The Implementation of a Faith-Based Heart Healthy Education Program for Latinos in Miami, Florida

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THE IMPLEMENTATION OF A FAITH-BASED HEART HEALTHY

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Abstract

**Background:** Cardiovascular disease (CVD) has been identified as a leading cause of mortality in the Latino population in the United States. Studies conducted in faith-based settings demonstrate effectiveness in improving the promotion of lifestyle changes.

**Methods:** This project was a four-week faith-based educational intervention for Latinos meeting weekly at a faith-based organization in Miami-Dade Florida. Classes focused on cardiovascular disease prevention and risk reduction and included PowerPoint presentations, fotonovellas, and interactive activities offered in English and Spanish. Participants were asked to complete cardiovascular disease knowledge questionnaire before and after the educational classes based on the National Institute of Health’s publication “Your heart, your life: A community health worker’s manual for the Latino community”.

**Results:** Ten adult Latinos, ages 41-84 years old participated in the culturally appropriate educational intervention. Risk factors for CVD were identified with the exception of diabetes which was not perceived as a risk factor for heart disease by 60% of participants pre-intervention. Knowledge of diabetes as a risk factor for CVD increased from 40% to 100% and a modest increase in physical activity was seen among women.

**Conclusions:**

The curriculum demonstrated effectiveness in increasing knowledge and awareness of CVD among adult Latinos. Although significant changes were not seen in levels of physical activity and blood pressure post intervention, the increased awareness of cardiovascular disease influenced participants to take steps towards making healthier lifestyle choices.

**Keywords:** Hispanics/Latinos, cardiovascular disease, community health services, faith-based, community intervention, health promotion, Latino Community, and health workers
The Implementation of Faith-Based Heart Healthy Education Program for Latinos in Miami

**Introduction**

Cardiovascular disease (CVD), including heart disease and stroke, is the leading cause of death among Latinos (Koniak-Griffin, Brecht, Takayanagi, Villegas, Melendrez, & Balcazar, 2015, p. 447). Evidence shows that Latinos are more likely to be overweight or obese when compared to Non-Latinos (Beard, Chuang, Haughton, & Arredondo, 2016; Daviglus, Pirzada, & Talavera, 2014). Despite widespread information about optimal behaviors and lifestyle modifications to reduce cardiovascular risks, heart disease and other chronic illnesses continue to be higher among ethnic/racial minorities in the United States among individuals who identify as being as being Latino (Koniak-Griffin et al., 2015).

The influence of interventions that focus on heart-healthy habits is well documented as being effective in reducing the risk of cardiovascular disease; however, there is a lack of culturally tailored community-based programs that target Latinos in the Miami Dade metropolitan area. Community-based educational programs may promote positive lifestyle changes that decrease the prevalence of cardiovascular risk factors among Latinos.

**Background**

Latinos are the largest and fastest growing minority ethnic group in the United States (Brown et al., 2015). In Miami-Dade County, Hispanics account for 67.7% of the general population (United States Census Bureau, 2017). The evidence shows that Latinos tend to have higher proportions of poorly controlled blood pressure (BP) and a greater burden of cerebrovascular accident than non-Hispanic Whites (Brown et al., 2015).

Lower engagement in regular physical activity, sedentary lifestyle, lack of awareness of CVD preventative behaviors, and unhealthy dietary practices have been identified as factors that
contribute to the health status of the Latinos. They also experience disparities in prevention, treatment/access to treatment of cardiovascular disease. Several studies have shown that culturally appropriate lifestyle behavior interventions are effective in promoting healthy lifestyle changes among Latino individuals. Community-based studies involving promotoras/community health workers-led lifestyle behavior interventions using the Your Heart, Your Life (Su corazón, su vida) curriculum were shown to be effective in improving body mass index, weight, waist circumference, and blood pressure (Balcazar et al., 2009 as cited by Koniak-Griffin et al., 2015).

In 2010, Balcazar and colleagues conducted a randomized community trial involving Latino women with at least one cardiovascular risk factor using promotores who conducted classes based on the Su corazón, su vida curriculum (Koniak-Griffin et al., 2015). Participants who received the intervention based on the Su corazón, su vida curriculum had increased awareness of risk factors for cardiovascular disease, and more confidence in the control of those factors, improved dietary habits, and favorable cholesterol profiles in comparison to the control group (Koniak-Griffin et al., 2015).

The HealthyPeople 2020 goal for heart disease and stroke is to “improve cardiovascular health and quality of life through prevention, detection, and treatment of risk factors for heart attack and stroke; early identification and treatment of heart attacks and strokes; prevention of repeat cardiovascular events; and reduction in deaths from cardiovascular disease” (HealthyPeople 2020, 2018, para. 1). In keeping with the HealthyPeople 2020 goal, the DNP student proposed a faith-based, health-promotion educational intervention to address cardiovascular disease among Latinos in Miami-Dade, Florida.
Problem Statement

The risk of cardiovascular disease among Latinos in the United States as indicated by high rates of hypertension, diabetes, obesity, and other comorbidities is higher than average. The need for culturally sensitive and effective community-based interventions perpetuates a state of decreased knowledge/awareness of CVD in Latinos.

Organizational “Gap” Analysis of Project Site

The project was conducted at a local church in Miami-Dade County, Florida that serves a wide cross section of the community via various ministries, including a Spanish Ministry. The Spanish ministry consists of 60 members who identify as Latinos. The congregation consisted of 50% of males and 50% of females with at least 30% who were bilingual English and Spanish speakers. The church’s Spanish ministry held weekly meetings that focused on Bible studies and other aspects of life in the community. Parishioners ranged in age from 16 to 90 years old. Church leaders expressed that the health improvement project would be beneficial to both male and female members of the church, families, and community.

Review of the Literature

Current evidence was sought by searching Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed of the National Library of Medicine, Science Direct, and EBSCO. Studies included in this review were based on the initial search terms: Latinos, cardiovascular disease, and faith-based. The Medical Subject Headings (MeSH) used were Hispanics/Latinos and cardiovascular disease with a subheading of prevention and control, and faith-based. Additionally, the search terms cardiovascular disease, Latinos, and community health services were used to gain more insight into the issue of CVD in Latinos.
Inclusion criteria consisted of full text peer reviewed articles published in English within the last eight years, with references, abstract, and references available, which included a culturally appropriate intervention related to cardiovascular disease. Exclusion criteria included articles that were not published in English, were not available in full text or culturally appropriate, and those not related to cardiovascular disease, or its prevention. The goal was to identify culturally tailored, evidence-based interventions that were effective in increasing awareness of cardiovascular disease risk factors and reducing them, among Latinos.

The initial search yielded 1137 articles; after ensuring that all inclusions were accounted for, the search yielded 66 articles. Another search was done using the terms community intervention, health promotion, Latino community, and health workers. This search yielded 129 articles from which ten articles were selected for the literature review. Articles that met the inclusion criteria were linked to similar articles, which were also explored.

Cardiovascular disease is defined in PubMed as pathological conditions involving the heart, the blood vessels, or pericardium. The reports from the literature were consistent in demonstrating that cardiovascular disease (CVD) is a leading cause of death among individuals of Hispanic descent. Many interventions have been researched with an aim to address the disproportionate CVD risk among Latinos via education and physical activities; these were focused on influencing lifestyle changes to reduce modifiable risk factors for CVD.

**Lifestyle Health Promotion Intervention**

The WISEWOMAN trial is a well-executed, well-designed randomized control study (RCT) which involved the implementation of a 12-week lifestyle-change intervention to reduce cardiovascular risk factors (Khare, Cursio, Locklin, Bates, & Loo, 2014). The program was delivered to 180 low-income Hispanic women, (n=180) between the ages of 40 and 64 years old
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(Khare et al., 2014). Women who received the intervention showed improvements in blood pressure, physical activity, and dietary intake; fiber intake was increased, and fat intake was decreased (Khare et al., 2014). The intervention was not successful in effecting significant change in the intake of fruits and vegetables (Khare et al., 2014).

The outcomes that were sustained from this study after one year were decreased BMI and increased fiber intake (Khare et al., 2014). Physical activity levels returned to baseline after one year, which suggested that there was a need for more effective long-term strategies to assist the target population to sustain behavioral changes that help to reduce the risk for CVD. This article was deemed to be applicable because the benefits derived were found to be moderate to substantial, thus categorizing the findings as Level I, grade B based on the John Hopkins Nursing Evidence Based Practice (JHNEBP) evidence rating scale.

