighted the difference between just possessing health-related knowledge and the “how-to”; Angela, for instance, commented that “I had a little bit of knowledge because my first husband was a doctor; but that doesn’t compare to the deeper understanding I just received.” She also said: “We used to eat healthy but now we’re eating healthier…the serving size, how much fat and sugar, doing exercise. I mean, it just sedimented knowledge we already had but we didn’t know how to apply it” (knowledge translation). Participants shared perceptions on how
they were building upon prior knowledge, often obtained from postsecondary studies, to get a better understanding of SCSV content. For example, Marie said of her students: “all people attending my classes were professional, educated persons. So, they thought they knew everything. But we all discovered several wholesome, informative points.”

SCSV’s focus on cardiovascular disease was brought up by participants as an advantage, as well as its plain language, simplicity of contents, and delivery without the use of technology (except the video). Another attribute included reaching a broader audience with varying levels of health literacy. For instance, Jose said that the program “does not include technical terms like the ones used by doctors; rather, they are meant to be understood by low literacy people.” Angela complained that traditionally “lecturers talk and talk, and people get bored or distracted. But this is not the case with SCSV, as flipcharts and videos quickly grab your attention, and keep you awake.” Marie said something similar about the use of “plain, not scientific language.”

Promotores also related to exposures to similar programs in the past, such as Alisa’s (Participant #6), who reminisced on her experience with other health interventions in her home country: “they used to deliver general talks on vaccinations, heart disease, diabetes…but here [with SCSV], we pretty much focused on the heart only. One can learn much more in this way.” Likewise, formal education experiences were shared, such as this from Norelys:

Back in Ecuador, I completed a vocational nurse training and learned quite a few things. But this [course] taught me so much more. I learned a lot of stuff when I was in the hospital. But they didn’t teach me about the heart in such a specific way as you guys did.

Participants like Alix also shared the program handouts with their health providers as a way of validating their knowledge: “The other day a nurse (from my insurance) came to check
on me and to explain things…but I already had this material and showed it to her. She said it was good; I ended up explaining it to her.”

Communication skills are equally instrumental in defining an efficacious promotor. A number of action terms were evoked by interviewees including “share”, “convey”, “transmit”, “be prepared”, “enable”, “be confident”, “perfect”, and “participate”, all of them implying some sort of transmission of knowledge to someone else in an effective way. Typically, the recipient of the information would be family members and close friends, whether they were attending the Su Corazón, Su Vida classes or not. Minorities in the U.S. typically face challenges to access affordable preventive care, and Latinos are no exception. They often encounter barriers related to language, literacy and culture that can affect the way they communicate with their healthcare providers. Interviewees frequently mentioned the importance of being assertive in their communication with doctors as a way to counteract those challenges. They gave a number of statements showing achievements in personal health communication. For instance, Alisa proudly shared she now is getting a lipid panel done twice a year. Nury’s added, “Each time I went to the doctor and they measured my blood pressure, I used to ask, ‘how is it’? And they said, ‘you’re good’. Now I inquire, ‘but what are the numbers’? And they tell me the BP numbers.” Norelys also stated, “I can protect my heart, my kidneys, the blood pressure…everything is getting under control. Just about last Tuesday I went to the doctor for my scheduled checkup. And they congratulated me; I told them it was because of this program I was making some changes.” Lastly, Laura said: “If I know my numbers (normal values of blood pressure, lab tests, etc.), then I can communicate better with my doctor.”

Participants like Leida placed emphasis on the importance of practicing or rehearsing, and doing the classes over and over to avoid mistakes and seek perfection. She stated that
making an error would leave participants with a wrong idea that could be replicated afterwards. Being a skillful communicator was compared to possessing conviction and prompting change in the people. In this regard, Marie confided that “…the most important thing is you knowing, and being convinced, that the message you’re going to deliver is true;” Roberto (Participant #9), a second-generation Latino, added: “I want to empower my future, my family…the entire Hispanic community.”

The opportunity and ability to share what they learned about cardiovascular disease was seen by promotores as a means of gaining experience and enhancing communication skills. Sometimes they paralleled sharing knowledge to a “duty” to be accomplished with people close to them. “Once I learn something, I have to share it; it happened with this class. I’d tell people I just received this valuable tool which is so important to prevent heart attacks and stroke; so, I want to share with them what I just learned”, stated Nurys. By sharing knowledge, participants said they felt committed and responsible for the health of their families (Laura: “most of us are parents, so we can cook healthy meals for our kids”). Yet in another case, it was stressed the importance of “leaving a lasting effect, a legacy for the next generation” (Rafael). Participants conceived sharing knowledge as a natural, necessary consequence of learning. For them, it was meaningless acquiring some skills and not being able to help someone to master them later.

Furthermore, communicating what they learned was frequently seen by respondents as connected to quality of life. Many of them stressed the importance of leading a healthy life regardless of its length as opposed to living many years in poor health. This was a recurrent thought exemplified with quotes from Ernesto (“…it’s important to tell them how to be better, how to avoid risk factors…to make them see a healthy life is a beautiful life”), as well as Leida’s (“…if I’m sick all the time, it’s not worth; but being healthy, I’d like to live a long life. That is
why you have to take care of yourself”). Finally, empowerment and personal satisfaction were considered natural consequences of communication as a proxy for self-efficacy. Luisa illustrated this way the power of health education: “…when people get to know, when people is taught, they get empowered”; Nurys reflected on the intangible yet meaningful rewards of community service: “…if one shares something one knows is going to help other people, one gets motivated…it feels good”.

Several interviewees brought up charisma as a key term when asked about desirable attributes of an effective promotor. They used words such as “caring”, “empathetic”, “passionate”, “contributor” and “motivator” to describe a person who not only communicates a program content but also does it effectively. One participant defined them as “being able to identify with people’s needs while learning from them.” Maura compared being charismatic to leading by example in many aspects like punctuality, discipline and healthy choices; she explained it this way: “If I’m getting late…let’s say, the class starts at 10:00, and I’m arriving at 10:30, folks just get disheartened.” Other participant (Roberto) said something similar: “I have to make those lifestyle changes on my life first; I must give the example.” The importance of role modeling was also stressed by Laura: “If you’re telling people, ‘do exercise 30-60 minutes, 5 times a week’, you ought do exactly that (laughter); same thing with food, and so on. Actions speak louder than words, you know.”

Participants saw motivation as an important personality attribute. In general, they felt motivated by being able to use the program to help their families, communities and the society at large. One promotor said his motivation was “feeling curious” about the program; another one got involved “for the sake of learning.” Yet another settled for practicality: “[the program] was being offered at the church.” Most participants, nonetheless, shared altruistic reasons for being...
motivated, such as helping out a relative (Nurys: “…because in this way I can help people in my family out, especially my mom”), community members (Jose: “I feel compelled to help other people, especially in my own community”), and at a broader level (Rafael: “…increasing awareness is always good, for myself, for the society, for everyone”). Luisa added: “I have many friends and acquaintances, so many Latinos close to me that I know could be benefited from this program.” In general, they expressed willingness to facilitate the program to people close to them as a means of staying engaged. This idea goes in line with SCSV tenets about promotores reaching out first to their closest circles, i.e. families and friends, and then expanding out to other community members. Marcelo put it this way: “as you are going to teach it, usually you go with your own small circle; and nobody knows your circle better than you.” In addition to the above reasons, participants mentioned getting to know people and networking opportunities as drivers for being motivated. Leida, for instance, shared: “I met a bunch of folks, we became friends…meeting new people that share your interests.”

Feeling passion was another descriptor for a promotor personality attribute. Participants may have found a way to translate this passion by engaging other people in healthy behavior activities like, for example, involving children and other relatives in cooking and exercising. Under this assumption, people can have fun as achieving health goals. For instance, Leida pressed forward: “it’s like cooking a meal everyone together, a salad, anything; thus, it motivates us, it’s funny and, at the same time, we all are exercising without realizing it.” There were also observations about having altruistic feelings as drivers for teaching the program like, for example, “service mentality” and “implementing knowledge for the societal benefit.” All in all, participants’ views about personality traits the “ideal” promotor should possess included being
charismatic, empathetic, committed to the program, interested in helping people and motivated to work with the community.

As with any other health preventative intervention, SCSV’s ultimate goal is to provoke behavior change on recipients, a lasting one, which can prove difficult in many cases. I selected decision-making as an index of self-efficacy because it is visible proof that individuals are on track to change their personal lifestyle. As Marie vehemently described it: “This is a life system. It’s not, in fact, momentaneous; you have to change all your customs, your way of eating and living.” Participants were invited to share any instance where they were able to modify their own behavior as a result of being exposed to the program. Action verbs like “going”, “changing”, “starting”, “doing”, “organizing” and “deciding” were used in this context. Furthermore, they found themselves making decisions to “tweak” the program during facilitation, like holding a healthy cooking session after class or inviting participants to read food labels at a supermarket during the weekend grocery shopping. Such an empowerment often transcended their personal and family lives into the willingness to share these newly acquired tools with someone else. As an example of empowerment, Jose shared: “…I’ve changed and now I am striving to walk every day. I am also reading food labels at the supermarket so I can see how much sodium or how many calories each product contains.” Then he added, “He who is well-informed will be better prepared to prevent [cardiovascular] disease.”

Other participants related to current health challenges within their families such as Angela helping out a 14-year old boy with high cholesterol while making out time to go to the gym. In either case, I looked at any examples where promotores felt confident enough to make decisions that would enhance their efficacy teaching the program. Some of them equated efficacy with commitment and responsibility to maintain acquired habits over time, especially when they
referred to being in charge of young children. Some felt they were responsible for their family health, especially in the formation of long-lasting habits. Laura, a young mother of a toddler, said about class participants: “…many are parents and can cook healthier meals for their kids. They may engage their kids in doing exercises, too; and so on.”

In some other instances, people felt they still were not ready to adopt new behaviors. Issues included cost and time constraints. Some promotores commented on the high cost of organic food or the lack of time to shop around for healthy choices and good deals. Laura reflected on a relative attempting to initiate behavior change. “My aunt is now adding less salt to the food and is eating out less often; because she loved to do it! It’s like she subconsciously already knew about those changes, but this class just enlightened her.” SCSV promotores were given Latino cookbooks as part of the class materials. Most of them reported using recipes of the book to prepare celebratory meals at the end of the workshops, while using the opportunity to reinforce positive behaviors related to healthy eating, exercise and doctor checkups. The same promotor added: “As I told them about cholesterol figures, the blood pressure…about diabetes. It’s like I was waking up participants to be mindful on their numbers, to visit the doctor, to ask questions…in summary, to be more responsible about their health.”

Promotores frequently measured program’ effect according to the impact they perceived on their lifestyle. From shopping groceries in a health-conscious manner to healthy cooking and snacking, to going to the gym, they made multiple statements in this direction. Nurys, for instance, said: “now I almost don’t add salt to my meals; so it did impact me”; and Jose added: “what I like the most about this program…I’ve learned to read food labels, to reduce portions, to eat less fatty meat.” Or, (Alisa), “I don’t use much sugar anymore, or just use brown sugar; and I only consume Himalayan salt.” Others reported drinking almond milk instead of dairy and using
sweeteners like Splenda® or Stevia® (Ernesto), or reducing fried food and taking the salt shaker off the table (Maura). Additionally, she started doing exercises and got to lose some weight. “I know I’ve shed a few pounds these days”, she said – “I know it because my clothes are loose; and I am doing an effort.” Conscious decision-making may involve adjustments in everyday life to achieve a work-life balance. For instance, Rafael, a middle-age promotor, offered an idea he put into practice: “My job is quite physical. If one workday is slow, I’d go to the gym to compensate; now, if I just worked 12-14 hours nonstop, then I’m done with exercise for the day.”

In other occasions, promotores organized activities involving their students to reinforce some health behaviors. For example, Luisa (Participant #7), a promotor from Colombia, took her students to Walmart to practice reading food labels. She reported it was an empowering experience as participants were able first-hand to put principles of health-conscious shopping into practice. Moreover, it gave them some ideas on how to make smart decisions when facing budgetary constraints too. Lastly, a point was made on the idea of reassurance or “taking control of one’s life” as a way to show self-efficacy. One participant reported feeling empowered to closely monitor her lipids, and another one (Jose) manifested keeping a journal of his daily food consumption. Then, they would report back in class on their success. There is something he said that perhaps transpired all the mental processes an individual goes through once initiated the behavioral change journey: “The first thing it happened when I received the training was to become conscious about my habits…and to realize all the wrong things I was doing.”

The above statements reflect participants’ intimate perceptions about learning to facilitate Su Corazón, Su Vida, and how those views may have influenced their self-efficacy as promotores. They addressed several deterrents found during program implementation, as well as
some factors that could enable it. Overall, perceived *efficacy* was commensurate with the level of *engagement* with the intervention. Self-efficacy was considered a function of a *promotor* basic cardiovascular knowledge, communication skills and personality traits, as well as their ability to initiate behavior change and form habits through sound decision-making. Moreover, interviewees reflected on the relevance that motivation, passion and role-modeling have in making them more effective.