Community-Based Interventions

Educational Intervention

Altman, Nunez de Ybarra, and Villablanca, (2014) documented a four-month culturally appropriate community-based preventative cardiovascular educational program aimed at increasing the knowledge of and awareness of CVD, its symptoms, and risk factors by means of education, and demonstrating improvement in cardio-metabolic risk. The initial sample consisted of 42 Latino women, however the educational intervention was only completed by 35 women in its entirety (Altman et al., 2014). The study involved medical screenings, and risk behavior modification. Results showed that knowledge of CVD awareness was low at baseline but increased significantly post intervention ($p < 0.05$) (Altman et al., 2014). Participants also demonstrated improvement in serum triglycerides ($p < 0.05$), serum inflammatory markers ($p < 0.05$), and prevalence of metabolic syndrome-decreased from 43% to 37% of participants
Altman’s pilot study demonstrated effectiveness in increasing CVD awareness and improving cardiometabolic risks that exists among Latinos (Altman et al., 2014).

**Promotora-Led Intervention**

Community-based interventions aimed at reducing cardiovascular disease among Latinos are well documented. Most of the studies reviewed focused on low-income Latinos; many were facilitated or led by promotoras/community health workers. Promotora-led interventions to prevent cardiovascular disease risks have been conducted and evaluated by De Heer, Balcazar, Castro, and Schultz (2012), Balcazar, (2010, 2016) and Koniak-Griffin et al., 2015.

The potential cardiovascular health crisis among Latinos in the early 2000s led to the development of HEART (Health Education Awareness Research Team) trial, the first phase of a community-based participatory research initiative (Balcazar et al., 2010). This was a level IA randomized control community trial, which utilized the participatory research framework (Balcazar et al., 2010).

The intervention included eight educational classes from the Su corazón, su vida curriculum, that were delivered to the experimental group (n=192); the control group (n=136), who were given basic educational materials (Balcazar et al., 2010). The purpose of the study was to promote behavioral changes to reduce CVD among at risk Hispanic individuals in El Paso, Texas (Balcazar et al., 2010). Participants who attended the Su corazón, su vida sessions demonstrated increased awareness of CVD risk factors, more confidence in controlling the factors, and improved dietary habits, such as lower ingestion of salt and cholesterol, and better weight control practices in comparison to the control group (Balcazar et al., 2010). This research showed promising results of using promotores to deliver culturally appropriate education to limit the decrease the risk factors for Hispanics of a US Mexican border area (Balcazar et al., 2010).
In 2012, De Heer and colleagues evaluated the effectiveness of a promotora-led cardiovascular disease-prevention intervention among at-risk immigrants or first-generation U.S born Latino adults in the lower valley of El Paso, Texas. The sample included 328 Latino adults, whose ages ranged from 30-75 years-old, (Mean age 53 ± 13 years), who had at least one CVD risk factor (De Heer, Balcazar, Castro, & Schulz, 2012).

A culturally tailored Spanish model of Salud Para Su CórAzon (SPSC), translated Health for Your Heart curriculum, was used in the study (De Heer et al., 2012). Findings highlighted the positive relationship between family cohesion and support and physical health among Latinos and recommended that future research should focus on family-oriented interventions instead of taking an individual approach (De Heer et al., 2012). Although there was improvement in nutritional intake and health beliefs; participation in the study was not directly associated with decreased CVD risks (De Heer et al., 2012). The use of the SPSC curriculum enhanced information sharing beyond family members and was effective in improving community referrals, and screenings for cardiovascular (De Heer et al., 2012).

Phase Two of project HEART (Health Education Awareness Research Team), conducted using the Mi CórAzon, Mi Comunnidad module to guide 16 physical activity sessions, and the Su CórAzon, su vida curriculum that guided the 8 nutritional sessions (Balcazar et al., 2016). Best practice methods following guidelines from the CDC Task Force on Community Preventative Services were integrated in the program (Balcazar et al., 2016). This promotora-led study was graded as level IIIa evidence; results are consistent and generalizable Grade A guidelines according to John Hopkins nursing evidence-based practice, has sufficient sample size for the study design, definitive conclusions, and consistent recommendations (Dang & Dearholt, 2017).
It was conducted with an aim to promote the use of community nutrition and physical activity resources among Mexican American border residents at risk for CVD (Balcazar et al., 2016). The findings revealed the characteristics of participants who attended each presentation; individuals who attended the physical activity sessions were a high-risk population; they were noted to be overweight and greater than 50% were obese (Balcazar et al., 2016). Low acculturation was associated with increased attendance. The Su corazón, su Vida intervention had the highest attendance in comparison to the environmental activities; this may be attributed to its culturally tailored nature (Balcazar et al., 2016).

Lifestyle Behavioral Intervention

Koniak-Griffin et al. (2015) also utilized a culturally tailored behavioral lifestyle behavioral intervention for overweight Latinas with 223 women whose ages ranged from 35-64 years. Women who participated in this RCT, demonstrated improvements in dietary habits, physical activity, and waist circumference compared to the controlled group (Koniak-Griffin et al., 2015). In this study, the Su corazón, su vida curriculum also demonstrated success among low-income Latinas; a comparison of pre- and post-intervention scores revealed significant increase in knowledge of heart disease ($p < 0.001$) (Koniak-Griffin & Brecht, 2015).

In a study conducted by Schulz et al., a Walk Your Heart to Health (WYHH) intervention that was facilitated by community workers was utilized (Schulz et al., 2015). Groups met for three times during the week at a community/faith-based organization and walked for forty-five to ninety minutes. The intervention group significantly increased their physical activity compared to the control group ($p = .000$) (Schulz et al., 2015). The increased activity was associated with reductions in blood pressure, total cholesterol, waist circumference, fasting blood glucose, and body mass index (Schulz et al., 2015).
The article by Berra was selected because it provides a comprehensive documentation of reviewed literature regarding the effectiveness of various community-based healthy living interventions (Berra, Franklin, & Jennings, 2017). Pioneering community-based programs include the Stanford Three-Community and Five Cities studies that demonstrate the ability of community studies to effect positive lifestyle changes (Berra et al., 2017). The Stanford Five-City study of 1990 was a level I randomized control study conducted over a period of 14 years with a primary endpoint of changes in knowledge of cardiovascular risk factors (Berra et al., 2017). Results were self-reported using surveys at baseline and three years post intervention. Results included significant reductions with treatment in cholesterol, resting pulse rate, smoking rate, and blood pressure. CVD risk and total mortality risks were also decreased (Berra et al., 2017).

Improvements from faith-based organization programs include improvement in overall health status, blood pressure reduction, increased fruit and vegetable consumption, and weight loss (Berra et al., 2017). Faith-placed programs are those for which the intervention is conducted at a faith-based organization. Community-based interventions have the potential to reduce the enormous burden of CVD on individuals, society, and the economy (Berra et al., 2017).

Faith-Based Interventions

The results from faith-based interventions showed promise in decreasing health disparities among minority populations such as Latinos however, barriers to implementation of such studies exist (Beard, Chuang, Haughton, & Arredondo, 2016). Beard et al., (2016) conducted Faith in Action, which employed the use of multilevel interventions to determine factors that contributed to the implementation of effective physical activity programs in Hispanic church-going women. This randomized controlled community trial included participants from five Catholic churches
that were stratified based on the church size (Beard et al., 2016). The 134 parishioners received interventions including physical activity classes for six times per week. Each class was preceded by a prayer and ended with a health discussion that focused on healthy eating, injury prevention, importance of adequate water intake, and benefits of physical activity (Beard et al., 2016). Interventions also included individualized motivational interviewing phone calls aimed at motivating participants to develop personal strategies to change their lifestyle (Beard et al., 2016).

To be successful, Beard and colleagues found that leadership support and the availability of resources are critical (Beard et al., 2016). While this study revealed that church leaders may be open to implementation of health promotion programs, it only involved Catholic churches, hence may not be generalizable to other denominations. Nevertheless, since the study mainly involved Latinos, it does show that church-going Latinos are open to church-based interventions. In another study done by Brown and colleagues, faith-based health promotion interventions were successful in improving dietary habits thus decreasing risk factors for stroke among predominantly Hispanic Catholic parishioners (Brown et al., 2015).

Synthesis of Evidence

Culturally tailored interventions demonstrate effectiveness in increasing knowledge of CVD and influencing positive change in modifiable risk factors (Koniak-Griffin & Brecht, 2015; De Heer et al., 2012; Balcazar, 2010; Balcazar, 2016). The prevention of CVD in Latinos is dependent on being able to understand and communicate about the diversity, which exists in that population as it relates to health behaviors, socio-cultural experiences, and environmental factors relative to the burden of heart disease (Schneiderman, Chirinos, Aviles-Santa, & Heiss, 2014). This DNP project utilized a culturally appropriate educational intervention, based on the Su
córazon, su vida curriculum, in a faith-based setting. Faith-based interventions showed promise in decreasing healthcare disparities among minority populations including Latinos (Beard, Chuang, Haughton, & Arredondo, 2016). Studies conducted by Beard et al., (2016) and Brown et al., (2015) showed that church going Latinos are open to faith-based health promotion interventions. Furthermore, these studies were successful in improving dietary habits and physical activity (Brown et al., 2015).

An evidence-based practice intervention delivered in a community-based educational program was developed for the Latino population entitled “Su corazón, su vida”, translated “Your heart, your life” was used (Balcazar et al., 2010). This program consisted of culturally appropriate modules proven effective in increasing knowledge of cardiovascular disease among Latinos to increase knowledge in order to lower risks for cardiovascular disease through behavior/lifestyle modification. Elements of spirituality were also incorporated into the project through the inclusion of scripture verses.

**Theoretical Framework/Evidence Based Practice Model**

The theoretical framework for this project was the social cognitive theory (SCT) (see appendix A). According to this theory, learning takes place in a social context and involves a reciprocal interaction between the individual, the environment, and behavior in order to achieve a goal (Tougas, Hayden, McGrath, Huguet, & Rozario, 2015). Goal attainment involves cognitive processes that influence learning from external stimuli. The cognitive processes involved in the SCT are self-monitoring, self-judgment, and self-evaluation (Tougas et al., 2015).

Throughout the project, learning occurred through interaction with others and modeling of behaviors seen in others. Participants were exposed to successful demonstration of particular
behaviors, and felt that it was possible to recreate that behavior in their own lives successfully, over time. As a reminder of specific goals, participants completed a “commitment to my future form”. To maintain healthy behaviors, individuals were encouraged to have a sense of determination to achieve their particular goal. They were also encouraged to believe in their ability to perform the particular behavior by utilizing the knowledge about how to reduce cardiovascular risk factor and consequences that was acquired from the classes.

Behaviors can be affected by the learning environment and positive role modeling. Knowledge gained increased the participant’s ability to control self and their environment. The information that was presented in the project stimulated participants to reflect on behavioral factors that influenced personal choices related to CVD; as knowledge increased, the learning environment and feedback from other participants provided motivation for change in attitudes and behavior. According to the SCD individuals learn by observing the behavior of others and the outcomes of those behaviors.

Goals, Objectives and Expected Outcomes

The overarching goal of the DNP project was to increase knowledge regarding reducing cardiovascular disease and its risk factors by 20% and/greater than pre-CVD knowledge survey results between February and March, 2019. Individual goals are listed in appendix B.

The objectives for each session (see appendix C) were guided by the evidence-based information from the National Institute of Health’s publication “Your heart, your life: A community health worker’s manual for the Latino community (National Institute of Health [NIH], 2008).
Methods

This DNP project was a health improvement, educational intervention involving the implementation of a culturally appropriate evidence-based educational program. Four modules from the “Your heart, your life” community health worker’s manual were utilized (National Institute of Health [NIH], 2008). Classes were presented in both English and Spanish to Latinos at a local church in South Florida. Source materials for the project were already translated in Spanish by the National Institute of Health’s (NIH). Additional information was translated with the assistance of a bilingual Spanish-English health care professional. Classes were 90 minutes long and were held weekly for four consecutive weeks. Supplemental bilingual (Spanish and English) educational materials from the American Heart Association (AHA) were provided to all participants.

The CVD knowledge surveys were used to collect data at baseline (Appendix D) and at one-month follow-up (Appendix E). Baseline data included demographic information (place of birth, age, gender), and questions about general risk factors for cardiovascular disease related to cholesterol, type 2 diabetes, hypertension, and physical activity. The pre-survey also included self-reported blood pressure readings. The post-CVD knowledge survey was used to determine whether or not the intervention increased knowledge of cardiovascular disease and influenced behavioral changes to reduce cardiovascular risks.

The population included male and female adults who identified as being of Latino descent. Individuals needed to be able to comprehend educational material presented in English and/ or Spanish and participate for 60-90 minutes. Participants were recruited from among the parishioners, and within the community using convenience sampling with the help of fliers, weekly church announcements, word of mouth utilizing a recruitment script (see appendix F).
Quantitative and qualitative data were collected via face to face interviews using pre and post knowledge surveys which were modified versions of the HEART 2 questionnaire. The questionnaire was modified by the DNP student with permission from Dr. Hector Balcazar. (Appendix G).

**Measurement Instruments**

The Heart 2 questionnaire used to create the pre and post CVD knowledge surveys for data collection in this DNP project was developed by Balcazar et al., (2010). The questionnaire is valid and reliable and was approved for use in previous studies. The pre-CVD knowledge survey was used to measure the level of knowledge of project participants related to heart disease at baseline. In addition to assessing CVD knowledge, the pre- CVD survey confirmed participants’ ethnic eligibility for the project. Inclusion criteria included adult Latinos who were able to understand spoken Spanish or were bilingual English and Spanish speakers who were able to understand and follow instructions provided in either language. Voluntary participants had to be free of all cognitive impairment and be physically able to sit for 60-90 minutes to participate in educational classes, activities, and discussions.

Participants who met the criteria completed pre-CVD surveys prior to commencing the intervention. Alpha numeric codes were assigned for identification purposes, and the telephone numbers of participants were collected for follow-up at that time. The post-CVD survey was used to evaluate if learning occurred.

**Implementation**

Classes lasted for 60 to 90 minutes; translation increased the time frame for the presentations. The formats for the classes included PowerPoint presentations, fotonovellas, discussions, and interactive activities. The weekly topics were as follows:
1. Are you at risk for heart disease?

2. Take heart: Say Yes to physical activity

3. Keep your heart in Mind: Aim for a healthy weight

4. Take good care of your diabetes for life

Participants were encouraged to make a commitment to taking initiatives to improve their heart health. Each individual was asked to complete the “Commitment to my future form” (Appendix H) upon completion of the project, or after the class that was attended, if he or she was not able to attend all classes. After the form was completed, participants wrote their names, and addresses on postage paid envelopes, which were provided. The envelopes were deposited into in a sealed box with an opening at the top; no one had access to see the names. The box was taken to the local post office, and the contents were transferred to a mail-box one month after the project was completed. The commitment forms served to remind participants of specific pledges to improving their health that were made when they attended the culturally tailored intervention.

**Training the team.** The translator met with the DNP student weekly to review, edit, and rehearse PowerPoint presentations for each class. The Spanish module (Su corazón, su vida: Manual del promotor y promotora de salud) was provided to the translator. Contact information (email and mobile phone number) was provided to the translator in the event that she had questions about the project, prior to or during the implementation. It was important to the DNP student to ensure that the translator had a clear understanding of what was required for successful implementation of the project. After training was completed, the presentations were rehearsed each week. Rehearsal sessions helped to build confidence (Moran et al., 2017)
Ethical Considerations/Protection of Human Subjects

The University of Massachusetts, Amherst (UMass) Internal Review Board (IRB) approval was obtained prior to initiating the DNP project. All participants were protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA), which protects the privacy of patients’ health information. The DNP student and translator carefully followed the standards of care for implementing a health improvement project in a community setting. All information collected as part of evaluating the impact of this project did not include any potential patient identifiers.

Participants were asked to complete an informed consent prior to attending their first class (Appendix K). Confidentiality was assured by using alpha numeric codes to identify participants. The code list was kept in a private location on the DNP student’s password protected computer, and was accessible to her only. Electronic files containing identifiable information were password protected to prevent access by unauthorized users and only the DNP student had access to the passwords.

Individuals who were interested in participating in the project were informed about all aspects of the project, and what participation entailed. They were also informed that their privacy would be protected and no identifiable data would be documented on the surveys such as name or date of birth. Participants’ signatures and names were collected on the informed consent. Participants were informed about who would see the data, what it would be used for, and how confidentiality would be maintained. All data was stored in a locked drawer accessible only to the DNP student.
There was obviously always a risk that someone might identify personal or health issues discussed in class. At the start of each class, participants were asked not to share personal health information of fellow participants with others outside of the class setting. Participation was voluntary and participants were informed that they may leave at any time. The DNP student’s contact information was provided in the event that participants needed to ask questions or express concerns.

**Results and Outcomes**

Four, ninety-minute interactive educational classes were presented in English with immediate translation to Spanish with the assistance of a bilingual Spanish-English translator. The final number of participants included ten Latinos ranging in ages from 41-84 years. The average age of the participants was 59.6 years and the majority of attendees was female (n=7, 70%). Participants represented six Hispanic subgroups including Argentina, Colombia, Cuba, Guatemala, Mexico, and Venezuela. All participants were free of cognitive and physical impairment. Seventy percent of the participants were bilingual English and Spanish speakers, and 30% were exclusive Spanish speakers. Communication with the exclusive Spanish speakers was facilitated by the bilingual Spanish-English translator.