**Table 4.4: First Analysis Categories and Codes**

<table>
<thead>
<tr>
<th>Category</th>
<th>Code</th>
<th>Descriptors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-efficacy</td>
<td>Knowledge</td>
<td>New knowledge, refreshing knowledge, translation (how-to), past experiences, validation</td>
</tr>
<tr>
<td></td>
<td>Communication (skills)</td>
<td>Assertiveness, personal health, communication as a duty, confidence/convincing power</td>
</tr>
<tr>
<td></td>
<td>Personality (attributes)</td>
<td>Motivator, role-model, charismatic, passionate, empathetic</td>
</tr>
<tr>
<td></td>
<td>Decision-making</td>
<td>Own health behavior, program activities, learn by doing, reassurance</td>
</tr>
<tr>
<td>Engagement</td>
<td>Habits</td>
<td>Awareness, readiness, repetition, maintenance</td>
</tr>
<tr>
<td></td>
<td>Relationships</td>
<td>Family members, friends, health providers</td>
</tr>
<tr>
<td></td>
<td>Features (program)</td>
<td>Free of cost, accessible, cultural/language, stats</td>
</tr>
<tr>
<td></td>
<td>Sustainability (program)</td>
<td>Funding, fidelity, interest/ownership, diversity, room for improvement</td>
</tr>
<tr>
<td>Facilitators</td>
<td>Content (program)</td>
<td>Breathing/relaxation techniques, physical activity, more nutrition content</td>
</tr>
<tr>
<td></td>
<td>Delivery (program)</td>
<td>Icebreakers, picture cards, handouts, video, small class, cooking demos</td>
</tr>
<tr>
<td></td>
<td>Operational</td>
<td>Secure <em>promotor</em> payment, provide refreshments, flexible schedule, classes held at participants homes</td>
</tr>
<tr>
<td>Barriers</td>
<td>Time</td>
<td>Conflicting schedules, no attendance, unpunctuality</td>
</tr>
<tr>
<td></td>
<td>Transportation</td>
<td>No car, does not drive, bad weather</td>
</tr>
<tr>
<td></td>
<td>Health literacy</td>
<td>Medical terminology</td>
</tr>
<tr>
<td></td>
<td>Language</td>
<td>English-speaking attendants</td>
</tr>
<tr>
<td></td>
<td>Medical issues</td>
<td>Doctor appointments, hospitalizations</td>
</tr>
<tr>
<td></td>
<td>Technology</td>
<td>Issues playing program video</td>
</tr>
</tbody>
</table>
Fostering good-quality relationships with family, friends and peers was considered crucial to remain engaged with the program; while promotores highlighted a number of characteristics of the program they considered positive, some changes were proposed, too. Both self-efficacy and engagement as measures of health promoter success are informed by key constructs of the social cognitive theory such as reciprocal determinism, observation learning and incentive motivation. Table 4.4 displays all codes and descriptors linked to the categories found during the initial analysis of the transcripts.

Second Iteration: Emerging Codes

As I went about reexamining the transcripts for more patterns related to the above categories, more codes started to appear, some related to self-efficacy, others pointing at emerging themes. In many cases, these secondary codes reflected what promotores perceived from their students during class delivery, whether by direct observation or by listening to their comments. I will present next the main findings stemming from the iterative analysis of transcripts under the efficacy, schedule, intergenerational, age and awareness codes, which are shown on Table 4.5 including the number of sources and quotations from participants.

<table>
<thead>
<tr>
<th>Code Name</th>
<th>Sources (n)</th>
<th>Quotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy</td>
<td>12</td>
<td>44</td>
</tr>
<tr>
<td>Schedule</td>
<td>13</td>
<td>37</td>
</tr>
<tr>
<td>Intergenerational</td>
<td>11</td>
<td>31</td>
</tr>
<tr>
<td>Age</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Awareness</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

**Efficacy and Awareness.** As they elaborated on the experience of teaching the program, promotores referred to what community members attending the class said about the process of
learning and their opinions on the intervention. As stated earlier, most of class attendants were family members and close friends, so there was an atmosphere of camaraderie allowing for a frank, open discussion on cardiovascular health. The same way promotores were asked during training, now their students were encouraged to share their views and experiences, as well as any success or struggles to incorporate aspects of the program to their lives. I was able to see in the transcripts, as well as during observation sessions, multiple examples of how these new learners approached the knowledge. In general terms, it was similar to the promotores’ approach, meaning many of them already managed the information and thus used the program as a refresher while for others was new knowledge. This observation from Laura about one of her students sheds some light on this point: “…she already knew about those [health behavior] changes, at least subconsciously; but it’s like this class enlightened her.” The same promotor advanced some strategies she utilized in class including icebreakers and inviting participants to share what they had just learned as well as some examples of its application. She also said that making small changes can go a long way, and that being too strict with participants can scare them away. At least this is what she observed in other health interventions she has taught in the past.

I decided to merge the awareness and efficacy codes as the former often influences the latter. That is, an “awakening” leading to being efficacious in changing health behaviors is typically informed by a person’s level of awareness. How important and relevant is for an individual a newly acquired information? Is this information front and center on their life? The response to these questions usually determines how willing that person to get engaged on lifestyle change is. Alix, for instance, commented on the effects of awareness in her family circle: “…I’m so happy my family was able to see, listen up and realize many things they didn’t
know before.” Other promotor (Angela) added that willingness to change is complex because many times “we evade, we don’t want to know…we don’t want to face reality.”

In addition to fostering meaningful conversations during class time, another way to calibrate efficacy was eyeing the degree to which participants were considering to initiate, or actually were already engaged, in behavior change. Again, Laura provided some examples about how her mother and other relative were reducing their visits to McDonalds as a result of getting involved with the program. “My mom is now adding much more greens to her meals; I mean, spinach, cauliflower, and broccoli. She also is putting less salt in the food…and eating out less, because she loved eating out!” The importance of making informed decisions was emphasized by several participants including Jose and Luisa; the latter one stated that “folks are more willing to make changes when they see the connection between healthy eating, exercising and good health.” She equated making such a connection with people being empowered. Jose made a similar remark about a link between healthy behavior and a feeling of wellbeing. Finally, the same way it was brought up during promotores training, repetition of contents and class activities was praised as a powerful learning tool for Su Corazón, Su Vida community participants during program facilitation. In summary, a possible relationship was described between promotores perceived self-efficacy as program facilitators, and community members’ efficacy as program recipients. As awareness usually predates efficacy, both two codes were merged for the purposes of further discussion.

**Schedule.** Most promotores deemed scheduling an important factor to ensure efficacy as they were delivering the program. This code was usually seen as a barrier that sometimes prevented them from initiating or completing the classes on time. Three different kinds of scheduling issues were raised by interviewees: class day, class time and class duration. In the
first case, all of the sessions but one were facilitated on weekdays as participants were too busy during the weekends. There was only one instance of a class being held on Saturday (evening). Norelys reported that her participants unanimously decided for that schedule. Regarding the time classes were delivered during weekdays, there were two promotores (Laura and Roberto) holding their classes in the morning. Most attendants for both classes were older adults. Other promotores such as Marie and Leida taught the program during the afternoon. They said people were more relaxed at home after lunch. “What’s wrong with mornings? Leida said – People is usually busy running errands.” A majority of promotores held evening classes, though. They found that after work sessions were well attended, and participants were usually willing to participate, although often feeling tired. Luisa shared: “I am teaching at night after people get from work; for that reason, my class has to be dynamic.” Despite of all the promotores facilitating classes in two-hour periods as stated in the methods, there were some calls to reduce class time to 1-1.5 hours because “some people get bored” (Norelys). In any case, interviewees worked around participants’ schedules to ensure the five 2-hour sessions were successfully completed.

**Intergenerational and Age.** A recurrent theme brought up by promotores was the perceived association between their cardiovascular risk habits and those of their parents. While genes were occasionally blamed for cardiovascular disease running in Latino families, they mainly referred to inherited unhealthy behaviors such as tobacco smoking. For instance, Marie, who is 70 year old, shared: “I smoked a lot at home; I am a baby-boomer and smoking was considered elegant, trendy…so my father and mother smoke, and so did I.” Angela, also born abroad, put it in similar terms: “…if both parents have poor life and eating habits, children usually follow lead.” Other participant (Rafael) was adamant to distinguish the influence of
unhealthy behavior from genetics: “It is often said cardiovascular disease is inherited; actually, family eating patterns and health behaviors is what is being inherited.” In other cases, families managed to get something positive from traumatic experiences involving heart disease through generations. This would work as a sort of “reverse observational learning” as participants drew from negative experiences; that is, an example not to be followed. This quotation from Rafael fairly summarizes it:

My grandpa was a coronary patient and died of a heart attack. He was not a drinker or smoker. It was mostly due to his wrong eating habits, everything was fried and fatty. So, we learned the effects of poor eating the hard way.

Alisa, who is Rafael’s wife, shared her family experience: “My father passed away due to a stroke. He had a genetic condition. Because of that, he always strived to teach us good eating habits and to stay active.” It is remarkable the role observational learning, a key tenet in the social cognitive theory, seems to play in modeling behaviors across generations. Most promotores were middle-age or even older adults who are parents (and even grandparents), but they still kept relating to family experiences going up one or two generations. It is also noteworthy to say only one U.S. born participant (Marcelo) reflected on this type of intergenerational dynamics by relating his own overweight and heart risk factors with his father’s ailments. The intergenerational spillover of learned health behaviors was highlighted by Ernesto:

Out of logical reason, we old people are going to die sooner than kids who are 20, 18, and 15 years old. I mean, who’s going to get benefitted the most? Them, because they are going to get better nutrition, they are going to exercise more, they are going to avoid tobacco, they are going to understand that a soda can contains nine teaspoonful sugar…
There were multiple references about *age*, which were used by *promotores* to contextualize their family health history, whether they were talking about their ancestors or descendants. In the first case, they reflected on the effect both genes and “inherited” lifestyle have had on their own health. They also commented on the importance of getting youth involved, both at home and school. Laura, for example, considered that children as young as middle-schoolers could benefit from the program. But the most noticeable reference was a perceived link between *age* and *quality of life*, in the sense that reaching an advanced age is not worthy if it is not lived in good health. Maura put it this way: “I don’t want to live until 80, if I am going to be confined to a bed, turned into a mess.” And Leida added, “It’s good to live a little more, as long as you’re healthy.” In summary, most *promotores* in this study, who are middle-age individuals having children (and sometimes grandchildren), perceived *self-efficacy* as related to their productive *age* and *intergenerational factors* influencing heart disease. Both codes were merged.

**Participant Observation: Promotores Program Training**

The five-session *Su Corazón, Su Vida* training of *promotores* took place at a community location (church). It was delivered by a certified community health worker with ample experience teaching the program. She gave valuable insights on her perceptions about the group make up and dynamics. I was present for most of the time the sessions were running to provide logistical support, and did not intervene in the training process. A Session Observation Checklist (Appendix F) was used to verify compliance of course activities as required in the *promotor* manual. Checklist’s twelve duties were included in three categories as follows:
1. To introduce the session (welcome guests, recap of last session, ask members to talk about their pledges, present agenda for the session);

2. To conduct the session (provide new information/handouts, lead group activities, ask questions, let participants ask questions about what they heard); and,

3. To review/close the session (emphasize important points, help members create a weekly pledge, share personal value to promote behavior change, thank members).

In general, meetings were uneventful in that attendants were usually punctual. Two participants dropped on the fourth session and one on the last session. The promotor trainer used to engage the group in a light physical activity, mostly stretching exercises, both at each class start and after the scheduled break. She complied with all the items on the checklist for every session, and always fostered a friendly, yet respectful environment, making people feel at ease. Nonetheless, there were three promotores who would usually remain silent. All of them were U.S. born (participants No. 3, 4 and 17). Participant No. 3 abandoned on the fifth session, and was interviewed afterwards as part of the data collection process. I noticed participant No. 17’s Spanish-language proficiency was slightly limited. Other two participants were especially talkative, which often forced the trainer to intervene to avoid the discussion to be seized; this gave shy or quiet participants more opportunities to speak. During sessions, and especially during small group activities, she observed some participants tended to mingle more with specific individuals; that is, certain spontaneous segmentation occurred, apparently based on gender and age range. For instance, two participants who were members of the church where the training took place would hang out together for the most part.

When questioned about the participants who dropped off the study, the program trainer considered they showed low interest and participation almost since the beginning, despite her
using some tactics to “bring them back.” A strategy she used when conducting role playing activities was to pair “opposite” participants according to their age, gender and temperaments like, for example, a talkative with a quiet promotor, so they would complement each other. Other than that, she perceived high motivation from most participants. At the end of the training, she conducted a review session to get promotores’ feedback on the program contents and delivery. Two issues that emerged were some participants’ long commutes for five straight weeks, and a suggestion to reduce the number of sessions to two or three, “for the sake of convenience and attendance.” These challenges were not raised during the individual interviews with promotores.

Participant Observation: Community Program Facilitation by Promotores

Six class sessions were randomly selected for observation to evaluate the interaction between promotores and their students during the facilitation of Su Corazón, Su Vida. Four of the promotores were foreign-born and two were U.S. born. Again, the 12-item Session Observation Checklist (Appendix F) was used to document compliance of course activities. Participant observation was conducted at promotores’ or participants’ homes, and covered different sessions of the program, as follows:

Observation No. 1: Promotor No. 1. Number of attendants: 5 (4 females, 1 male; age range: 21-83 y/o). Su Corazón, Su Vida session No. 3 (Be Heart Smart: Keep Your Cholesterol in Check/Keep Your Heart in Mind: Aim for a Healthy Weight). Checklist items met: 12/12. This observation session was conducted in the promotor’s apartment at a riverfront senior independent living facility. Six people (including the promotor) were gathered in the tidy, small living room for session 3. Attendants were her neighbors from the same building. She introduced them to the topics of the day and asked about their health-related pledges from the previous
week. Two of them had not completed their pledges related to taking walks outdoors, alleging bad weather. Some problem-solving was provided by other participants, such as walking inside the building and climbing the stairs. I noticed one of the two young women (age 21) hardly participated although the promotor kept asking her questions. Later, I learned this attendant was actually a college student, but her Spanish proficiency was limited. After covering some theoretical aspects about lipids, the promotor led a weighing session for participants to have their BMI calculated. Here, I realized another female participant looked uncomfortable as she glanced quickly at me while being weighed. Nobody said a word but she appeared embarrassed because of her overweight. Luckily, our host offered everybody coffee so we could feel at ease. I have to say, it is somewhat awkward to remain silent on the sidelines. In general terms, she covered all items in the checklist and at the end offered resiliency as a personal value. Sometimes she may have monopolized the conversation, especially when making continuous references to the way her family lives back in Cuba.