**Attendance**

Fliers were distributed at multiple locations and announcements were made about the heart healthy project at the local church, however only a few persons showed up on class days. Many had pledged to attend, but only five persons confirmed their attendance. Some individuals who confirmed their attendance eventually did not participate. Class attendance fluctuated throughout the project (see Table 1); only one participant attended all four classes out of the total number of
ten participants. Participants shared that due to personal commitments, they were not able to attend all classes.

Table 1. Class Attendance

<table>
<thead>
<tr>
<th>Code</th>
<th>Class 1</th>
<th>Class 2</th>
<th>Class 3</th>
<th>Class 4</th>
</tr>
</thead>
<tbody>
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<td>X</td>
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</tbody>
</table>

Cardiovascular Knowledge Assessment

Participants were evaluated for their basic knowledge of cardiovascular disease and risk factors using the pre-CVD-knowledge survey. Questions consisted of true and false, multiple choice, and open-ended items. Overall, the participants displayed a high level of knowledge about risk factors for cardiovascular disease (see Table 2). A low level of knowledge about diabetes being a risk factor for cardiovascular disease was observed. Diabetes was not perceived as a risk factor for heart disease by 60% of participants. Low scores were noted for the true or
false question “all risk factors for heart disease can be controlled”. Responses from seven out of ten participants were incorrect. The participants’ impressions of times to set aside for physical activity were noted to be greater or less than the time recommended by the American Heart Association (AHA). Responses varied widely.

**Table 2. Pre-Cardiovascular Knowledge Assessment**

<table>
<thead>
<tr>
<th>Knowledge Assessment Questions</th>
<th>Correct Response</th>
<th># Total Responses</th>
<th>Percentage of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart disease is not a serious health problem for Latinos</td>
<td>TRUE</td>
<td>10</td>
<td>60%</td>
</tr>
<tr>
<td>All risk factors for heart disease can be controlled</td>
<td>FALSE</td>
<td>10</td>
<td>30%</td>
</tr>
<tr>
<td>Age, gender, obesity, high blood pressure, not being physically active increase risk of heart disease and stroke</td>
<td>TRUE</td>
<td>9</td>
<td>90%</td>
</tr>
<tr>
<td>High cholesterol increases risk for cardiovascular disease.</td>
<td>TRUE</td>
<td>9</td>
<td>100%</td>
</tr>
<tr>
<td>Diabetes is not a risk factor for cardiovascular disease.</td>
<td>TRUE</td>
<td>10</td>
<td>40%</td>
</tr>
<tr>
<td>Type 2 Diabetes can be prevented and controlled</td>
<td>TRUE</td>
<td>10</td>
<td>100%</td>
</tr>
</tbody>
</table>
by making healthy food choices, being physically active, and taking medications as prescribed

| Hypertension is a risk factor for heart disease. | TRUE | 9 | 100% |
| Being physically inactive puts you at risk for heart disease | TRUE | 10 | 90% |
| A high waist measure (greater than 35 inches (88cm) in women and 40 inches (102cm) in men) increases your risk for heart disease | TRUE | 9 | 80% |
| Physical Activity: Time to set aside to lower chances of heart disease | 30 minutes | 9 | 30% |
| Physical Activity: Time to set aside to prevent unhealthy weight | 60 minutes | 9 | 10% |
| Physical Activity: Time to set aside to avoid regaining weight | 60-90 minutes | 9 | 10% |
Physical activity was identified as a risk factor for heart disease by nine participants compared to 10% who selected that this information was false. Knowledge regarding time that should be set aside for physical activity varied among participants. Close to 56% of participants documented that to lower chances of heart disease, individuals should set aside 20 minutes. About one third of participants shared that 30 minutes should be set aside and 11.1% documented that 60 minutes should be set aside. One person did not respond to this question.

To prevent unhealthy weight, participants’ responses ranged from 20-60 minutes. The median time provided by participants was 37.5 minutes. As far as percentages, 44.4% responded that 30 minutes should be set aside to prevent unhealthy weight; 3 or 30% of respondents documented that 60 minutes should be set aside to prevent unhealthy weight gain. The maximum time to be set aside to avoid regaining weight, ranged from 20 minutes to 120 minutes. The median time reported was 45 minutes. The minimum time to be set aside for physical activity to avoid regaining weight was 10 minutes. Responses to this question ranged from 10 minutes to 60 minutes (see Table 2 above).

Self-Reported CVD Risk Factors-Hypertension

In 2017, the American College of Cardiology (ACC) and the American Heart Association (AHA) issued new guidelines which redefined hypertension (AHA, 2019). Prior to this, hypertension was defined by a blood pressure reading of 140/90 mmHg or higher. A reading of 120/80 mmHg was considered to be “textbook normal”, and readings below 140/90 mmHg was considered to be normal, generally speaking. The new normal is a systolic blood pressure less than 120 mmHg and a diastolic blood pressure of less than 80 mmHg (AHA, 2019). Based on the new guidelines, a systolic blood pressure reading that ranges from 120-129 mmHg and a diastolic of 80-89 mmHg is now classified as pre-hypertension.
Using the new guideline as a reference, there was an underestimation of hypertension by project participants. Fifty percent reported a diagnosis of hypertension (n=5), although 70% of the baseline blood pressure readings were above 120 mmHg. (See table 3).

**Table 3. Self-Reported Blood Pressure Readings**

<table>
<thead>
<tr>
<th>Blood Pressure Systolic/Diastolic (mmHg)</th>
<th>Reported Diagnosis of High Blood Pressure (mmHg)</th>
<th>American Heart Association (AHA) Classification of Blood Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>120/80</td>
<td>No</td>
<td>Pre-hypertension</td>
</tr>
<tr>
<td>114/68</td>
<td>No</td>
<td>Normal</td>
</tr>
<tr>
<td>125/70</td>
<td>Yes</td>
<td>Pre-hypertension</td>
</tr>
<tr>
<td>120/78</td>
<td>Yes</td>
<td>Pre-Hypertension</td>
</tr>
<tr>
<td>143/93</td>
<td>Yes</td>
<td>Stage 2 High Blood Pressure</td>
</tr>
<tr>
<td>134/83</td>
<td>Yes</td>
<td>Stage 1 High Blood Pressure</td>
</tr>
<tr>
<td>91/66</td>
<td>No</td>
<td>Normal</td>
</tr>
<tr>
<td>105/70</td>
<td>No</td>
<td>Normal</td>
</tr>
<tr>
<td>140/70</td>
<td>Yes</td>
<td>Stage 2 High Blood Pressure</td>
</tr>
<tr>
<td>138/82</td>
<td>No</td>
<td>Stage 1 High Blood Pressure</td>
</tr>
</tbody>
</table>

All male participants reported a diagnosis of hypertension compared to 40% of the females. The highest reported systolic blood pressure was 143 mmHg and the lowest was 91 mmHg. The diastolic blood pressure readings ranged from 66 mmHg to 93 mmHg. The highest blood pressure reading was noted among the males (143/93 mmHg). Conversely, female participants reported lower blood pressure readings. Isolated systolic hypertension and systolic blood pressure are major risk factors for coronary heart disease (Wilson, 2019). Among the group, 20% reported systolic blood pressure readings of 140-143 mmHg. Hypertension is an established risk factor of CVD that is associated with adverse cardiovascular outcomes.
Major CVD risk factors that were reported included hypertension, hypercholesterolemia, and type 2 diabetes. Risk factors varied by age and gender. Large proportions of participants had at least one risk factor. The prevalence of the triad of hypertension, hypercholesterolemia, and type 2 diabetes was higher among males and accounted for two-thirds of male participants. The reported diagnosis of hypertension and hypercholesterolemia together was equally prevalent among males and females, at 10% from each group.

Reports of diabetes and high blood cholesterol were also obtained. Greater than three quarters of the participants reported being evaluated by a medical professional within the last year with the remainder of participants reported that screening was done within two and five years. It was observed that more males were evaluated within the last year compared to females, some of whom were last screened five years ago.

Participants without the diagnoses of hypercholesterolemia and type 2 diabetes were noted to wait for longer periods to be checked for diabetes and hypercholesterolemia with the exception of one self-reported diabetic participant who was last checked for diabetes within the past five years. It is unknown if the latter was an error in self-reporting (see table 4).

Table 4. Self-Reported Major CVD Risk Factors

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Hypertension</th>
<th>Hypercholesterolemia</th>
<th>Last Cholesterol Check</th>
<th>Diabetes</th>
<th>Last Diabetes Check</th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>Female</td>
<td>No</td>
<td>No</td>
<td>2018</td>
<td>N/A</td>
<td>2017</td>
</tr>
<tr>
<td>66</td>
<td>Female</td>
<td>No</td>
<td>No</td>
<td>2018</td>
<td>Prediabetes</td>
<td>2018</td>
</tr>
<tr>
<td>59</td>
<td>Male</td>
<td>Yes</td>
<td>Yes</td>
<td>2018</td>
<td>N/A</td>
<td>2018</td>
</tr>
<tr>
<td>84</td>
<td>Female</td>
<td>Yes</td>
<td>No</td>
<td>2018</td>
<td>Type 2</td>
<td>2014</td>
</tr>
<tr>
<td>41</td>
<td>Male</td>
<td>Yes</td>
<td>Yes</td>
<td>2018</td>
<td>Type 2</td>
<td>2018</td>
</tr>
</tbody>
</table>
Primary Mode of Physical Activity and Exercise Time

The primary reported mode of exercise for 60% of participants was walking. Jogging/running, biking, weight training, and none each had 10% (see Table 5). The number or hours that participants engaged in exercise per week ranged from zero to ten hours. Female participants exercised between 30 minutes and 10 hours per week; for male participants, 33% reportedly did not engage in any exercise, however reported that their primary mode of exercise was walking. It is unknown whether or not the question was not clearly understood by the individual. Another 33% exercised primarily with weight training. In total, two men out of the three documented that walking was their primary mode of exercise.

Table 5. Primary Mode of Exercise and Exercise Time

<table>
<thead>
<tr>
<th>Code</th>
<th>Gender</th>
<th>Primary Mode of Exercise</th>
<th>Hours Per Week of Exercise</th>
<th>Total No. of Days - Primary Mode of Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female</td>
<td>Walking</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>Biking</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>Male</td>
<td>Walking</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Female</td>
<td>Walking</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>
Female participants engaged in their primary form of exercise from 3-6 days per week. Male participants on the other hand worked out on less days per week (0-4 days). Forty percent of participants engaged in their primary form of exercise for three hours. Twenty percent exercised for two days/week, 10% engaged in exercise for five days, 10% for six days, and one participant reported that exercise was not done at all during the week (Table 5).

**Post Intervention Follow-Up**

Follow-up telephone interviews were conducted one month following the completion of the classes. All participants were contacted via telephone for the follow up interview, however only eight persons responded. Data demonstrated an increase in knowledge and awareness concerning risk factors for CVD. (see table 6).

**Table 6. Post-Cardiovascular Disease Knowledge Assessment**

<table>
<thead>
<tr>
<th>Post-knowledge Assessment Questions</th>
<th>Correct Responses</th>
<th>Total # Correct Responses</th>
<th>Percentage of Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 Male Weight-lifting</td>
<td>8</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>6 Male Walking</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>7 Female Walking</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>8 Female None</td>
<td>0.5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>9 Female Walking</td>
<td>8</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>10 Female Running</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Heart disease is not a serious health problem for Latinos</td>
<td>TRUE</td>
<td>8</td>
<td>100%</td>
</tr>
<tr>
<td>Age and gender are modifiable risk factors for CVD</td>
<td>FALSE</td>
<td>8</td>
<td>90%</td>
</tr>
<tr>
<td>Obesity or being overweight, high blood pressure, not being physically active increase the risk of heart disease and stroke</td>
<td>FALSE</td>
<td>8</td>
<td>100%</td>
</tr>
<tr>
<td>High cholesterol increases risk for cardiovascular disease.</td>
<td>TRUE</td>
<td>8</td>
<td>100%</td>
</tr>
<tr>
<td>Type 2 Diabetes can be prevented and controlled by making healthy food choices, being physically active, and taking medications as prescribed</td>
<td>TRUE</td>
<td>8</td>
<td>100%</td>
</tr>
<tr>
<td>Type 2 Diabetes is a risk factor for CVD</td>
<td>Strongly agree</td>
<td>8</td>
<td>100%</td>
</tr>
<tr>
<td>Hypertension is a risk factor for heart disease.</td>
<td>TRUE</td>
<td>8</td>
<td>100%</td>
</tr>
</tbody>
</table>
Physical activity for at least 30 minutes per day can lower chances of heart disease.

Prior to the classes, knowledge concerning diabetes as a risk factor was very low (40%). The classes were effective in increasing knowledge concerning type 2 diabetes as a risk factor for cardiovascular disease as evidenced by 100% of participants responding 8 and higher on a Likert scale that they strongly agreed that type 2 diabetes was a risk factor for CVD. Lowest score was noted in the response related to modifiable risk factors. One participant responded true to the question about age and gender being modifiable risk factors. Participants were well aware that physical activity for at least 30 minutes lowers chances of heart disease.

Post-intervention blood pressure readings following the heart-healthy classes demonstrated minimal changes (see table 7). Given the short duration of the project, the length of time was inadequate to conclude that changes in blood pressure were the direct result of lifestyle modifications associated with attending the classes.

Table 7. Pre and Post-Intervention Blood Pressure Readings

<table>
<thead>
<tr>
<th># Participants</th>
<th>Pre-Self-Reported Blood Pressure Systolic/Diastolic mmHg</th>
<th>Post-Self-Reported Blood Pressure Systolic/Diastolic mmHg</th>
<th>American Heart Association (AHA) Classification of Post-Project Blood Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>120/80</td>
<td>*None</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>120/78</td>
<td>119/77</td>
<td>Normal</td>
</tr>
</tbody>
</table>
Among the eight participants who responded to the follow-up phone calls, three had blood pressure readings that were within normal range and five reported measurements that were classified as being hypertensive. Compared to the pre-intervention data, there were fewer blood pressure readings within the Stage 2 classification post-intervention.

Physical activity among participants remained stable. Individuals who were active prior to the class remained active, while other participants either increased their physical activity minimally or not at all (see table 8).

**Table 8. Pre and Post Intervention Exercise Frequency**

<table>
<thead>
<tr>
<th>Participants</th>
<th>Gender</th>
<th>Hours per week of exercise (Pre-Intervention)</th>
<th>Exercise for at least 30 minutes 3 times per week (Post-Intervention)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Female</td>
<td>10</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>3</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>Male</td>
<td>8</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>Male</td>
<td>0</td>
<td>No</td>
</tr>
</tbody>
</table>
Greater than fifty percent of participants reported exercising for 30 minutes or more three times per week, post intervention (n=5). Other participants reported that exercise frequency had not changed and ranged from zero (n=1), to exercising at least 30 minutes twice per week (n=1). Participants who were not physically active on recommended days acknowledged the need/intention to either “start working out” or “to work out more”.

As it relates to lifestyle changes, half the number of those who participated in the follow-up expressed that since the classes, there was an increased consumption of fruits and vegetables. Additionally, they had taken two or more actions to improve their health and lower chances of developing heart disease. Examples of actions from participants included the following:

- “See the doctor for a physical”
- “Eat healthy, decrease carbs and eat more fruits and veggies”
- “Continue with exercise routine”
- “Try to exercise more”
- “Work on lowering stress levels with prayer and attending church services”
- “Improve sleeping habits”
- “Take medications as prescribed by doctor”
Discussion

The four educational classes based on topics pertaining to cardiovascular disease risk factors and consequences were well received. The availability of a translator and bilingual English-Spanish educational materials facilitated the learning of all participants; exclusive Spanish speakers had the opportunity to interact, learn, and understand the material well. Previous community-based educational studies that were culturally appropriate such as the Promotores de Salud intervention to reduce cardiovascular disease risk in a high-risk Hispanic population demonstrated increased awareness of CVD risk factors, more confidence in controlling the factors, and improved dietary habits, particularly lower ingestion of salt and cholesterol, and better weight control practices in comparison to the control group (Balcazar et al., 2010).

The four modules utilized from the community-based educational program developed exclusively for the Latino population entitled “Su corazón, su vida”, translated “Your heart, your life” proved to be effective in increasing knowledge and awareness of cardiovascular disease among Latinos. The increased knowledge assisted some participants to alter risks factors for cardiovascular disease by modifying their lifestyle and behavior towards heart health. Others still have intentions to change.

Outcomes were consistent with results of previous studies among Latinos that demonstrate that this population experience proportionately higher burden of cardiovascular disease (CVD) risk factors compared to non-Hispanics (Beard et al., 2016; (Daviglus et al., 2014). Major risk factors for cardiovascular disease are prevalent among Latino Americans despite initiatives to prevent heart disease in the United States of America (Daviglus et al., 2014). Among study participants, major risk factors for CVD included hypertension, hypercholesterolemia, type 2
diabetes, and physical inactivity. There was an underestimation of hypertension in light of the current ACC/AHA guidelines for hypertension.

Prior to the educational intervention, there was a lack of awareness of the new ACC/AHA guidelines that redefined hypertension. It is possible that the participants’ health care providers did not know about the new standards, or did not discuss the new guidelines with participants prior to being involved in the project. Furthermore, some participants had not seen a health care provider in over three years and this could also be a factor.