**Observation No. 2: Promotor No. 4.** Number of attendants: 3 (2 females, 1 male; age range: 31-66 y/o). *Su Corazón, Su Vida* session No. 2 (Take Heart: Say Yes to Physical Activity/Help Your Heart: Control Your High Blood Pressure). Checklist items met: 11/12.

Promotor No. 4 was born in the U.S. and works as a part-time hotel front desk clerk. She is raising a one-year old toddler. Attendants to the session included her husband, mother and aunt. The baby boy was also present because there was an issue with his baby care. She presented the agenda for the session but did not ask participants about their health pledges from the week prior. Among the group activities, they completed a short light exercise session, mostly stretches of legs and arms. This promotor has had experience teaching other health interventions like the Chronic Disease Self-Management program and seemed to lead the session effortlessly.
However, there were 2-3 short disturbances when the baby got agitated, and either his father or grandmother had to take him out. It is worth to mention a lively discussion about salt and high blood pressure initiated by the promotor’s aunt, who used to work for a non-profit health organization in the DC area. This lady essentially said people were inadvertently being led to consume more sodium because of lack of government regulation. I noticed their interaction was quite respectful. I also perceived the husband was a little impatient for the two hours of the session to pass. No mid-session break was offered.


Attendants to this SCSV class were middle-age individuals living in the vicinity of the promotor’s home. Her husband was also attending. It is noticeable that community participants in the observation sessions were mostly females. This promotor also has had some experience delivering other health promotion programs and seemed to seamlessly navigate the group dynamics. As this was the first session of the program, she started probing participants’ views on cardiovascular disease based on their own personal/family experiences. Actually, she first shared her own experience when she was hospitalized in a Colombia military hospital due to venous thrombosis during her childhood. What I observed next was participants being more open to share and discuss their conceptions about heart disease, especially after the video on heart attack clinical signs was presented. Something drawing my attention was a comment from the promotor’s husband (a Puerto Rican) about the machismo displayed by the video clip main male character, and its influence on delaying a timely diagnosis of heart attack. The promotor
addressed all the items in the checklist, including delivering the handouts on cardiovascular disease risk factors.

**Observation No. 4: Promotor No. 10.** Number of attendants: 5 (3 females, 2 males; age range: 20-59 y/o). *Su Corazón, Su Vida* session No. 4 (Protect Your Heart: Take Good Care of Your Diabetes for Life/Make Heart Healthy Eating a Family Affair). Checklist items met: 10/12.

Originally from Ecuador, this *promotor* is active in her church; so all participants on her class were churchgoers. She admits she is a little shy and decided to teach the classes at her home. She also was interested to know if the program could be facilitated by two *promotores* at once. As she had some nursing training at her home country, and is a diabetes patient herself, she provided a thorough review of the disease symptoms and lab tests, way beyond what is included in the program flipcharts. At some point, she realized she had gone too far so she came back to explain the relationship between blood sugar and heart disease. There were two items of the checklist that were skipped, i.e. review of the previous class and recapping the current session.

**Observation No. 5: Promotor No. 13.** Number of attendants: 3 (2 females, 1 male; age range: not provided data). *Su Corazón, Su Vida* session No. 5 (Eat in a Heart Healthy Way—Even When Time or Money Is Tight/Enjoy Living Smoke Free/Review and Graduation).

Checklist items met: 11/12.

This *promotor* only had 3 students in the second iteration of her class held at a participant home, in the same neighborhood where she lived. It was the only observed workshop not facilitated at a *promotor* home. Community members ages were not provided, but all three seemed to be in their mid-forties. A week earlier, the class had visited a local supermarket to read food labels, so they started by commenting on the experience. I noticed the *promotor* did not address the topic of
tobacco nor did she give participants handouts. She later explained to me that none of their students smoked, so she decided to use the time to reinforce concepts of healthy food options, especially because this was the last session. She also said she struggled to find enough participants because she recently relocated from Venezuela, and her local contacts were too few. It drew my attention that the group had prepared one of the recipes in the cookbook for the graduation party. Participants completed the heart knowledge posttest before the meal.

**Observation No. 6: Promotor No. 15.** Number of attendants: 5 (2 females, 3 males; age range: not provided data, except a 34 y/o male). *Su Corazón, Su Vida* session No. 5 (Eat in a Heart Healthy Way—Even When Time or Money Is Tight/Enjoy Living Smoke Free/Review and Graduation). Checklist items met: 12/12.

This session was conducted at the *promotor’s* home in a middle-class neighborhood, and it was attended by two couples and the *promotor’s* 34-year-old son. All the attendants had college degree (one of them was a nutritionist) and there was a long Q & A session. The *promotor* is a retired Colombian flight attendant who owned a restaurant in Tampa Bay for about 15 years. She exhibited great skills in leading the discussion and, in several occasions invited me to partake, which I was not supposed to do. She covered all the items in the observation checklist. The session extended well beyond two hours, especially because she had cooked a special graduation meal.

**Interviews of Participants Who Dropped off the Study**

From the four participants dropping off the study during training and facilitation, I was able to contact and interview two of them using a six-item open-ended questionnaire (Appendix G). Major points of their feedback are presented here.
Interview No. 1: Participant No. 3. This was a 33-year-old U.S. born male who abandoned the study before the end of training and did not facilitate the program. He was initially enthusiastic about the experience, describing it as “positive.” He even wanted to make major lifestyle changes such as to quit smoking and drinking. When asked about some barriers that may have prevented him from completing the training, he pointed out at a “loss of commitment” due to undisclosed personal health problems. He denied to have had any issues with the content of the program or the way it was delivered. In his opinion, the trainer was very informative, and the workshop was “very clear and well taught.” There were some challenges related to scheduling, though. He did mention feeling overworked because, in addition to his weekday job, he had committed to repair a friend’s fence on the weekends; thus, he would usually leave class early, and could not make it to the last class (and did not come back afterwards).

When asked about some things that could have been done differently to improve his experience being trained and then facilitating Su Corazón, Su Vida, he suggested a more flexible schedule should be offered, but no other improvements were needed. He said his abandonment was “just a personal choice made by poor decisions.” Finally, his overall view about the program was positive, by allowing people “to have a healthy life as long as you follow its principles.” No disadvantages were reported. He added, “[My decision] was not a reflection of the program itself. Apparently, I wasn’t ready to make the necessary positive changes for life.” He concluded by not ruling out his participation as a Su Corazón, Su Vida health promoter in the future, once he can solve his “personal issues.”

Interview No. 2: Participant No. 18. This was a 66-year-old born abroad male who abandoned the study at the end of the training and did not facilitate the program. His views on Su
Corazón, Su Vida were positive overall as “even people with low literacy can obtain good knowledge, form criteria and improve their quality of life.” He practiced dentistry for many years in his home country, and considered the program gave him “a refresher” on cardiovascular health. He made a point about the difference between just learning something and applying that knowledge in one’s life. Two major barriers he mentioned that prevented him from teaching the program were “limited social connections” and “scheduling.” His family (wife, two daughters and sons-in-law) migrated to the U.S. less than two years ago and have not had the time or opportunities to befriend many people. “We’ve got a too small social circle over here”, he alleged. He would like to expand his social network but “everyone seems so busy over here.” Such a struggle also relates to scheduling issues, as his relatives were supposed to be his first students but “they are so busy the whole time, overworked…and you have to pay the bills, you know.” So, he ended up having informal conversations with his family about what he learned, but a class was never initiated.

Another point he made about challenges he experienced was related to time management or “time relativity.” Essentially, he perceived differences in the pace things get done here in relation to his home country. “It’s like everything here is going on faster”, he pointed out. In general, he deemed Su Corazón, Su Vida training a coherent, positive experience, with “content adequate and simple enough so people with limited knowledge about heart physiology can understand.” An advantage he found is the program not including any “fancy” terms, and was adequate for a middle school, “even an elementary” literacy level. There were no reported issues with the instructor style or the way the program was delivered, either. Finally, he said the program is a valuable asset because it addresses not only heart disease topics but also more general themes like diabetes, exercise and nutrition; he would be interested in working as a
promotor in the future, providing he had more resources (time, money) and social mobility including meeting more people. “Solo necesito los medios para vivir (I just need the means for making a living)”, he concluded.
CHAPTER FIVE:

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

This section will discuss the research findings in the context of similar results from published literature. First, a brief refresher of the study protocol will be presented.

Summary of Research Protocol

*Su Corazón, Su Vida* (SCSV) is a small-group behavioral health intervention developed by the federal government and designed to be delivered by lay health leaders either in English or Spanish language. It does include basic concepts of cardiovascular disease risk factors, clinical manifestations as well as prevention and control measures through lifestyle modifications. SCSV (and its parent initiative, Health for Your Heart) also includes an evaluation component, and it encourages the formation of new community health workers (CHWs) or *promotores* under the *train the trainer* model. The literature review showed this program has been successfully implemented in Latino populations throughout the country, especially in border communities. For instance, the Project HEART using the SCSV *promotor de salud* curriculum in Texas, achieved improved self-reported behaviors related to weight control and unhealthy food consumption in addition to heightened perception of CVDs risk factor susceptibility and benefits of behavior change (Balcazar et al., 2010). Modified versions of SCSV have also been implemented in Latino communities elsewhere including Mexico (Balcazar, Alvarado, et al., 2009; Balcazar, Byrd, et al., 2009; Balcazar et al., 2010; Balcazar et al., 2015; Balcazar et al.,
Enhanced awareness about healthy behaviors has been reported as a lasting benefit of SCSV. However, there are limited research studies exploring promotores’ lived experiences as they teach Su Corazón, Su Vida to other community members. Such experiences can be instrumental as markers of promotor self-efficacy and engagement, as well as program success. To meet this perceived need, I conducted a mixed-method study exploring changes in heart disease prevention knowledge outcomes in Latinos trained as promotores, and perceptions of promotores’ self-efficacy and engagement with the program. For the confirmatory component of the study, participants took the heart knowledge pretest, and then were trained to facilitate the course to other community members. Then promotores took the test again which allowed the quantitative before-after comparison to be made. Finally, in the exploratory portion of the study, the promotores completed individual interviews focusing on their lived experiences, program facilitators, and barriers experienced. Table 5.1 displays a summary of findings from the confirmatory phase.

Confirmatory Phase

Heart Knowledge Outcomes

For this part of the study, I confirmed previous research (Balcazar, Alvarado, et al., 2009; Balcazar et al., 2006; Balcazar et al., 2010; Balcazar et al., 2016; Staten et al., 2012; Staten et al., 2005) regarding the benefit of Su Corazón, Su Vida within the targeted sample community. A statistically significant difference between receiving the proposed education intervention and increased knowledge about heart disease in promotores and community members was observed (see Table 5.1). Overall, promotores experienced higher mean score gains in the posttest than community members did (3.4 vs 2.3 points, respectively). However, 2 promotores (participants
No. 11 and 17) actually obtained lower scores in the posttest (-13.0% and 4.4%, respectively). In this regard, it was conspicuous that participant No. 11 only had two students in her class (who actually performed well in the test). Participant No. 17 had three students, but he did not report test scores; also, his Spanish-language proficiency was a limited. Both *promotores* were born in the U.S.

**Table 5.1: Summary of Results – Confirmatory Phase**

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Summary Findings</th>
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</thead>
<tbody>
<tr>
<td>1. What factors relate to heart health knowledge scores change in Latino <em>promotores</em> and community members?</td>
<td>There were differences in heart knowledge difference score for <em>promotores</em> ($t(15)$ = 3.967, $p$ = .001; 95% CI: 1.561, 5.188). There were differences in heart knowledge difference score for community members ($t(31)$ = 3.337, $p$ = .002; 95% CI: 1.093, 4.532). There were differences in heart knowledge difference score for <em>promotores</em> AND community members ($t(47)$ = 4.798, $p$ = .000; 95% CI: 1.742, 4.258).</td>
</tr>
<tr>
<td>1.1 Is there any difference in mean score change based on <em>promotores</em>’ age?</td>
<td>There were no differences in heart knowledge difference score based on age ($r$ = .107, 95% CI: -.371, .513).</td>
</tr>
<tr>
<td>1.2 Is there any difference in mean score change based on <em>promotores</em>’ gender?</td>
<td>There were no differences in heart knowledge difference score based on gender ($F(1, 14)$ = .41, $p$ = .53).</td>
</tr>
<tr>
<td>1.3 Is there any difference in mean score change based on <em>promotores</em>’ education level?</td>
<td>There were no differences in heart knowledge difference score based on education level ($F(3, 12)$ = 2.93, $p$ = .08).</td>
</tr>
<tr>
<td>1.4 Is there any difference in mean score change based on <em>promotores</em>’ primary language spoken at home?</td>
<td>There were no differences in heart knowledge difference score based on primary language used at home ($F(1, 14)$ = .002, $p$ = .97).</td>
</tr>
<tr>
<td>1.5 Is there any difference in mean score change based on <em>promotores</em>’ place of birth?</td>
<td>There were differences in heart knowledge difference score based on place of birth ($F(1, 14)$ = 7.35, $p$ = .02).</td>
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There are studies reporting favorable changes in cardiovascular knowledge (Albarran, Heilemann, & Koniak-Griffin, 2014; Balcazar et al., 2010; Balcazar et al., 2016; De Heer et al., 2012), but they usually focused on either *promotores* or community members receiving the
program; I measured knowledge outcomes in both groups. A study by Koniak-Griffin et al. (2015) in Latinas with overweight who received Su Corazón, Su Vida intervention during 8 weeks demonstrated a significant increase in heart disease knowledge. They also reported positive changes in some health-related behaviors and cardio-metabolic outcomes like waist circumference. There are several intervention studies showing significant improvement in perceived heart disease awareness, motivation and knowledge of healthy behaviors (Balcazar et al., 2010; Trudnak et al., 2011). Another study by Balcazar et al. (2005) examined the implementation process and outcomes of the SCSV curriculum finding positive changes in awareness and increased screening and community referrals to healthcare providers. Most of these studies typically reported outcomes from the community members’ perspective, not promotores’.