The project highlighted decreased awareness and knowledge of several aspects of cardiovascular disease e.g. there was decreased awareness that diabetes is a risk factor for heart disease. The latter may be due to the lack of culturally tailored programs for Latinos that are directed towards increasing knowledge about cardiovascular disease and its consequences. Following the intervention, participants articulated that diabetes was in fact a CVD risk factor. Knowledge related to times to be set aside for physical activity to reduce risk factors for heart disease, to prevent regaining weight, and to prevent unhealthy weight gain was limited prior to attending the heart-healthy classes. During follow-up interviews, 100% participants knew that at least 30 minutes or more of physical activity could lower chances of heart disease.

Participants at each class were very excited about the educational intervention and shared openly about their personal beliefs and health practices. The latter created a sense of support and community for participants and facilitated group learning. It also allowed them to know that they were not alone on the journey to making healthy lifestyle choices.
Limitations

Major limitations of the project included difficulties with scheduling the intervention, timeframe, and smaller number of participants than originally planned. The DNP project was initially planned to commence in November 2018, however due to circumstances beyond the control of the student and leaders, the class dates had to be rescheduled. The original plan was to teach five classes however, the DNP student had to decrease the number of classes due to schedule that was provided in February 2019. One day that was provided was one on which there were no church activities and this played a role in the decreased number of participants. The intervention was held on a Saturday which may not have been ideal for parishioners for multiple reasons.

The timeframe for this intervention was four weeks which was too short to evaluate the intended physiological end point of blood pressure, however participants reported changes in knowledge and awareness of cardiovascular disease, and heart-healthy behaviors.

Given the short timeframe of the project, it was not possible to use all modules from the “su corazón, su vida” training manual. Additional resources procured from the AHA allowed participants to have evidence-based materials that they could refer to long after the classes ended. Participants could also share the information with friends and family members who did not attend the classes.

Conclusion

The implementation of a culturally sensitive intervention was successful in increasing knowledge and awareness of CVD risk factors and sequelae among Latinos in a faith-based setting in Miami, Florida. The increased awareness served as motivation to taking initiatives
towards improving heart health. The project was also successful in influencing changes in dietary habits as indicated by increased intake of fruits and vegetables, however, it was not effective in changing habits related to recommended times for physical activity/exercise. The Latino population in the United States continue to experience higher proportions of poorly controlled blood pressure, high rates of diabetes, and obesity which increases their risk for cardiovascular disease. In an effort to preserve the health of the nation, and lower the future burden of CVD among Latinos, steps must be taken from all possible angles including places of worship, to prevent disease, and promote health and wellness among Latinos across the continuum of life.

This DNP project used culturally tailored materials from the NIH’s “Your heart, your life: A community health worker’s manual for the Latino community” (National Institute of Health [NIH], 2008). The information from the manual was augmented by the use of addition evidence-based information from sources including the CDC, and the American Heart Association (AHA). The material was public and did not require prior approval. The CVD knowledge survey was modified from the Heart 2 study questionnaires with permission from Dr. Hector Balcazar. The anticipated outcome from the project was to increase knowledge and awareness of CVD and its consequences, decrease blood pressure of participants, and to promote positive lifestyle behavioral changes.

The plan for dissemination of project outcomes upon completion included presenting the information to the project site, and additional Spanish churches in Miami-Dade. The goal is to expand this project to include Spanish and English-speaking congregations who are willing to host the classes. Four classes were presented in Homestead, Florida between March 22 and April 26, 2019 to an eager group of church-going Latinos, and a few exclusive English-speaking males and females. In total, 50 persons attended the heart health presentations. The classes were
described as being “educational, motivational, and entertaining”. Following the classes, leaders announced plans to start Zumba classes in an effort to increase physical activity of the parishioners, consider starting a health ministry to keep parishioners informed about health issues, and serve healthier food at gatherings at the church. It was stated that food is a major part of the Latino cultures, however, it is important to make healthier choices.

Implications and Recommendations

Approaches to decreasing the CVD risks among Latinos should involve interventions that incorporate the entire family and focus on utilizing culturally tailored information that targets specific or desired behavioral changes. Initiatives to prevent heart disease should begin early in life in an attempt to create a culture of healthy behavioral practices and habits. Additionally, future culturally appropriate faith-based interventions that focus on cardiovascular disease prevention among Latinos should be conducted for a period of six months or more.

DNP projects support the improvement of health care quality (Anderson, Knestrick, & Barroso, 2015). Future projects should offer the educational intervention for longer periods of time to allow for increased assimilation, and opportunities to optimize learning, and successfully modify lifestyle behaviors. Researchers should aim to move beyond a goal to just increase knowledge of participants. Knowledge alone is not sufficient in actualizing positive behavioral changes. Many knowledgeable individuals perpetuate negative lifestyle behaviors. There seems to be a disconnect between knowledge and active engagement in healthy behaviors. Given the high burden of cardiovascular disease on the American population and other societies, researchers need to discover strategies that really work to effect sustainable change.

Those who choose to implement faith-placed interventions should ensure that they are conducted on days when regular services are held. Recruitment for participants should involve
more than the use of fliers and regular church announcements; it may be helpful to collaborate with community and religious leaders to gain. It may also help to create a team of individuals that would be willing to visit homes within Latino communities to share information about the project, with particular focus on its potential to improve overall health and wellness. The Latino community is unique, investigators must take the time to learn about the Latino culture and core values; this will help to create trusting relationships.

An additional recommendation is to engage health care professionals/community workers who are members of places of worship to become involved in educating parishioners about heart health and other chronic diseases that are prevalent within the population served. Studies involving community workers (promotores de salud) have shown success in increasing awareness and knowledge about cardiovascular disease and in the promotion of positive lifestyle changes (Balcazar et al., 2010).

The church was also encouraged to establish a health ministry that would be responsible for health-related educational initiatives related to increasing awareness and knowledge about health risks and preventative measures for parishioners and the Latino community at large on a regular basis. A faith-placed health ministry would be designed to provide support services to individuals, and families within the community such as linking individuals in need to free or low-cost health care services, and encouraging persons with health insurance to engage in preventative health care practices or seek professional medical help to care for chronic health conditions.

Places of worship are ideal locations for individuals to who need to find solutions to a myriad of problems; the health ministry could provide useful tools/resources to equip individuals to be more knowledgeable about health and self-care. Inevitably, individuals who are invested
and committed to improving their physical health and wellbeing would derive tremendous benefits. In other words, individuals who are exposed to health ministry would possibly be better able to care for their physical bodies while they seek to enrich their souls. The church leaders would have the option to customize the health ministry and add their own personal flare to meet the needs of the population served. The concept of the faith-place health ministry would not be a one size fits all.

**Setting Facilitators and Barriers**

The facilitators of the project included the pastor, his wife, and one additional member from the church who assisted with the distribution of fliers, and assisted with sending email notifications/reminders to parishioners about the project. The church had adequate parking space, available bathrooms, and many rooms with adequate seating. The room that was provided to be used for the project was equipped with a large flat screen television, a lectern, and adequate numbers of chairs and tables for comfortable seating. The DNP student was authorized to post signage that directed participants to the class location. Financial compensation was not required for the use of the facility and its resources.

Barriers included class schedules, lack of time, and lack of interest. Classes were held on Saturday evenings and unfortunately some parishioners worked on that day; it was also a day on which others attended to personal, and family matters. Despite the health disparities related to cardiovascular disease among the Latino population, the incentive of free educational materials, and free healthy snacks, participants mentioned that overall, there was a general lack of interest in health preventative programs among Latinos.

**Cost-Benefit Analysis/Budget**
The cost for the project was $1962.00; this includes the cost for transportation, educational brochures/publications, stationery materials, and supplies, and healthy snacks for each week (see appendix I). The translator services were volunteered. The expense for use of the project site’s audiovisual aids, electricity, and use of the facility was offset by the facility which did not charge for hosting the health-promotion DNP project. Healthy cost-effective refreshments were provided after each class. Financial resources for the project was assumed by the DNP student.

**Timeline**

The DNP project was approved by the UMass IRB in September, 2018. Recruitment occurred during January and February 2019. The project was implemented in February, 2019. Data was collected over a period of four consecutive weeks, and was analyzed in March 2019. Following the latter, the DNP student embarked upon writing the final paper, with plans to present the project findings in May, 2019 (see appendix J).
References


https://doi.org/http://dx.doi.org/10.5888/pcd15.170347


https://doi.org/10.1016/j.pcad.2014.07.006

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THE IMPLEMENTATION OF A FAITH-BASED HEART HEALTHY


Retrieved from


Appendix A

Social Cognitive Theory

Behavior

Environmental Factors

Personal Factors

Behavioral Factors

Reinforcement:
- Perceived Consequences
- Vicarious Reinforcement
- Self-Reinforcement

Observational Learning:
- Attentional Processes
- Retentional Processes
- Motor Reproductive Processes
- Acquisitional Processes

Outcome Expectations
- Performance Accomplishments
- Vicarious Experience
- Verbal Persuasion
- Physiological State

Efficacy Expectations:
- Performance Accomplishments
- Vicarious Experience
- Verbal Persuasion
- Physiological State

Self-Observation
- Self-Judgment
- Self-Reaction
Appendix B

Project Goals

1. **Goal:** Increase Latino’s knowledge of heart health, heart disease, and risk factors
   
   **Objective:** Latinos will be educated about risk factors of cardiovascular disease and risk factors and how to prevent them via presentation and handouts and demonstrate increased knowledge through pre- and post-education questionnaires.

2. **Goal:** Latinos will be motivated to incorporate healthy lifestyle choices into their daily lives
   
   **Objective:** Latinos will be educated on the importance of physical activity in preventing cardiovascular disease and will demonstrate increased knowledge through a post CVD knowledge survey.

3. **Goal:** Latinos will demonstrate increase in positive attitudes and behaviors toward making healthy lifestyle changes

4. **Goal:** Latinos will increase adoption of healthy lifestyle behaviors
   
   **Objective:** Latinos will self-report behavioral changes one to three months post educational intervention by naming two to five actions that have been done to improve overall health and lower chances of developing heart disease via completing a questionnaire.

5. **Goal:** Decrease high blood pressure
   
   **Objective:** Latinos will self-report changes in blood pressure reading during follow-up phone call
Appendix C

Session 1: Are you at risk for cardiovascular disease?

Objectives

By the end of this session, Latino parishioners will:

■ Know about the “My Heart, My Choice, Our Future” intervention.

■ Know how the heart works and its importance.

■ Know that heart disease can be prevented.

■ Be able to name six risk factors for heart disease that can be prevented.

■ Know other group members.

Session 2: Take Heart: Say YES to physical activity

Objectives

By the end of this session, Latinos will learn that:

■ Physical activity is good for the heart and overall health.

■ Adults should be physically active for 30 to 60 minutes on most days.

■ Children and adolescents should be physically active for about 60 minutes on most days, preferably daily.

■ Brisk walking is a simple activity nearly everyone can do.

■ There are ways to fit more activity into a busy schedule.

Session 3: Keep your heart in mind: Aim for a healthy weight

Objectives
By the end of this session, Latinos will learn that:

■ Being overweight is a risk factor for high blood cholesterol, high blood pressure, diabetes, heart disease, and stroke.

■ Healthy weights are given in ranges.

■ Losing weight or keeping a healthy weight means making lifelong changes.

■ Fad diets usually do not work over the long term and can be harmful.

Session 4: Protect Your Heart: Take Good Care of Your Diabetes for Life

Objectives

By the end of this session, Latinos will learn:

■ What diabetes is and how it affects the body

■ The symptoms of diabetes

■ That diabetes is a major risk factor for heart disease

■ The levels of blood glucose (blood sugar) and what they mean

■ How to prevent and control diabetes

■ The amount of sugar in common beverages
Appendix D

My Heart, My Choice, Our Future

Pre-CVD Knowledge Survey

Interviewer: _______________ Subject ID: _______ Date of the interview: ___ /___/___

Interview Type: □ Baseline

Section A – DEMOGRAPHIC INFORMATION

1. Where were you born? ________________________________

2. What is your age? ________________

3. Gender: □ Male01 □ Female02

Section B-RISK FOR HEART DISEASE (GENERAL INFORMATION)

1. True or False Heart disease is not a serious health problem for Latinos in the United States.

2. True or False All risk factors for heart disease can be controlled

3. True or False Multiple risk factors (e.g. age, gender, overweight/obesity, high blood pressure, not being physically active) increase risk of heart disease and stroke

Section B– CHOLESTEROL

4. True or False Blood cholesterol is a fatty substance found in the blood. High cholesterol increases risk for cardiovascular disease.

5. Have you ever had your blood cholesterol checked? (Equivalent to item 1 in the HEART CVD Risk Index)

□ No00
□ Yes, within the past year01
□ Yes, within the past 2 years (more than 1 year, but less than 2 years ago)02
□ Yes, within the past 5 years (more than 2 years, but less than 5 years ago)03
□ Five or more years ago04
□ Don’t know07
6. Have you ever been told by a doctor, nurse, or other health professional that your blood cholesterol is high?

   - [ ] No
   - [ ] Yes
   - [ ] Don’t know

Section C – DIABETES

1. **True or False** Diabetes is not a risk factor for cardiovascular disease.

2. **True or False** Type 2 Diabetes can be prevented and controlled by making healthy food choices, being physically active, and taking medications as prescribed by your health care provider.

3. Have you ever been screened for diabetes? (Equivalent to item 2a in the HEART CVD Risk Index)

   - [ ] No
   - [ ] Yes, within the past year
   - [ ] Yes, within the past 2 years (more than 1 year, but less than 2 years ago)
   - [ ] Yes, within the past 5 years (more than 2 years, but less than 5 years ago)
   - [ ] Five or more years ago
   - [ ] Don’t know

4. Have you ever been told by a doctor that you have diabetes? **In case you are a woman,** was this only when you were pregnant? (Equivalent to item 2b in the HEART CVD Risk Index)

   - [ ] No
   - [ ] Yes
   - [ ] Yes, but only during pregnancy
   - [ ] No, but I was told I have pre-diabetes or borderline diabetes
   - [ ] Don’t know

Section D – HYPERTENSION

1. **True or False** Hypertension is a risk factor for heart disease.

2. Have you ever had your blood pressure checked?

   - [ ] No
   - [ ] Yes, within the past year
   - [ ] Yes, within the past 2 years (more than 1 year, but less than 2 years ago)
   - [ ] Yes, within the past 5 years (more than 2 years, but less than 5 years ago)
   - [ ] Five or more years ago
   - [ ] Don’t know
3. Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure? **In case you are a woman**, was this only when you were pregnant?
   - No
   - Yes
   - Yes, but only during pregnancy
   - No, but I was told I have borderline high blood pressure or pre-hypertension

   **Baseline BP**
   ________/______

---

**Section E – EXERCISE**

1. **True or False** Being physically inactive puts you at risk for heart disease

2. How much time should be set aside for daily moderate physical activity to
   a. Lower chances of heart disease? At least ______minutes daily
   b. Prevent unhealthy weight? Up to___________ minutes
   c. Avoid regaining weight? _________ to ________ minutes

3. **True or False** A high waist measure (greater than 35 inches (88cm) in women and 40 inches (102cm) in men) increases your risk for heart disease

4. What is your primary mode of exercise?
   - Walking
   - Jogging/Running
   - Biking
   - Swimming
   - Weight Training
   - Other

Specify: _______________________________________________

5. How many hours a week do you exercise? __________________

6. How many days per week do you engage in your primary form of exercise?
Appendix E
Your Heart, Your Choice, Your Future
Post CVD Knowledge Survey

Interviewer: ____________________ Subject ID: _______ Date of the interview: _____ /____/____

Interview Type: ☐ 1-Month follow-up

Section A – DEMOGRAPHIC INFORMATION

1. Where were you born? ________________________________

2. What is your age? _________________

3. Gender: ☐ Male ☐ Female

Section A-RISK FOR HEART DISEASE (GENERAL INFORMATION)

7. True or False Heart disease is a serious health problem for Latinos in the United States.

8. True or False Age and gender are modifiable (things you can change) risk factors for heart disease.

9. True or False Obesity or being overweight, high blood pressure, not being physically active are non-modifiable (things you cannot change) factors that increase the risk of heart disease and stroke

Section B– CHOLESTEROL

10. True or False High cholesterol increases risk for cardiovascular disease.

Section C– DIABETES

11. Diabetes increases the risk of heart disease

Strongly disagree ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10 Strongly agree

12. True or False Type 2 Diabetes can be prevented and/controlled by making healthy food choices, being physically active, and taking medications as prescribed by your health care provider
Section D – HYPERTENSION

13. True or False Hypertension is a risk factor for heart disease.

Follow-Up BP

______/_______

☐ BP Decreased
☐ BP Increased
☐ BP remain unchanged

Section E – EXERCISE

14. True or False Physical activity for at least 30 minutes per day can lower chances of heart disease.

15. Do you exercise for at least 30 minutes 3 times per week?  ☐ Yes  ☐ No

Other Lifestyle Changes

16. Do you eat at least five fruits and vegetables a day?  ☐ Yes  ☐ No

17. What actions have you taken to improve your overall health and lower chances of developing heart disease?

_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
Appendix F

Recruitment Script and Flier

Recruitment Script for My Heart, My Choice, Our Future
A Faith-Based Heart Healthy Educational Program for Latinos in Miami

Adult Latinos-Males and Females are invited to participate in a Doctor of Nursing Practice research project that will be held at Old Cutler Presbyterian Church Spanish Ministry. The purpose of the project is to increase knowledge and awareness of risk factors and possible consequences of cardiovascular disease in Latinos by implementing culturally appropriate/relevant educational classes which will be taught in English and Spanish. The topics for the classes are as follows:

1. Are you at risk for heart disease?

2. Act in time of a heart attack

3. Take heart: Say Yes to physical activity

4. Keep your heart in Mind: Aim for a healthy weight

5. Take good care of your diabetes for life

For further details contact Cassandra Zacke at 305-772-1529 or via email at czacke@umass.edu.