Promotores born abroad obtained significantly higher gain in heart knowledge as compared to U.S. born promotores. Considering this was a small sample, it is hard to provide a valid explanation. However, cultural variations across groups might help elucidate such differences. Fostering an adequate cultural environment for learning heart-health information has been proven instrumental to achieve increased awareness and behavior change. In this regard, culture composite of “histories, attitudes, behaviors, languages, values, beliefs and uniqueness, which distinguish each racial or sub-cultural group in a society” (Kroeber & Kluckhohn, 1978) could help provide an explanation for the differences in knowledge seen between U.S. born and foreign-born promotores. Culture entails the way people communicate such values, perceive disease and learn new concepts and behaviors. While Latinos constitute a conglomerate having the Spanish language in common, there are regional and country variations. Moving to the U.S.
supposes a major cultural shock. However, these first-generation Latinos can still maintain strong bonds with their countries of origin, including cultural practices and language preference.

Those family and social bonds might act as a “protective” element against stressors and risk factors for chronic disease. This phenomenon, known as the “Latino paradox” tries to explain why migrants from this group keep showing better health outcomes and higher life expectancy than their white non-Hispanic counterparts for a certain time after arrival despite being exposed to unhealthy lifestyles in America. Two possible explanations have been proposed for such an apparent contradiction: 1) Selective, health-related migration, which would make likelier healthy Latinos moving to the U.S.; 2) Social and cultural protective mechanisms resulting in the adoption of healthy lifestyles (Goldman, 2016). I found foreign-born Latinos in my study to be concerned about their health status and how to take measures to remain healthy. During interviews and facilitation observation sessions, they reiteratively remarked the importance of leading a healthy lifestyle; even participants who dropped off the study expressed similar remarks. Such a concern could also explain an increased willingness to embrace and assimilate the program curriculum, thus performing better in the knowledge test. Su Corazón, Su Vida features many personal and family scenarios, such as role-playing, most Latinos would relate to. In conclusion, participants born and raised in Latin American countries may have found the program curriculum more interesting and easier to learn; U.S. born promotores, on the contrary, might have had a harder time trying to assimilate the concepts due to the acculturation process “pulling” them towards the mainstream culture and away from Latino traditional values and beliefs. Under this hypothesis, Spanish language proficiency would be of limited importance. However, language proficiency could also play a role. More research is needed to explore this relationship.
Role of Age, Gender, Education Level and Language Spoken at Home

Similar to findings already published in the literature (Albarran et al., 2014; Sánchez et al., 2014), there were no differences in promotores heart knowledge acquisition based on age, gender, and education level. Preference of language spoken at home did not seem to mark a difference, either. This is fairly consistent with findings from the literature about demographic factors not playing a big role in lay health workers effectiveness, as long as they share demographic characteristics with their students. According to the literature, CHWs in the U.S. are typically middle age women (APHA, 2009; DHHS, 2007). Notwithstanding being recruited through snowball sampling based on criteria (Spanish-speaking or bilingual, +18 y/o, both sex, can read/write, local residence), participants in this study were older (52 years average; range 32-73) than those reported in the literature (30-50 years). Also, two-thirds of the promotores were females compared to about 80 percent among U.S. CHWs (DHHS, 2007). It is also remarkable that most of the community members attending the classes were females. It makes sense women are more likely to become health promoters and attend health and wellness classes, as they usually play caretaker and educational roles in their families. Such a custom is particularly desirable and even expected among Latinos, where females typically adopt maternal and nurturing duties, or often can be single parents. Women usually perceive themselves as caregivers in the Latino culture, where traditionally one of the daughters in a family was expected to stay single to tend to her aging parents. Interviewed female participants frequently referred to such a nurturing role within their families.

It may be difficult to demonstrate age (as an isolated variable) to have an effect on the acquisition of knowledge necessary to deliver health education interventions. Our results only showed a weak positive correlation between the variables age and heart knowledge acquisition.
There was an increase of about .1 points in posttest scores per each year of age increment. Even though “natural” changes in knowledge acquisition skills might be expected as people age, it seems effectiveness in delivering health promotion interventions such as SCSV depends more on perceived self-efficacy, motivation, engagement and cultural adequacy factors than on biological age. Actually, the two best performers (100% score) in the knowledge posttest are 70 and 53 years old. In this sense, it could be theorized that successful health promoters can be benefitted from the experiential “emotional intelligence” that naturally comes with aging.

I found no significant differences in post-program heart knowledge based on education attainment. Promotores in my study had varying levels of formal education but no clear relationship was observed with test scores in any direction, i.e. high/low education level with high/low scores. There is limited literature demonstrating a direct relationship between CHWs’ education level and their ability to learn due precisely to the heterogeneity of backgrounds and levels of literacy in this conglomerate (Lehmann & Sanders, 2007; Sánchez et al., 2014). Such a variation is also reflected in the proposed definitions and descriptions of who CHWs are. Most attempts to provide a unitary operational definition advocate for less formal milestones such as CHWs having shorter training than professional workers (WHO, 1989) or demonstrating an “unusually close understanding of the community served” (APHA, 2009); promotores should also possess “an in-depth understanding of the community culture and language…and training which is of shorter duration than (mainstream) health professionals” (Olaniran et al., 2017).

From a formal instruction standpoint, federal regulatory organizations such as the Bureau of Labor Statistics suggest having at least a high school diploma and completing a brief period of on-the-job training (DOL-BLS, 2020). There is also a Florida state specific certification program for CHWs, requiring a high school diploma/general equivalency degree (GED), 500 hours of
work/volunteer experience, 30 hours of content specific training and a knowledge exam (FCB, n.d.; FCHWC, n.d.). Over a half of my research participants had received at least postsecondary education, and only one individual attended just elementary school. Several of them showed interest in becoming certified CHWs. While being interviewed, most participants described their motivations to learn and teach Su Corazón, Su Vida in terms of helping themselves and someone else’s to lead a better life, as expressed by this statement from Rafael: “any person in the community can be prepared...just by knowing the risk factors and being willing to serve, to spread the knowledge.” Another participant added: “when you learn something positive, you may want to share it.” That very same sentiment was echoed by other participants. Thus, it appears that, in the context of this study, fostering a service culture in the community served, and acting in the public’s interest, are deemed more important features of a good promotor than earning a college degree.

Finally, there was no significant association between heart knowledge difference outcomes and primary language spoken at home. There were certainly some U.S. born participants who would feel more comfortable being trained and teaching in English, but the promotores were bilingual and made the facilitation sessions in the Spanish language. All the program materials are available in both languages, and the flipcharts present the information, including facilitator scripts, in English and Spanish. Promotores are trained to repeat or paraphrase that information when explaining the charts to the audience. By being able to see the same information in the two languages, promotores may have used this feature as a vantage point to learn and present the materials in an effective way. Language barriers can become a big deterrent in the learning/teaching process (Sánchez et al., 2014). In fact, one participant who abandoned the study in the early stages reported feeling “uncomfortable” while facilitating the
program in Spanish even though he possessed an average working knowledge of the language. Moreover, another promotor (Nurys) reported having issues with a student’s spouse only speaking English. During the direct observation of a class facilitated by Leida, I also witnessed a female participant with limited Spanish proficiency. At certain times, bilingual participants attending classes may find convenient to keep switching language during the session, which can prove challenging for both promotores and other attendees who are not proficient in both languages. Thus, it is crucial to adequately screen in advance people signing up for the class just to ensure homogeneity in language and cultural preferences.

**Exploratory Phase**

**Latinos in Context – Uniqueness vs Otherness**

Participants in this study came from four Latin American countries in addition to those who were born in the United States. Notwithstanding the expected variability in terms of nationality and regional differences in culture, they showed some commonalities related to how cardiovascular disease and its risk factors are perceived. There were multiple references to the relevance Latino culture gives to the heart as a symbol of life, a source of feelings…and also, a source of concerns. Those references seemed to transcend generational boundaries as participants shared diverse situations where they experienced the effects of heart disease, whether by themselves or through family members alike. Irrespective of their country of origin, age or education background, they reflected on the impact CVDs may have on family dynamics, including suffering and financial hardship, as well their lived experiences while teaching the program. Table 5.2 shows a summary of findings from the exploratory component of the study.
Heart disease was frequently seen as inevitable or fateful, something you learn to expect and to live with, especially because of its morbidity and high treatment costs. While I did not delve in the spiritual realm of participants’ beliefs, some traits of Latino traditions might help understand why some participants believed heart conditions hopelessly ran in their families like a “prophecy.”

Table 5.2: Summary of Results – Exploratory Phase

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Summary Findings</th>
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<tr>
<td>2. Assess the barriers and facilitators influencing perceived program engagement and self-efficacy in Latino promotores teaching the heart disease prevention program <em>Su Corazón, Su Vida</em></td>
<td>Latino culture’s perceived <em>uniqueness</em> (as opposed to American culture’s <em>otherness</em>) was assigned a crucial role in the way CVDs and their risk factors and negative effects are conceived. Uniqueness and intergenerational factors influenced program engagement and efficacy. Perceived <em>barriers</em> related to time constraints, transportation, work demands, low literacy, language and medical issues. Perceived <em>facilitators</em> included adding icebreakers and other activities; having incentives (food, funding), as well as small group classes positively impacted program engagement. Perceived <em>engagement</em> informed by forming new health habits, better interpersonal relationships and certain program features. Perceived <em>self-efficacy</em> was informed by promotores’ heart knowledge, communication skills, personality attributes and decision-making.</td>
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Despite seeing a decrease in recent years, Latinos are still considered a profoundly religious people, particularly Roman Catholics (Taylor, Lopez, Martínez, & Velasco, 2012). Religion can be determinant in the way individuals conceive their lives and destiny, that is, how life and death are perceived. Most Christian traditions hold the assumption of suffering as a means of achieving redemption. Under such premise, people may perceive serious diseases (e.g. CVDs) as inevitable, which may result in not taking appropriate action to prevent it from occurring. It is important to acknowledge the burden these beliefs may impose on the delivery
and effectiveness of education interventions like *Su Corazón, Su Vida*. In fact, inaction due to perceived unavoidability of disease might have prompted one of the participants to abandon the study, allegedly because of undisclosed “personal health problems.”

Another aspect I would like to remark is the concept of otherness as evidenced by the phrase *our countries*. Several participants, especially first-generation Latinos, used it to point out at any perceived differences in cultural preferences (e.g. food, music), the way things get done (e.g. time management and relativity), or any values or beliefs they cherish. Essentially, it is comparing what they found in the U.S. to what they used to have in their nations of origin. “In our countries, we’d have plenty of time to visit family on the weekends”, would be an example. In fact, I have used expressions like this myself many times. *Promotores* resorted to similar expressions when they wanted to highlight any given facet of Latino uniqueness in the midst of American mainstream culture. Sometimes it was in the context of complaining about high healthcare costs in America or explaining the difficulties in accessing services in another language and culture. Sometimes they were discussing the barriers faced when implementing *Su Corazón, Su Vida*. For instance, one *promotor* struggled to schedule the classes because he found time was somehow conceived differently in America. *Promotores* rarely mentioned their specific nation by name, just used the phrase *our countries*. I interpreted this trend as a reaffirmation of the Latino uniqueness, which may have repercussions on the level of ownership and acceptance of any health intervention.

Uniqueness was also evident as participants talked about food preferences in Latinos. Different cultures typically give food patterns a distinctive meaning. From meal preparation to enjoyment, each ethnic group expresses in this way its preferences and values. Also, ethnocentrism causes each culture to deem their food as unique, “the best one”, in spite of having
been influenced by other groups. Latino and Latin American food is no exception; historically, it has received influences from a number of peoples, from the Iberian Peninsula to Arabic countries, from the African continent to Amerindians. Such a potpourri of flavors, colors and textures has resulted in a rich mixture of dishes Latinos usually feel proud about. Interviewees frequently shared their concern for having been “forced”, or driven, to change many of their traditional eating habits, all for the sake of convenience and low cost. It is well known the influence unhealthy eating has on the risk of heart disease. Here, again, the phrase *our countries* was often voiced to exemplify the powerlessness or inevitability of being exposed to a high risk of heart disease due to having fewer healthy options on the table.

**Determinants of Promotores Self-Efficacy and Engagement**

As participants went on to facilitate the program, they found a number of challenges potentially affecting their efficacy as *promotores*. Some of the challenges can be seen as systemic issues, i.e. they were beyond *promotores’* control. For instance, low health literacy or poor Spanish proficiency of participants, as reported by several *promotores*. While the program was carefully designed to cater to “average” Latinos, there is a wide variation in the target population in relation to general literacy and health literacy levels. *Su Corazón, Su Vida* includes a minimum vocabulary to accomplish its goal of explaining how the human heart works in the context of the circulatory system. It also includes basic terms to present altered function such as, for instance, “good cholesterol” and “bad cholesterol.” There are many others, not so simple, medical terms like coronary arteries, heart ventricles, angioplasty, stents, glucose, sodium, and so on, which can prove difficult for some participants to understand. At least two *promotores* reported comprehension barriers due to attendee’s low literacy, although they made efforts to assist the struggling participants who later caught up with the group. It is expected to have
varying degrees of literacy in a group, and actions can be taken to better screen participants and “homogenize” the group before the class’ start.

Time and transportation issues, prevalent during course facilitation, were evidenced in the initial analysis of data. Scheduling was an emerging code during the second iteration of the analysis. Most promotores referenced these challenges, but they found ways to work around them. Su Corazón, Su Vida was designed to be delivered in small settings such as households, and promotores took advantage by facilitating it in their own homes or at a nearby household, almost always having family members and neighbors as attendees. Concerns about timing and scheduling were also raised by two participants who dropped off the study. Whether attributed to work demands or just by being unable or unwilling to reconcile dissimilar schedules of class participants, they saw it as an unsurmountable challenge that prompted them to quit before program facilitation. One of them equally reflected on differences between the U.S. and his home country in the way time is conceived as a resource. Such a time “relativity” is usually shocking for some Latinos coming to the U.S., when they see stark differences in the punctuality expected from people attending an event, for instance; it is, in fact, seen as amusing (not for the host!) as invitees to a party arrive over one hour late, and then expect the party to prolong two more hours. For this participant, having to keep the pace of his students’ and his own differing schedules was a major concern. This perception goes back to the construct of otherness expressed in the phrase “in our countries.”

Most classes were held at after work hours to accommodate participants’ needs. Teaching near home seemed to improve attendance and fostered trust among attendees, in addition to making easier the delivery of the course content as promotores felt more confident. This was
patent in the case of *promotores* facing transportation challenges or difficulties to recruit participants, such as Alix, who is new to the Tampa Bay area. She moved from Venezuela less than two years ago and is still struggling to build a network of acquaintances; “I have virtually no friends here”, she said. One of the participants dropping off the study also cited having “a too small social circle” as a major reason to quit. This kind of social isolation can have devastating effects on the reported advantages the Latino epidemiological paradox affords; it may also affect *promotores* perceived efficacy to teach the program.

As they worked around barriers during program implementation, participants saw multiple opportunities to improve their experience as *promotores*. In addition to teaching at home or at nearby locations with flexible schedules, and offering refreshments, they put into practice a number of class activities such as weighing sessions, cooking demonstrations and food label readings at local supermarkets, as well as proposed several improvements to be done to the program. Some future initiatives aimed to change the program curriculum by eliminating topics (e.g. cigarette smoking), adding others (e.g. breathing and relaxation activity), or modifying yet others (e.g. expanding nutritional information, shortening or splitting the video). In actuality, one of the *promotores* suppressed the tobacco activity because no students in his class were smokers, but no other major modifications were made. During training sessions, there were also proposals aimed to shorten session duration (to 1-1.5 hours) and to reduce the number of sessions (to 2 or 3). *Su Corazón, Su Vida* has been delivered successfully and shown positive outcomes following different class schedules such as 4 weeks (Balcazar et al., 2016; Trudnak et al., 2011), 8 weeks (Albarran et al., 2014; Balcazar et al., 2010; Medina et al., 2007), 9 weeks (Balcazar et al., 2016; Sánchez et al., 2014), and other schedules. The 5-week schedule worked well in my study in terms of attendance (over 80%) and low attrition (14%). While doing substantial changes to the
curriculum might compromise fidelity in the program delivery, *Su Corazón, Su Vida* intervention allows for certain substitutions and optional activities to be undertaken with the aim of keeping the interest of participants, and as long as the original message about CVDs prevention is being conveyed. During the six observation sessions, three *promotores* complied with all twelve required activities in the checklist; the remaining three *promotores* missed 1-2 indicators.

Teaching the program was deemed rewarding by participants in my study. In addition to perceiving benefits to their own health status and quality of life, they viewed it as a tool to empower people around them. From a personal empowerment standpoint, there were multiple references to perceiving increased awareness on heart disease risk prevention as well as steps being taken to initiate new health habits. There are several studies reporting increased awareness and positive behavior change on recipients of *Su Corazón, Su Vida* or similar interventions (Balcazar et al., 2010; Balcazar et al., 2012; Brown, Vasquez, Salinas, Tang, & Balcázar, 2018; De Heer et al., 2012; De Heer et al., 2015; Koniak-Griffin & Brecht, 2015; Sánchez et al., 2014). For instance, De Heer et al. (2015) reported “modest improvement in CVDs risk factors and substantial improvement in health behaviors” as a result of delivering the *Mi Corazón, Mi Comunidad* (MiCMiC) health intervention (based on *Su Corazón, Su Vida* curriculum). Most U.S. studies involving behavior change secondary to the implementation of *Su Corazón, Su Vida* have been conducted in the Southwestern states, where Mexican immigrants and Mexican-Americans constitute a majority of Latinxs. Notwithstanding my research not including individuals of Mexican heritage nor focusing on behavior change measures, it obtained several important findings. Participants experienced increased heart health knowledge, enhanced awareness on heart disease risks, and saw the program as a starting point to continue working toward specific health goals while improving their efficacy to teach it.
“An awakening”: that was the term a promotor used to describe the impact the intervention caused on his life. Participants offered many strategies they were using to incorporate the program’s principles into their daily lives. Also, socializing with new acquaintances joining the class, and involving family members in the activities were considered second nature. This is an example of reciprocal determinism, as promotores perceived they were influencing others and being influenced by others at the same time. It seems, then, that promotores equated their engagement with the program to the ability to apply its tenets in their lives while incorporating family and friends in the process. In other words, their willingness to remain involved as Su Corazón, Su Vida promotores drew certain parallelism with a perceived usefulness and practical application of the intervention on whom mattered the most to them. A link can be glimpsed here between these constructs and the self-efficacy concept of the social cognitive theory. As long as program facilitators and recipients perceived the program as possessing an intrinsic value, they would remain engaged, both personally and collectively.

Participants made no difference between learning and applying knowledge: they just saw it as a natural continuum. Seeing real-world usefulness of what they learned on their own lives, or someone else’s lives, was perceived as a reaffirmation, or reassurance, of their efficacy as promotores. Leida, for example, made a witty remark about health behavior change she observed on her students: “…whenever I get to visit them, I notice their food methods have changed, their diet has changed. I don’t say anything, but I am watching them, what they’re eating, what they’re doing, what they’ve learned.” Potential benefits from adopting healthy behaviors was emphasized by most participants, seen as a way of improving quality of life in the long run by taking baby steps every day. They elaborated on how difficult it was to undertake major lifestyle changes, but it was easier to perform small, doable changes, one at a time. Maura, for instance,
expressed that she “liked the program because, by making small changes in a simple way, you can enhance your health, your heart health.” Such a reward mechanism is a form of the incentive motivation construct of the SCT which, in turn, informs self-management and self-efficacy.

**Bringing Behavior Change Theory into the Field**

Most findings of this study were informed by constructs of the Social Cognitive Theory (Table 5.3) and the PRECEDE-PROCEED model (Figure 5.2). While there were not previous studies about the delivery of *Su Corazón, Su Vida* being specifically supported by these theoretical frameworks, I found them to match closely with participants’ perceptions during program training and facilitation.

**Table 5.3: SCT Main Constructs**

<table>
<thead>
<tr>
<th>Self-efficacy</th>
<th>Self-management</th>
<th>Self-regulation: monitoring, judgment, evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitation</td>
<td>Incentive motivation</td>
<td>Engagement</td>
</tr>
<tr>
<td>Observational learning/Peer modeling</td>
<td>Reciprocal determinism</td>
<td>Self-incentives</td>
</tr>
<tr>
<td>Self-evaluative outcome expectations</td>
<td>Social outcome expectations</td>
<td>External rewards</td>
</tr>
</tbody>
</table>

During the promotor and instructor interviews as well as the direct observation sessions, there were many instances in which their perceptions were reflected on the theoretical concepts. Figure 5.1 depicts the overall intersection of the theoretical concepts with the data from the exploratory phase, beginning with the study’s main outcome, that is, improvement in quality of life; this construct is also reflected in the PPM framework (see Figure 5.2), whereby low quality of life is the end result of heart disease, as a consequence of all the genetic, environmental, ecological and educational factors in the model. Quality of life was equated to promotores both
being effective themselves and achieving positive changes in community participants’ heart health. Our findings suggested that *promotores* felt rewarded and motivated as class participants were taking steps toward changing their lifestyles. *Reciprocal determinism* is a key tenet of the SCT, meaning that *promotores* motivated class participants through modeling (observational learning) while being rewarded by their students’ success (incentive motivation).

![Figure 5.1: Theory – Findings Alignment](image)

Both *promotores* and community participants experienced the program learning process through three domains of the ecologic triad: personal, environmental and behavioral. Expectations of *promotores’ self-efficacy* were informed by the codes found in the exploratory phase, namely heart knowledge, communication skills and certain personality traits such as empathy. Collective efficacy of community members was also determined by basic knowledge to
initiate lifestyle changes and communication. There were many instances of good
communication between *promotores*, class participants and health providers. Again, efficacy
expectations worked in both ways. Environmental factors in Figure 5.1 were common to both
*promotores* and community members, reflecting any barriers potentially affecting program
delivery as well facilitators to support it. Several codes emerged from these categories during the
qualitative analysis (e.g. time constraints, transportation), but *promotores* strived to work around
those obstacles. By providing food, working in small classes close to home and innovating with
new activities, SCT constructs such as *incentive motivation* and *facilitation* were put in place by
*promotores*. Enabling and reinforcing factors from the PPM also informed the facilitation and
incentives mechanisms involved in *Su Corazón, Su Vida* delivery. Finally, the behavioral
component in the triad (*outcome expectations*) informed *efficacy* in both groups through the
participants’ capability to set health goals and anticipate favorable outcomes based on decisions
they were considering to make. The *self-regulation* construct is crucial in this case because it
determines an individual’s level of *readiness* to embrace behavior change through its three
domains (self-monitoring, self-judgment, and self-evaluation).
Self-efficacy was perceived of diverse manners by promotores. While there was a consensus regarding it being informed by four codes (knowledge, communication, personality and decision-making), several differences were observed across groups. Born-abroad participants made multiple references to refreshing knowledge or building upon previous experiences from their home countries, where most of them had already had contact with health interventions, whether in a recipient or facilitator capacity. Some had experience in the health field and built on that experience to improve the delivery of the program. While promotores in this study primarily acted as health educators, they also served related functions like health coaches, health system navigators and advocates. A recent review by Sharma, Harris, Lloyd, Mistry, and Harris (2019)
that included near 40 studies involving lay health workers, demonstrated the important contribution of *promotores* serving underrepresented and disadvantaged communities in diverse educational and navigational capacities.

Knowledge on heart disease was rarely seen as the sole goal of participating (one participant was attracted to the study “out of curiosity”), but instead as a means of achieving something else, i.e. empowering family and community members. During the facilitation observations, I was able to witness how *promotores* provided abundant examples of heart knowledge applied to participants’ health issues. Here, the concept of ownership or uniqueness (as opposed to otherness) takes preeminence, as they reflected abundantly on their ties with the Latino community. However, several newcomers were still struggling to establish a solid network to interact with, after 1-2 years since arrival. Length of residence in the U.S. as a variable was not assessed in this study.

Being able to successfully communicate with peers what they learned was perceived as an asset by both U.S. born and foreign-born *promotores*. They provided multiple instances of sharing ideas and practical tools with people around them, not just the ones attending their classes. Also, I was able to observe lively interactions during the facilitation sessions, including setting and reporting on weekly health and wellness pledges, and discussing cardiovascular disease prevention contents. Actually, this is the foundation of the train-the-trainer model, that is, to encourage horizontal transmission of knowledge. That is why *promotores* are primarily considered facilitators and their roles go well beyond the health education and health coaching realm into functions of social support, resource linking and literacy support (Hartzler, Tuzzio, Hsu, & Wagner, 2018).
Self-efficacy of promotores is intrinsically linked to program effectiveness as well. A review by Ayala, Vaz, Earp, Elder, and Cherrington (2010) assessed the efficacy of 61 community health programs (17 of which were randomized or quasi-experimental) according to the CHW role, that is, educator-only versus educator-plus-bridge (screening and referrals to services). The programs were evaluated for outcomes, which were categorized into five groups: knowledge, psychosocial (e.g. self-efficacy), behavioral (e.g. dietary intake), health care use (e.g. cancer screening) and health status (e.g. body mass index). Su Corazón, Su Vida was one of the programs evaluated. Overall, the authors found out that one third of the educator-only programs and half of the educator-plus-bridge programs achieved changes in healthcare utilization and health status of participants. In summary, promotores are called to perform diverse duties in addition to just being health educators, with a high level of effectiveness.

Good communication skills were also applied in their contacts with health providers. They frequently saw communication as a duty or “the right thing to do.” As discussed before, intergenerational factors and Latino culture values may have played a role in promotores’ motivations to teach the program. Motivation aligns very well with the reciprocal determinism construct of the social cognitive theory, as people can affect positively their environment or other people, while being influenced back by them at the same time (Bandura, 1977). By providing support to their friends and families while delivering the program, most participants experienced the program as an enjoyable “family affair.”

While Latino culture may not possess the level of collectivist character that Asian societies display, it is still far away from that of individualism prevalent in American mainstream culture. Hence, it comes as a natural action to share a health intervention designed to empower the family as a whole, to be delivered in small groups. Foreign-born promotores, under such
assumption, might be more willing to follow this collectivist communication model due to their expected lower acculturation, that is, by thinking and acting through an “our countries” mindset. What’s more, this assumption could influence both the individual and collective self-efficacy, according to the social cognitive theory principles: by feeling empowered and making small, personal lifestyle changes, promotores could influence positively others in their social circle while being influenced back by others at the same time. This quotation from a participant is telling: “The program is a win-win because it’s helping me personally as well as the people in my life. I mean, the people I love, my children. My son is diabetic and is losing weight, so am I.” Such a dynamic, bidirectional interplay was exemplified by another promotor: “When you’re healthy, your job is a breeze; your social life, your family life, your romantic life is a breeze. Because you are well.”