If you agree to participate, you will be asked to complete an informed consent, a pre-survey, attend 5 classes, and complete a post survey 3 months after the classes have been completed via a phone call. You will also be asked to self-report blood pressure readings at baseline and after the classes during a follow-up phone call. You will also be asked to complete a commitment form, stating changes that you intend to make to improve your lifestyle in an effort to reduce risk factors for heart disease. Free refreshment and educational materials will be provided.
COMING THIS SPRING!
MY HEART, MY CHOICE, OUR FUTURE:
A 4-CLASS EDUCATIONAL SERIES ON PREVENTING HEART DISEASE AMONG LATINOS

Please join UMASS-Amherst Doctor of Nursing Practice Student who will be presenting educational classes for her doctoral project aimed at preventing heart disease among Latinos. Classes will taught be in English and Spanish.

All Latinos are welcomed to participate in this project.

Registration required!

Call 305-772-1529 for details
Appendix G

COLLEGE OF NURSING
University of Massachusetts Amherst
Skinner Hall
651 North Pleasant Street
Amherst, MA 01003-9299

April 27, 2018

To Whom It Concern;

My name is Dr. Hector Balcazar and I am currently offering my expertise and guidance as a specialist in Hispanic/Latino public health, to FNP-DNP student, Cassandra Zacke. Mrs. Zacke is proposing to utilize modules from the NIH “Your Heart, Your Life” manual for her DNP project which will target the Latinos in South Florida. The NIH modules do not require authorization and may be used by the student. The modules are culturally appropriate and are available in both English and Spanish.

Additional resources that were shared with Cassandra includes the HEART Project and the HEART 2 questionnaires. I am hereby authorizing Cassandra to modify and use the questionnaires as needed for her project.

Please feel free to contact me if you have any questions regarding this authorization.

Regards,

Sincerely,

Hector Balcazar, M.S., Ph.D.,
Dean, College of Science and Health
Charles R. Drew University of Science and Health
1731 East 120th Street. Los Angeles, CA 90059
Appendix H

Commitment to My Future

I have learned that I can do many things to improve my health and lower my chances of developing heart disease. I can help family members make healthy choices, too. During the next 1-3 months, I will try to do these things to care for my heart:

1. _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

2. _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

3. _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

4. _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

5. _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

Signed _____________________

Date: _____________________
Appendix I

Budget Table

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<th>Items</th>
<th>Cost</th>
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<td>Transportation $0.66 per mile x 50 miles x 15 trips</td>
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<tr>
<td>Materials and Supplies (copy paper and printer ink)</td>
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<tr>
<td>Telephone (mobile) and use</td>
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</tr>
<tr>
<td>Meetings/Presentations (folders and weekly handouts)</td>
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</tr>
<tr>
<td>Simple Refreshments (fruit, vegetables, healthy carbohydrates, and water)</td>
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</tr>
<tr>
<td>Publication costs (brochures purchased from Krames Staywell)</td>
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<td>Total</td>
<td>$1962.00</td>
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### Appendix J

**Timeline**

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<th>Task</th>
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<th>February</th>
<th>March</th>
<th>April</th>
<th>May</th>
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<tr>
<td>Recruitment of eligible participants</td>
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<td>X</td>
<td></td>
<td></td>
<td></td>
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<td>Training</td>
<td>X</td>
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<tr>
<td>Intervention; Evaluation; Toolkit</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-test and Analysis of outcomes</td>
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<td></td>
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<td>X</td>
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<td>Results presented to local providers</td>
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Appendix K

Consent Form for Participation in a Research Study
University of Massachusetts Amherst

DNP Student/Researcher: Cassandra Zacke

Study Title: Your Heart, Your Choice, Your Future
Implementation of a Faith-Based Heart Healthy Education Program for Latinos in Miami

1. What is this form?
“This form is called a Consent Form. It will give you information about the study so you can make an informed decision about participation in this research.”

This consent form will give you the information you will need to understand why this study is being done and why you are being invited to participate. It will also describe what you will need to do to participate and any known risks, inconveniences or discomforts that you may have while participating. We encourage you to take some time to think this over and ask questions now and at any other time. If you decide to participate, you will be asked to sign this form and you will be given a copy for your records.”

2. WHO IS ELIGIBLE TO PARTICIPATE?
All adult Latinos (male and female) are eligible to participate. Participants must be at least 18 years old and must be free of cognitive impairment of any kind.

3. WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this research study is to increase knowledge and awareness of risk factors and possible consequences of cardiovascular disease in Latinas by implementing a culturally appropriate/relevant educational intervention.

4. WHERE WILL THE STUDY TAKE PLACE AND HOW LONG WILL IT LAST?
The project will be conducted at the Old Cutler Presbyterian Church Spanish Ministry, Florida. Each session will last for 45-60 minutes for a total of five hours (maximum 1 hour per session). It will take between 10-15 minutes to complete each survey (pre-survey and post-survey).

5. WHAT WILL I BE ASKED TO DO?
If you agree to take part in this project, you will be asked to sign your name to the bottom of an informed consent for participation, complete a baseline survey (pre-cardiovascular knowledge survey) which includes demographic information (except name on the survey) and basic
questions about heart disease prior to the implementation. You will also be asked to report/document your baseline blood pressure reading on the pre-survey. Your date of birth will not be collected. You will be assigned a number code which will serve to identify you; when the code is assigned, you will be asked to provide your telephone number. After the classes end, you will be asked to participate in a voluntary telephone follow-up which will occur three months following the completion of classes. At that time, you will be asked to complete a post-cardiovascular knowledge survey (includes basic questions about heart disease, based on information from classes, and lifestyle changes made since attending the class); you will once again be asked to self-report your blood pressure reading since attending the class. You may skip any question you feel uncomfortable answering.

6. What are my benefits of being in this study?
There may be no direct benefits to participants from participating in this study.

7. WHAT ARE my RISKS OF being in THIS STUDY?
As a project participant there may be a risk for breach of information related to your attendance (meaning that other attendees will be aware of your participation in the class), and personal health problems that may be shared in class. At the beginning of each class, participants will be asked not to share any information about participants with anyone outside of the project.

As a result of the project you may be seated for the duration of the educational session i.e. 45-60 mins. Standing and moving around may also be involved during interactive class sessions.

9. WHAT IF I HAVE QUESTIONS?
Take as long as you like before you decide to participate. We will be happy to answer any question you have about this project. If you have further questions about this project or if you have a research-related problem, you may contact the researcher(s), Cassandra Zacke at 305-772-1529 or email her at czacke@umass.edu or Dr. Pamela Aselton at 1-413-545-5089 or email her at paselton@nursing.edu. If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.

8. How will my personal information be protected?
The following procedures will be used to protect the confidentiality of your study records (pre and post cardiovascular knowledge survey). The researchers will keep all study records, including any codes to your data, in a locked drawer. Research records will be labeled with a code. A master key that links participants identification codes to their surveys will be maintained in a separate and secure location and will be accessible only to the DNP student. The master key will be destroyed (3) years after the close of the study All electronic files such as databases, spreadsheets, etc.) containing identifiable information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the DNP student will have access to the passwords. At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and you will not be identified in any publications or presentations.
In the event that you are deemed to be a risk of danger to self or others confidentiality cannot be guaranteed.

10. CAN I STOP BEING IN THE STUDY?
This project is voluntary and so you can stop whenever you would like. You do not have to be in this study if you do not want to. If you agree to participate in the project, but later change your mind, you may drop out any time. There are no penalties or consequences of any kind if you decide that you do not want to participate.

11. WHAT IF I AM INJURED?
The University of Massachusetts does not have a program for compensating subjects for injury or complications related to human subjects’ research, but the study personnel will assist you in getting treatment.

13. SUBJECT STATEMENT OF VOLUNTARY CONSENT
When signing this form, I am agreeing to voluntarily participate in this project. I have had a chance to read this consent form, and it was explained to me in a language which I use and understand. I have had the opportunity to ask questions and have received satisfactory answers. I understand that I can withdraw at any time. A copy of this signed Informed Consent Form has been given to me.”

Participant Signature: _____________________  Print Name: _____________________  Date: _________________

By signing below, I indicate that the participant has read and, to the best of my knowledge, understands the details contained in this document and has been given a copy.

Signature of Person Obtaining Consent: _____________________  Print Name: _____________________  Date: _________________