In addition to communicating knowledge, participants gave great importance to personality attributes as a marker of self-efficacy. No major differences were perceived between first-generation and second-generation Latinxs in this aspect. Perhaps empathy was the most regarded attribute, as they equated being empathetic to promotores identifying with people’s needs and learning from them, not just teaching them. This concept closely aligns with role-modeling or leading by example. Role-modeling involves the observational learning construct of the SCT, which individually or collectively generates an expectation for a successful health outcome (self-evaluative outcome expectation) (Bandura, 1994). Program participants’ acquired awareness about an expected health outcome is the very first step to initiate behavior change, under the social cognitive theory postulates (Glanz et al., 2008).

Another theoretical connection comes from the PRECEDE-PROCEED model via the predisposing, reinforcing and enabling (PRE) factors (Green & Kreuter, 2005). Predisposing
constructs are learned attitudes or knowledge that may dictate engagement on initiating health behaviors; reinforcing constructs encourage or deter people to keep or stop practicing them. Two public health success stories described by Gielen and Green (2015) illustrate the practical application of these principles. Concerted efforts from lawmakers, public health experts, policymakers and other key stakeholders led to changes in regulations and social norms to curb the increasing epidemic of injuries and deaths related to tobacco use and car crashes. An emerging code in my research was the role intergenerational factors play in initiating or stopping habits (e.g. smoking or exercise). According to Bandura, an important relationship exists between early exposure to any behavior (positive or negative) and practicing that behavior later in life. Such a relation has been extensively studied in different contexts like the cycle of violence in families, and chronic disease prevention (Loustaunau & Bane, 1999).

In this research, the intergenerational and age code was expressed as a vertical transmission of values and attitudes across generations which eventually may act to predispose a new habit, to reinforce an existing habit, or to discourage from practicing one. For instance, a promotor reflected on how her two nephews refrained from picking up sweets in a Halloween party because their parents had taught them most sweets were unhealthy. Or, quoting another participant, “…if both parents have poor life and eating habits, children usually follow lead.” Thus, it is like health behaviors and risk factors are being “inherited.” Sharing Su Corazón, Su Vida concepts between promotores and their families and friends gave plenty of opportunities for such an intergenerational interplay to occur, as there were participants of different ages. Expectation for good outcomes also kept participants engaged which, in turn, informed efficacy. In other words, there is a positive relationship between strength of self-efficacy and the probability of successful performance (Bandura, 1977). Thus, applying this concept to Su
Corazón, Su Vida, the higher the expectations of a positive outcome, the higher the engagement with the program would be.

Efficacy was perceived by promotores as a personal value (self-efficacy) or attributed to someone else (collective or community member efficacy) (see Figure 5.1). In both cases, it was perceived as commensurate to the level of engagement from promotores and people attending Su Corazón, Su Vida classes. It was also related to promotores possessing certain qualities informed by basic heart knowledge, communication and personality attributes, and their ability to make and advocate for decisions conducive to health behavior change. Above qualities cannot be assessed separated from the promoter (a) family history, generational baggage and cultural background. In summary, the process of assessing the efficacy of Latino lay health workers facilitating Su Corazón, Su Vida must be informed not only by the promoter’s personal perspective; it also should consider the perceptions of community members receiving the intervention, as well as the overall environment or context in which the intervention is taking place.

Conclusions

This pretest-posttest design study used the promotor-based train-the-trainer model to deliver the Su Corazón, Su Vida health intervention in Spanish. The confirmatory component of the research demonstrated effective transmission of the program’s concepts and tools both at the classroom (promotores) and community levels. Latino participants initially trained as promotores de salud achieved significant gains in heart health knowledge. Nonetheless, possessing only knowledge may not be sufficient to teach the program effectively. Promotores’ demographics characteristics were similar to those of typical lay health workers in the U.S. Their
performance in the knowledge tests was comparable to that of community members who received the intervention from them. Observational learning via peer modeling was a SCT theoretical construct frequently employed by the master trainer and promotores during training and facilitation. This included activities like reading food labels, calculating the body mass index (BMI), doing physical exercise, and preparing healthy meals. Participants saw it as an opportunity to socialize and learn at the same time. Other facilitators included setting flexible class schedules with small groups and offering incentives (e.g. refreshments). Incentive motivation worked as a facilitation mechanism as participants felt valued and encouraged to participate.

Conversely, deterrents for undesired behaviors may have played a role as well through social control; that is, individuals often refrain from practicing some behaviors due to peer pressure from family and friends. Positive and negative incentives, as well as facilitators in the SCT framework are equivalent to the predisposing, reinforcing and enabling (PRE) factors in the PPM. Born abroad promotores performed better in the post-program test as compared to their U.S. born counterparts. Difference in heart knowledge acquisition was not directly explained by differences in age, gender and education level.

Preference of language spoken at home (Spanish only vs Spanish and English) may have played a role in the difference in knowledge acquisition. Second-generation promotores reported more proclivity to use the English language irrespective of their age and gender, and some of them showed limited Spanish proficiency. They would switch inadvertently between the two languages during the training, facilitation observation sessions and individual interviews, often resulting in a sort of “Spanglish.” Also, cultural variations may have made first-generation promotores more willing to adopt the program’s tenets because of their assumed lower level of
acculturation and stronger ties to their home countries’ culture and language, thus resulting in better knowledge test performance. In general, all promotores showed enthusiasm in delivering the program to small groups and worked around operational challenges they found.

The exploratory component of the study was informed by the lived experiences of promotores teaching the program in the community. Participant observation of the training and facilitation sessions, as well as individual interviews with promotores, the program instructor and participants dropping off the study provided abundant insights. Several overarching themes emerged related to how the heart as a vital organ as well as heart disease are conceived in the Latino culture, thus permeating the ideas and conceptions about the meaning of life and death across generations. Furthermore, those beliefs seemed to determine the response and level of acceptance of health interventions like Su Corazón, Su Vida.

A striking difference between first- and second-generation Latinos was the notion of uniqueness evoked by foreign-born promotores to reflect on the challenges they encountered upon moving to the U.S., and while teaching the program. Perceived differences included the conceptions of time, language, technology and literacy. Barriers included logistical as well as systemic issues. In any case, dissimilarities between an “us” and “them” (otherness) was perceived as a major determinant in first-generation Latinos’ interaction with American mainstream culture and may have affected their efficacy as SCSV promotores.

Participants’ lived experiences learning and then teaching the program were adequately informed by constructs of the social cognitive theory and the PRECEDE-PROCEED model. Quality of life was the main outcome determined by promotores efficacy and community members’ empowerment to engage in behavior change. Self-efficacy while teaching the program
was two-fold. First, promotores felt more engaged as they perceived some benefits from accessing the program including improved communication with family, friends and health providers, as well as becoming aware of health habits. Also, they conceived it as the degree to which other community members were empowered to pursue positive health outcomes. In other words, individual self-efficacy to engage in behavioral change was informed by their beliefs and anticipated benefits from the program. Further, promotores tied up their own efficacy to teach to participants’ efficacy in initiating positive lifestyle changes to achieve better heart health outcomes.

Observational learning and reciprocal determinism were crucial in the interaction and motivation flowing between promotores and community members receiving the SCSV classes; that is, they considered that being an effective facilitator equated to making a difference on their students’ lives. In other words, working towards a common outcome of bettering quality of life was dependent on having effective, skillful promotores and participants achieving better heart health. Finally, several characteristics related to possessing basic heart knowledge and personality attributes such as charisma and empathy, as well as mastering certain communication skills and decision-making were all considered essential for making an efficacious promotor.

**Study Strengths**

This research study features several strengths. First, by following the train-the-trainer model including the evaluation component, it was possible to assess the whole process of transmission of knowledge between the Su Corazón, Su Vida program instructor, promotores and community participants. It also provided insights on differences in learning outcomes according to promotores birthplace. Second, the results are reinforced by the satisfactory reliability and
validity of the heart knowledge test, since this instrument was developed at the same time the
classroom was created and is based on its curriculum. It must be said, however, that test reliability
and validity could not be reflecting its accuracy in the real world. Despite of having being pilot-
tested with promotores obtaining 70 percent or more of maximum score, some statements were
made regarding inexact or outdated content. Participant No. 4, for instance, challenged the
assertion of eating margarine instead of butter, and of using canola oil. Other participants
commented on the inappropriateness in the serving sizes of several foods like rice. In some
cases, such statements may have transpired participant families’ deeply ingrained values
concerning their eating patterns including what and how much they eat, and how they prepare it.
In other instances, though, they might signal a need to review the knowledge test to incorporate
periodic updates in the position of health experts about nutrition facts. This must be included in
future reviews of Su Corazón, Su Vida.

Lastly, being an exploratory design meant I did not have preconceptions regarding
potential findings. Both the program training and community facilitation were double
documented through interviews and participant observation including checklists. This resulted in
the exploratory phase having an extra layer of certainty of qualitative data by contrasting the
views of promotores, the program instructor and the participants who abandoned the study. Such
a triangulation of data allowed for greater understanding of promotores lived experiences.

Study Limitations

Among the limitations of this research study, it can be mentioned a small sample size. A
snowball sampling method was utilized as participants were recruited while contacting the SCC
in search of health and wellness resources, and later they would refer someone else to the study.
This would introduce a selection bias to the study, although recruitment was conducted by SCC staff, not the researcher. But, in actuality, this sampling method could have become an advantage by allowing the recruitment of highly motivated individuals, willing to go through a long training followed by the facilitation of the program. While recruiting subjects using probabilistic methods would have allowed an unbiased selection, it could have resulted in a higher dropout rate. Moreover, the small sample size disadvantage may have been compensated with the triangulation of several data collection methods.

Another constraint was related to the study design. As it was a one-group, before-after study, there was no time to explore long-term health measures. Furthermore, its design precluded inferences of causation. This means that further research should be conducted before drawing firm conclusions about applying these findings, and any inferences on them informing the design of interventions customized to individual populations should be tentative. These limitations also may compromise the generalizability and applicability of the findings to settings other than preventive health interventions targeting Latino communities in the United States.

Trustworthiness was not formally addressed in this study although some measures were taken in that regard. Qualitative research trustworthiness typically include four criteria, i.e. credibility, transferability, dependability and confirmability. Their equivalents in the quantitative research paradigm would be internal validity, generalizability (external validity), reliability and objectivity, respectively (Kennedy-Clark, 2012). Credibility is classically defined as “a way to ensure the study is measuring what is actually intending to do”, or “the reconciliation of [study] findings with the reality (Varela Ruiz & Vives Varela, 2016)”; I did perform triangulation of data as a way of corroborate findings from in-depth interviews with observation of promotores facilitation sessions, and the feedback of both the program trainer and participants who dropped
off the study. In this sense, a vivid description and adequate interpretation of findings may inform better *credibility* than the number of participants does; sometimes there is voice in silence.

*Member checks* is a proven method to increase *trustworthiness* by “detecting personal biases of the researcher while soliciting alternative viewpoints regarding the interpretation of the data.” They can also ensure ethical standards are being met, get a wider range of perspectives, and boost participant engagement with the studied phenomenon (Kornbluh, 2015). Member checks involve sharing a written summarization of findings with the participants to obtain their confirmation (or disproval) on the accuracy of the account. A limitation I found related to applying this method was participants’ unwillingness to engage in additional research activities because of lack of time/scheduling conflicts. Perhaps using asynchronous online member check sessions in future studies can help overcome this challenge. Another method for boosting credibility would be maintaining *prolonged engagement* with participants (Lincoln & Guba, 1985). However, it can be challenging to have prolonged engagement with a highly mobile and struggling cohort, as participants frequently in my study often cited time and work-related constraints; also, several of them already left the area.

*Transferability* refers to the extent to which the findings from one study can be applied at another place and time (Kennedy-Clark, 2012). In other words, sufficient information must be provided regarding the duration of the study, involved organization(s), number of participants, data collection instrument(s), and number/length of data collection sessions. In this regard, I strived to describe most of these items in the methods section. Despite of having obtained a satisfactory reliability measure for the confirmatory heart knowledge test, I did not do the same in the exploratory phase to account for *dependability*. Excepting the piloting of the interview
questionnaire, I did not replicate the work with a similar cohort of Latino participants. In fact, very few exploratory studies exploring *Su Corazón, Su Vida* training and facilitation in similar contexts were available.

Finally, *confirmability* alludes to making sure research findings are reflecting the ideas and experiences of the participants, not the researcher’s characteristics and preferences. As described in the Positionality of the Researcher section, it can be quite challenging to get rid of one’s biases and limitations. In the qualitative approach, the “researcher is the main data collection instrument in charge of gathering, filtering and interpreting information; hence, her or his interaction with the studied phenomenon is a close one” (Varela Ruiz & Vives Varela, 2016). I hope to stay being mindful about such limitations when engaging in future research.

**Recommendations**

It is imperative to advocate for a fair pay for *promotores*, who historically have been subject to economic discrimination. As the U.S. population becomes increasingly diverse, so does the need for appropriate healthcare services. Poor access to health education and prevention interventions may particularly affect ethnic minorities and disenfranchised communities. Latino *promotores* are called to fill this service access gap. Challenges reported by participants in this study such as lack of funding and transportation issues, added to the language and cultural barriers especially experienced by those born abroad. Despite showing great enthusiasm for getting involved with *Su Corazón, Su Vida*, participants in this study consistently expressed concerns about receiving remuneration for their efforts. Some surveys have reported an hourly wage for CHWs as low as $7.90 to $10.90, equivalent to $16,432 - $22,672 annually for a full-time job. Health program developers and funders are called to create innovative solutions to
overcome these challenges related to delivering cost-effective health promotion and healthcare services.

*Promotores* can be more effective if they teach in the same communities where they live. Delivering *Su Corazón, Su Vida* in small groups close to home can help troubleshoot some of the operational challenges found in this study. Community health workers in the U.S. usually work in geographical areas or health services neglected by the conventional health network, often resulting in chronic underfunding of programs delivered by them. CHWs in developing countries mostly cover rural and remote areas, whereas in the U.S. they tend to work in underserved urban areas and communities of ethnic minorities, where they educate people not captured by the traditional healthcare system. A national survey of health programs staffed by CHWs reported that 27% of their programs serve rural areas, 29% serve urban areas, and 38% serve both urban and rural areas (Koch, 1998).

Professional development of CHWs must become a priority. Despite a steady growth of the CHW occupation taking place since the 1980s, big disparities persist in terms of the compensation and benefits they receive when compared to other health-allied professions. There are also inequalities in the quality and frequency of job-related training. The federal government has forecasted a robust growth rate for the CHW occupation in the next decade (DOL-BLS, 2020); nonetheless, there is still some reluctance of government agencies and health organizations to use such a valuable resource. Scarce support from funders and policymakers has resulted in a shortage of CHWs such as *promotores*. As a result, vulnerable populations such as Latino older adults do not have appropriate access to health promotion and preventative services. As discussed before, such a service access gap may lead to worsening health outcomes and poor
quality of life, as well as reduction in life expectancy among the Latino population in the United States.

Getting more promotores trained to facilitate the program in their own neighborhoods will empower them to become agents of change. The most vulnerable members of Latino communities will be benefited. More political will and advocacy action translated in financial support must be garnered to ensure program sustainability and loyalty, thus resulting in the training of more community members interested in becoming promotores.

Targeting specific audiences during program facilitation might work towards enhancing its effectiveness. Segmenting target audiences is a key principle in social marketing and program delivery, which results in better learning outcomes and resource savings. This is especially important as I strive to back up the program’s key concepts with behavior change theory underpinnings. Several challenges found during program facilitation were related to Latinos being a diverse group in several aspects. First, I noticed differences between U.S. born and born abroad participants regarding how time management is perceived in American mainstream culture. They also showed differing views about language and technology usage, as well as about general and health literacy. Other possible difference would be related to age group, which may determine preference for certain topics and class activities. All the above differences should be considered during the planning and recruitment stages.

In this study, some participants felt more comfortable interchanging between Spanish and English language terms during class facilitation and individual interviews. While Latinos in the U.S. have been historically considered a homogeneous group, it is recommended to segment audiences for Su Corazón, Su Vida classes according to language preference (Spanish only vs
Spanish and English) and proficiency, so it will match promotor’s characteristics. National origin should also be considered to accommodate for regional variations that can determine the level of comprehension and learning. For instance, different options can be used to present class scenarios related to food shopping and preparation.

*Promotores* in this study used *observational learning* to facilitate the course while modeling desirable health behaviors, in the hopes that community learners would take that knowledge home. Individuals considering behavioral change typically are more inclined to initiate it and keep on track if they are interacting with people they can relate to, that is, if other participants and the *promotor* look, talk and think like them. For this reason, *promotores* should belong to the communities where they work. Furthermore, the *social outcome expectations* construct posits that individuals engaging in any given behavior will highly value an expected outcome if it goes in line with the prevailing social norms. Here, again, group thinking may play a big role by making its members more willing to work towards a shared, common goal.

Another recommendation relates to the use of computer equipment during class sessions. Future trainings should consider teaching basic computer literacy skills including demonstrations and in-class practice to ensure *promotores* can successfully complete the instructional video activity as well as present other relevant materials if they choose to. *Su Corazón, Su Vida* was designed to be delivered using only the instructor manual, standup flipcharts and handouts. Nonetheless, the *Act in Time to Heart Attack Signs* video must be presented, which requires the use of A/V equipment. A few participants reported struggles while attempting to play the video, which was included in a compact disc along with other course materials. Overall, the instructional video was well regarded although some ideas were given to make it shorter or split it into 2-3 short clips.
Peer modeling is vital in enhancing participant’s engagement and proficiency in using computer devices, especially because technological issues can sometimes be unexpected. Some participants also offered their technical expertise to enhance Su Corazón, Su Vida using electronic format and online tools. Based on such feedback, developing additional learning resources can be explored, including a course companion website, online tutorials and class demonstrations, as well as free videos hosted in open platforms (e.g. YouTube). Some promotores, especially the younger ones, might provide their expertise in setting up these additional learning tools at low cost. In this vein, constructs from the social cognitive theory such as establishing tangible rewards or promoting self-incentives (e.g. promotores working toward personal health goals), can be helpful in accomplishing this task.

Program fidelity is a crucial element to ensure sustainability and proper evidence gathering. It is important to obtain comparable learning and health outcomes as Su Corazón, Su Vida is delivered and evaluated across jurisdictions. Furthermore, continuing education actions must be executed to make sure promotores stay updated on any changes and improvements to the program. It is recommended the development and implementation of a nationwide promotor certification process, which is crucial to ensure program fidelity; a set of minimum competencies would be required under this program. To reduce costs and increase program visibility, the certification process to facilitate Su Corazón, Su Vida could be “piggybacked” to or aligned with an established certification program, such as the community health worker (CHW) certification. There are currently CHW certifications in place in almost every state, and periodic refresher for promotores should be considered.

Finally, obtaining funding and community acceptance and ownership are vital in keeping a health program alive over the years. It is imperative to explore avenues for obtaining financing
through public-private partnerships, grants and in-kind donations to secure *promotores* remuneration and program supplies, with the aim of improving access and providing education and navigational resources to Latinos of disadvantaged backgrounds. Participants in this study demonstrated great enthusiasm teaching the program, even though they faced many challenges. Some *promotores* made calls for securing funding and getting paid. While *Su Corazón, Su Vida* is a license-free program, there are still expenditures related to handouts, equipment, transportation and venue. In addition to facilitating health programs, *promotores* have a tremendous potential to serve in different capacities at the community including care coordination, social support, health assessment, resource linking, case management, medication management, remote care, follow-up, administration, and literacy support (Hartzler et al., 2018).

**Future Research**

Cardiovascular diseases are a major determinant in progressively eliminating the advantage in terms of morbidity and life expectancy that Latinos in the U.S. used to enjoy. In addition to enduring unhealthy lifestyle changes as they embrace the American mainstream culture, Latinos face significant challenges related to high cost health services including preventative care. *Su Corazón, Su Vida* has been instrumental in eliciting health behavior change and heart disease awareness in Latinos for about two decades. However, funding-related ups and downs have limited its sustainability. This study demonstrated that *Su Corazón, Su Vida* is a well-accepted public health intervention when delivered to small groups by community members trained as *promotores* in scarce-resource settings. It also showed that *promotor* efficacy is intimately linked with the level of program engagement which, in turn, is informed by perceived benefits and barriers. Future research could involve a longitudinal cohort study exploring the program’s effect on cardiovascular health outcomes as a result of participants engaging in
durable behavior change. A longitudinal design would also allow causality inferences to be made.

Moreover, it is imperative to explore other possible elements of program success such as community acceptance. This study only evaluated pretest/posttest scores from community members receiving the program from promotores. In order to grasp a better understanding of the factors determining program acceptance by community members, further studies could include getting their perspectives on the facilitation process, not only promotores’ perspective. Also, the factors motivating community members to become promotores themselves could be explored.

Participants in this study proposed a number of changes in the program’s content and facilitation mechanisms; these modifications could be piloted, and field tested, providing the spirit and essence of the program remain unmodified. The adapted curriculum would then be facilitated and evaluated for effectiveness in improving learning and behavioral outcomes. Finally, another area deserving attention would be assessing the role language preference of promotores would have on their own efficacy, and on the long-term behavioral and health outcomes of program recipients.

*Su Corazón, Su Vida* has proved to be a low-cost, easy to teach, effective health intervention that can be facilitated at homes, to small groups and in scarce-resource settings. Manos a la obra!
LIST OF REFERENCES


program to promote heart-healthy behaviors among hispanics. *Health Promot Pract*, 7(1), 68-77. doi:10.1177/1524839904266799


APPENDICES
Appendix A: Pre-Selection Survey

Participant No.____________________

Age: ________ (years)
Gender: □ Male    □ Female
Place of Birth: _________________________________
Address of Residence: ____________________________________________

Language primarily used at home:
□ English
□ Spanish

Education Level:
□ Elementary/Middle School
□ High School
□ College
□ Graduate Studies

Would you be willing to receive a 10-hour training for the heart health program Your Heart, Your Life (Su Corazón, Su Vida), including a pre-test, a post-test, and an individual interview?
□ Yes
□ No

If so, would you be willing to facilitate this program to other members of your community such as relatives, friends and neighbors?
□ Yes
□ No
Appendix B: Informed Consent

Informed Consent to Participate in Research Involving Minimal Risk

Study ID: Pro00033478          Date Approved: 6/12/2018         Expiration Date: 6/12/2019

You are being asked to take part in a research study. Research studies include only people who choose to take part. This document is called an informed consent form. Please read this information carefully and take your time making your decision. Ask the researcher or study staff to discuss this consent form with you, please ask him/her to explain any words or information you do not clearly understand. We encourage you to talk with your family and friends before you decide to take part in this research study. The nature of the study, risks, inconveniences, discomforts, and other important information about the study are listed below.

We are asking you to take part in a research study called:

**Differences in Knowledge Acquisition and Effectiveness Perceptions about a Heart Disease Prevention Intervention Between U.S.-born and Foreign-born Latino Promotores receiving the Su Corazón, Su Vida program.**

The person who is in charge of this research study is Samuel Matos. This person is called the Principal Investigator. However, other research staff may be involved and can act on behalf of the person in charge. He is being guided in this research by Dr. Ismael Hoare.

The research will be conducted at the Senior Connection Center, Inc.

**Purpose of the study**

The purpose of this study is to evaluate the process of training and acquisition of heart health knowledge in Latino participants who receive the Su Corazón, Su Vida program. This will involve exploring their perceptions including level of engagement, willingness to behavior change, and personal self-efficacy to facilitate the program to other community members.

**Why are you being asked to take part?**

We are asking you to take part in this study because you belong to the Latino community in East Tampa where this study is being conducted, involving the Su Corazón, Su Vida program training and subsequent facilitation in Spanish language. The research protocol is asking for adult participants of both sexes interested in being trained as health promoters, and then delivering the program.
**Study Procedures:**

If you take part in this study, you will be asked to:

1) Complete a one-page Pre-Selection Survey (about 5 minutes) to determine your eligibility for the study, by asking you to provide basic demographic information, language primarily used at home, and willingness to be trained on and facilitate Su Corazón, Su Vida program.

2) If you are eligible and willing to participate, you will be asked to attend a 10-hour training at the Senior Connection Center to learn the Su Corazón, Su Vida program curriculum. Training sessions will involve discussing topics of cardiovascular health, basic heart anatomy and physiology, heart risk factors, and prevention measures.

3) Respond to a survey questionnaire (pre-test) before undergoing the training. The pre-test will include 23 multiple choice questions based on the elements of Su Corazón, Su Vida, and it will take 20-30 minutes to complete.

4) Facilitate the heart health program at home to a small group of people (3-5) in your vicinity (i.e. family members).

5) Respond to a survey questionnaire (post-test) upon having facilitated the program. The post-test will include 23 multiple choice questions based on the elements of Su Corazón, Su Vida, and it will take 20-30 minutes to complete.

6) Participate in an individual interview with the Principal Investigator. A 15-open-question guide will be used to get your perceptions on the program’s potential benefits and the teaching/learning process. The interview session will take one hour approximately and will be audiotaped for transcription purposes. You may refuse to be audio taped. No personal identifiable information will be collected during the interview. Only the Principal Investigator and his faculty advisor (Dr. Ismael Hoare) will have access to the recording files, which will be kept in a locked cabinet at the USF College of Public Health. The audio files will be erased 5 years after the Final Report is submitted to the USF IRB.

**Total Number of Participants**

About 20 individuals will take part in this study at USF.

**Alternatives / Voluntary Participation / Withdrawal**

You do not have to participate in this research study. You should only take part in this study if you want to volunteer. You should not feel that there is any pressure to take part in the study. You are free to participate in this research or withdraw at any time. There will be no penalty or loss of benefits you are entitled to receive if you stop taking part in this study.

**Benefits**

We are unsure if you will receive any benefits by taking part in this research study.
**Risks or Discomfort**

This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study.

**Compensation**

You will be compensated $100 if you complete all the scheduled study visits (pre-test/training, post-test/interview). If you withdraw for any reason from the study before completion you will be paid $50 for each study visit you complete.

**Costs**

It will not cost you anything to take part in the study.

**Conflict of Interest Statement**

None declared.

**Privacy and Confidentiality**

We will keep your study records private and confidential. Certain people may need to see your study records. Anyone who looks at your records must keep them confidential. These individuals include:

- The research team, including the Principal Investigator, and all other research staff.
- Certain government and university people who need to know more about the study, and individuals who provide oversight to ensure that we are doing the study in the right way.
- Any agency of the federal, state, or local government that regulates this research.
- The USF Institutional Review Board (IRB) and related staff who have oversight responsibilities for this study, including staff in USF Research Integrity and Compliance.

We may publish what we learn from this study. If we do, we will not include your name. We will not publish anything that would let people know who you are.

**You can get the answers to your questions, concerns, or complaints**

If you have any questions, concerns or complaints about this study, or experience an unanticipated problem, call Samuel Matos at 813-484-0986.

If you have questions about your rights as a participant in this study, or have complaints, concerns or issues you want to discuss with someone outside the research, call the USF IRB at (813) 974-5638 or contact by email at RSCH-IRB@usf.edu.
Consent to Take Part in this Research Study

I freely give my consent to take part in this study. I understand that by signing this form I am agreeing to take part in research. I have received a copy of this form to take with me.

______________________________  _________________________
Signature of Person Taking Part in Study                  Date

______________________________
Printed Name of Person Taking Part in Study

Statement of Person Obtaining Informed Consent

I have carefully explained to the person taking part in the study what he or she can expect from their participation. I confirm that this research subject speaks the language that was used to explain this research and is receiving an informed consent form in their primary language. This research subject has provided legally effective informed consent.

______________________________  _________________________
Signature of Person obtaining Informed Consent                  Date

______________________________
Printed Name of Person Obtaining Informed Consent
Appendix C: *Promotores* Readiness Test

Participant No.___________________  Date: ___________________

☐ Pre-Test (PRT-0)  ☐ Post-Test (PRT-1)

A. Have you ever worked as a community *promotor* or health educator? ☐ Yes  ☐ No (if no, please proceed to question 1)

B. For how long?  ☐ Less than a year  ☐ One to five years  ☐ More than five years

C. What health topics have you facilitated? *(You may choose more than one option)*

☐ Heart health  ☐ HIV/AIDS

☐ Cancer  ☐ Asthma

☐ Diabetes  ☐ Other *(please write it down)* __________________________

D. Is this your first training for the program *Su Corazón, Su Vida*? ☐ Yes  ☐ No

-------------------------------------------

Please circle only one answer for each question *(right answers in boldface)*.

1. Our heart is an amazing part of our body. Which of the following assertions is true?

   a. It beats about 1,000 times an hour
   
   b. **It pumps approximately 5 liters of blood every minute**
   
   c. It beats about 10,000 times a day
   
   d. It pumps approximately 50 liters of blood every hour

   *Doña Inés, who is 65 years old, is Maria’s mother. Doña Inés has diabetes (blood sugar), and her blood pressure is 148/98 mmHg (millimeters of mercury). Her blood cholesterol is 250 mg/dL (milligrams per deciliter). Doña Inés always has a saltshaker at her table and likes salty food.*

2. What are the risk factors that put Doña Inés at risk for heart disease?

   a. Using small amounts of salt, being physically inactive, and being overweight
   
   b. **Being a female older than age 55, having high blood pressure, having high blood cholesterol, having diabetes (blood sugar), and eating foods high in sodium (salt)**
   
   c. Having high blood pressure, having high blood cholesterol, and having low blood sugar
   
   d. Having high blood cholesterol, having low blood pressure, using lots of salt, and being physically inactive
3. A *promotor* explains to Doña Inés what high blood pressure is:

   a. High blood pressure is the number that you get when you add 100 to your age
   b. High blood pressure is when the body circulates more blood based on your height and weight
   c. **High blood pressure is a measurement of 140/90 mmHg or greater**
   d. High blood pressure is when the blood suddenly stops going to the brain

*Maria, the daughter of Doña Inés, is 30 years old. She cooks with a lot of fat, and she is 15 Lb. (7 kilos) overweight. She prepares fried chicken, refried beans, and likes nachos with lots of butter, mayo and cheese. When Maria does not have time to cook, she buys a super-sized hamburger, French fries, and a regular soda. Instead of walking, Maria drives her car, even to the corner. Her “best friends” are the remote control for her television and her green chair. Maria’s cholesterol level is 240 mg/dL.*

4. Maria’s risk factors and lifestyle habits that put her at risk for developing heart disease are:

   a. **Being overweight, physically inactive, and cooking and buying foods high in fat**
   b. Having high blood cholesterol, walking, and being age 30 and overweight
   c. Being overweight, having high blood pressure, and having a family history of heart disease
   d. Being age 30, having had a heart attack before, and having low blood pressure

5. Which of the following is true about heart disease?

   a. Cardiovascular diseases, such as heart attack and stroke, have been reducing their frequency in recent years
   b. Heart disease is rare in women
   c. Little can be done to prevent heart disease
   d. **Heart disease may occur at any age**

6. Heart disease, and especially heart attack, is:

   a. **The first cause of death in this country**
   b. The second cause of death in this country
   c. The third cause of death in this country
   d. The fourth cause of death in this country

7. Which of the following statements is true about clinical signs of a heart attack?

   a. Diagnosis requires all the symptoms (such as pain, shortness of breath, sweating, and nausea) must be present at the same time
   b. **The most common warning sign for men and women is chest pain or discomfort**
   c. All heart attacks happen abruptly in the way you see in soap operas or the movies
   d. It is very difficult to confuse symptoms of other diseases, such as asthma, a pulled muscle or indigestion, with the warning signs of a heart attack
8. Please choose the right action you would take to seek medical care under suspicion of a heart attack:
   a. It is better to wait 2-4 hours to see if the clinical signs get worse
   b. It is better to drive your car yourself to the hospital
   c. **It is a good idea to have a Personal Emergency Card**
   d. It is a good idea to take two aspirins and stay home

9. What is the best timeframe to receive treatment for a heart attack to improve the chances of survival?
   a. **Within 1 hour after warning signs start**
   b. Within 6 hours after warning signs start
   c. Within 24 hours after warning signs start
   d. Within 72 hours after warning signs start

10. Which of these lifestyle changes can help people prevent heart disease?
    a. Cooking beans with lard
    b. Drinking a lot of whole milk
    c. **Preparing foods by baking, broiling, or boiling, instead of frying**
    d. Eating large portions of food

11. Knowing about serving sizes is very important to avoid eating larger portions of food than recommended. Which of the following is an example of a serving size?
    a. One cup of cooked rice
    b. Two eggs
    c. Two tablespoons of margarine
    d. **One medium-size fruit**

12. Which of the following actions can help you take steps toward a healthier lifestyle?
    a. **Adding fruits and vegetables to your meals**
    b. Buying canned vegetables instead of fresh or frozen vegetables
    c. Cooking with lard instead of canola, olive, or corn oil
    d. Eating butter instead of margarine

13. What of the following is true regarding physical activity?
    a. You usually can carry on a conversation comfortably while doing vigorous physical activity
    b. Physical exercise is not as important in children and adolescents as in adults
    c. **Adults should be physically active for 30 to 60 minutes a day on most days of the week**
    d. Physical activity should not be fractioned over the day
14. Please choose the right answer on high blood pressure:
   a. **About a third of hypertensive people don’t know they have high blood pressure**
   b. Having prehypertension (120/80 to 139/89 mmHg) is no reason for concern
   c. High blood pressure typically presents many symptoms
   d. The recommended amount of sodium (salt) per adult is 4-6 grams (about 2½ teaspoons) each day

15. Mark the right answer regarding some heart disease risk factors:
   a. Secondhand smoke is not dangerous to your heart health
   b. The desirable level for LDL, the bad cholesterol, is less than 160 mg/dL
   c. Having a waist measurement greater than 89 cm (35 inches) is healthy for a woman
   d. **Some adults need about 60 minutes of moderate physical activity on most days to prevent weight gain**

16. A heart healthy diet should be followed by:
   a. Only people who have high blood cholesterol
   b. Only adults who have heart disease
   c. **Everyone older than 2 years of age for their lifetimes**
   d. Everyone between 40 and 65 years old

17. Which of the following waist circumference measurements increases your risk for heart disease?
   a. More than 89 cm (35 inches) in men
   b. More than 102 cm (40 inches) in women
   c. It is the same value for men and women
   d. **More than 89 cm (35 inches) in women**

18. Regarding body weight, which of the following is considered a healthy body mass index (BMI)?
   a. Less than 18.5
   b. **18.5 to 24.9**
   c. 25 to 29.9
   d. 30 and above

19. Which of the following foods is high in sodium (salt), and can be harmful to your heart?
   a. Chicken and turkey (with skin removed)
   b. Plain rice, noodles, or pasta
   c. Spices and herbs such as cilantro, parsley, garlic and onion
   d. **Regular canned and instant soups**
20. Mark the right answer regarding fats and heart disease:
   a. **Lipid profile test (HDL cholesterol, LDL cholesterol, total cholesterol and triglycerides) is recommended for adults aged 20 and older**
   b. Cholesterol only comes from the food we eat, it is not made in our body
   c. Triglycerides levels are not important, if our cholesterol is within normal limits
   d. HDL cholesterol is also called “bad” cholesterol

21. Diabetes (blood sugar) is an important risk factor for heart disease. State the right assertion regarding diabetes:
   a. Type I diabetes is more common after age 40
   b. Type II diabetes usually requires insulin
   c. **A fasting blood glucose level of 126 mg/dL or higher means that you have diabetes**
   d. Overweight is not considered a risk factor for developing diabetes

22. Hidden sugar in common beverages is a big concern in preventing and controlling diabetes. How much sugar does a 12-ounce regular soda contain?
   a. 3 teaspoons (12 grams)
   b. 6 teaspoons (24 grams)
   c. 9 teaspoons (36 grams)
   d. **9 ⅜ teaspoons (39 grams)**

23. Which of the following is true regarding alcohol?
   a. Alcoholic drinks don’t contain calories
   b. **Pregnant women should not drink any alcohol**
   c. Alcohol does not affect the blood pressure
   d. Alcohol does not interfere with any prescription medications
Appendix D: Individual Interview Questionnaire

Thank you for your time and help. I’d like to learn on your recent experience with the heart health program “Su Corazón, Su Vida.” Please feel free to share all your opinions, feelings, and knowledge about this topic. Your input will be deeply appreciated, all the information will be collected anonymously, and your name will not be connected in any way to this research results. This interview should last about one hour, and it will be recorded and transcribed for research purposes. I would like to know about your awareness of cardiovascular disease such as heart attack and stroke, and its risk factors. As you recently were trained and then facilitated the program, I am interested in your perceptions on the course’s potential benefits and the teaching/learning process. I’d also like to discuss the factors that would make it easier or harder to teach Su Corazón, Su Vida to other people.

1. How do you think heart disease affects a person? What is your experience with heart disease? (Probes: impact on quality of life, friends/relatives with heart disease)
2. What do you think are some factors leading to development of cardiovascular disease? (Probes: high blood pressure, tobacco smoking, high cholesterol, lack of exercise)
3. What is the first thing that comes to mind when you think about the program “Su Corazón, Su Vida”? What impact do you think the program has on the participants? What were your expectations when you got enrolled in this program? Have they been met?
4. Have you participated in other heart health courses in the past? How does this experience relate to “Su Corazón, Su Vida”? (Probes: similarities/differences)
5. What motivated you to receive the course? (Probes: curiosity, peer pressure, altruism)
6. What motivated you to teach the course? (Probes: curiosity, peer pressure, altruism)
7. What would you list as key attributes that a promotor must have to teach this program successfully? (Probes: personality, attitude, resources)
8. What strengths and opportunities do you think “Su Corazón, Su Vida” has?
9. What about potential weaknesses and challenges to teach the program?
10. What could make it easier for someone to attend the classes? (Probes: incentives, schedule, transportation)
11. What could make it harder for someone to attend the classes? (Probes: length of the meetings, time, day, location)
12. If you were to make a short presentation about the purpose of this program, what would you say? (Probes: elevator speech, talking to a friend, announcement at church)
13. Considering what you know about this program so far, what changes do you propose should be done to it? Can you think of anything else that might make the program more effective? (Probes: duration, additions, deletions)
14. Are there other thoughts you would like to share?
## Appendix E: Attendance (AT), Punctuality (PU) & Participation (PA) Log

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Appendix F: Session Observation Checklist

Date: _____________    Participant No.: _____________    Session No.: _____________

Introducing the Session: The Promotor did…

☐ Welcome group members.
☐ Review the information from the last session.
☐ Ask group members to talk about their pledges.
☐ Explain what they are going to talk about in today’s session.

Conducting the Session: The Promotor did…

☐ Present new information and delivered handouts.
☐ Lead the group educational activities.
☐ Ask the group members questions.
☐ Let the group members ask questions about what they have heard.

Review and Closing: The Promotor did…

☐ Emphasize the important points.
☐ Help group members come up with a weekly pledge to make a healthy lifestyle change related to the information learned during the session.
☐ Share a personal value that helps participants to keep their pledges and gain confidence.
☐ Thank group members for attending and ask for their feedback on the session.

Observer’s Notes:
Appendix G: Non-Completer Participant Interview Questionnaire

Dear Promotor (a) de Salud,

You recently participated in the Su Corazón, Su Vida program research study, but were unable to either complete the required 10-hour training or teach the program to others in the community. We are very interested in your opinions and perceptions about why this happened. Thank you.

1. How would you describe your initial experience with Su Corazón, Su Vida?

2. Explain some barriers that may have prevented you from completing the training/facilitation (please feel free to elaborate, writing in another page if needed).
   a. Were these issues related to the program content?
   b. Were these issues related to the way the training was delivered?
   c. Were these issues related to the instructor’s style, demeanor, and background?
   d. Were these issues operational in nature? (E.g. location, transportation, meals, date/time)
   e. Are there any other issues outside of the above categories you would like to talk about?

3. What could have been done differently to improve your experience being trained and then facilitating Su Corazón, Su Vida?

4. What do you believe are some advantages and/or disadvantages of Su Corazón, Su Vida?

5. What would encourage you to get involved as a Su Corazón, Su Vida promotor in the future?

6. What are your overall thoughts about Su Corazón, Su Vida?
ABOUT THE AUTHOR

Samuel Matos-Bastidas was born and raised in Venezuela where he earned a medical doctor degree from Universidad Francisco de Miranda in Coro, Falcon, followed by a residency in internal medicine and fellowship in adult critical care, both from Universidad de Los Andes in Merida, Merida. Upon moving to the United States in 2009 he earned his MPH with a concentration in Global Health from the University of South Florida in Tampa, FL, during which time he conducted summer fieldwork on global health challenges at Nankai University in Tianjin, China followed by a field experience and research in Dover, Florida. Later he continued on to his doctoral program in the University of South Florida College of Public Health. He is currently teaching nursing and science courses at Ana G. Mendez University, and is interested in doing further research and working in the field of health program development, implementation and evaluation.