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# Effects of a Parish Based Heart Healthy Education Program

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**VALPO**

**EFFECTS OF A PARISH BASED HEART HEALTHY EDUCATION PROGRAM**

by

**KRISTIN A. KILINSKI, BSN, RN, DNP STUDENT**

**EVIDENCE-BASED PRACTICE PROJECT REPORT**

Submitted to the College of Nursing

of Valparaiso University,

Valparaiso, Indiana

in partial fulfillment of the requirements

For the degree of

**DOCTOR OF NURSING PRACTICE**

2014

*Kristin A. Kilinski* *May 2, 2014*  
Student Date

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Advisor Date

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## **DEDICATION**

This paper is dedicated to my husband Jim and son Kyle. Thank you for your endless love, support, and encouragement. I would never have made it through this journey without the two of you. I would also like to thank my parents for their endless support and love. A big thank you to my dear friends: Jennifer, Lauren, and Sarah. Many people will walk in and out of your life, but only true friends will leave footprints in your heart.

## **ACKNOWLEDGMENTS**

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## ABSTRACT

Cardiovascular disease is the leading cause of mortality and morbidity in the United States. Some risk factors for cardiovascular disease can be modified which include: diet; physical activity; smoking; hypertension; diabetes; and weight. Various national programs, such as “Go Red for Women” and “Let’s Move,” have been implemented to address this growing epidemic. Community programs are needed as an adjunct to these national initiatives. Thus, a parish based cardiovascular disease educational program would provide for a unique socially and spiritually supportive environment for education at the community level. Research findings indicate that parish based educational programs are effective in increasing health knowledge of participants. The Health Belief Model and the IOWA model served as frameworks to support implementation of this Evidence Based Practice (EBP) project. The National Heart, Lung and Blood Institute’s “Ten Commandments for a Healthy Heart,” was utilized as the 20 minute educational platform. A convenience sample of 20 parishioners from a Midwestern, Roman Catholic Church was obtained to assess knowledge gained from the 20 minute heart healthy education session. A cardiovascular disease knowledge questionnaire evaluated baseline and post education intervention knowledge. Resulting data were analyzed using descriptive statistics and a paired *t*-test to compare baseline and post education intervention knowledge scores. Results indicated a statistically significant improvement between baseline and post education intervention test scores ( $p < .000$ ). The findings of this EBP project support implementing parish based educational programs. The Advanced Practice Nurse, as a healthcare professional, can replicate this EBP project to provide education at the community level.



## CHAPTER 1

### INTRODUCTION

#### BACKGROUND

The Centers for Disease Control and Prevention [CDC] (2013) estimate that 600,000 people die of heart disease annually in the United States. With almost 715,000 Americans having a heart attack each year, this comes as no surprise that heart disease is the leading cause of death for both men and women (CDC, 2013). Many of these cardiac events and deaths can be avoided or eliminated with education focused on identifying and reducing modifiable cardiovascular disease risk factors. These modifiable and controllable cardiovascular risk factors include: high blood pressure; high cholesterol; cigarette smoking; diabetes; poor diet; physical inactivity; and obesity (USDHHS, 2013). A goal of Healthy People 2020 is to increase the overall cardiovascular health in the United States population (USDHHS, 2013). With this in mind, Healthy People 2020 set a national goal to reduce the number of deaths to 100.8 deaths per 100,000 from 126.0 deaths per 100,000 (USDHHS, 2013). Critical steps in the process to meet this national goal are for prevention, detection, and modification of cardiovascular disease risk factors (USDHHS, 2013).

Cardiovascular disease (CVD) places a hefty financial burden on the healthcare system. The CDC (2013) estimates that coronary heart disease costs the United States \$108.9 billion each year. This burdensome cost accounts for health care services, medications, and lost productivity (CDC, 2013). With the changing healthcare system, there is an increased need to implement cost containment measures and provide preventable healthcare. The American Heart Association [AHA] (2011) estimates that the cost of treating heart disease will triple by 2030. "The skyrocketing financial burden makes it urgent to implement effective strategies to prevent heart disease" (AHA, 2011).

In addition, the changing economic climate has placed many Americans without medical coverage or limited access to healthcare. This provides a barrier to receiving preventative healthcare and screening opportunities. Healthcare professionals need to be innovative in creating ways to reach at risk populations and for those with limited healthcare access to provide preventative healthcare measures. National Clearinghouse Guidelines (2011) have recommended that healthcare professionals become active at the community level to address these concerns. This means that healthcare professionals can develop partnerships within the community to promote optimal health and longevity of life. This Evidence Based Practice (EBP) project provides an avenue to unite healthcare professionals with the community to address healthcare issues.

Various strategies to reduce the mortality and morbidity of cardiovascular disease have become increasingly popular. National organizations, such as the AHA and the CDC, have implemented public awareness programs to publicize this epidemic. For example, the month of February is devoted to “Go Red for Women” to encourage awareness of women and heart disease. Other national campaigns are offered to reduce risk factors by encouraging physical fitness and healthy eating patterns. First Lady, Michelle Obama, has set forth a national program called “Let’s Move” to improve the wellness of our children. This program focuses on nutritional education and encouragement of physical fitness in youth. The Doctorate in Nursing Practice (DNP) student identifies that an educational program at a smaller scale needs to be implemented. National efforts combined with local community efforts are a perfect blend to bring cardiovascular disease awareness and education to the public.

### **Statement of the problem**

The DNP student identified a need for educational and awareness programs at the community level. Thus, the DNP student proposed a community educational program focused at a local parish to increase awareness and provide education to

reduce negative cardiovascular disease outcomes. The literature review has demonstrated that multiple community educational programs have been successfully implemented at parish based settings. The idea to combine educational programs and faith has been well-established. For example, "The Heart and Soul Physical Activity Program (HSPAP) is a parish based intervention that incorporates faith, spiritual messages, and prayer to change health behavior in women" (Peterson, 2011, p. 65). Another successful community based program, "Faithfully Fit Forever" incorporated faith, education, and health promotion (White, Drechsel, and Johnson, 2006).

The May 27<sup>th</sup> 2013 edition of The Times of Northwest Indiana publicized the results of a community health survey. This community health survey was conducted by three of the largest healthcare organizations within Northwest Indiana to establish the health needs of the residents. The assessment was required by the Internal Revenue System (IRS) and the Affordable Care Act (ACA). According to The Times (2013), the leading health concerns in the region were cardiovascular disease, diabetes, and cancer. As no surprise, cardiovascular disease and stroke were identified as areas of focus. Healthcare organizations in the region were aligned with addressing these health care concerns through various programs. Barriers were noted within this survey. Access to health care, limited transportation, cost of care, and cost of medication were considered community barriers. This publicized information gave more support to implement a focused educational program centered on cardiovascular disease at the community level.

### **Purpose of the EBP project**

There are several programs that have provided successful educational efforts within the parish based setting. In an effort to provide primary prevention education at the community level, this EBP project was implemented within a large Midwestern, Roman Catholic Church. The Doctorate in Nursing Practice (DNP) student believed that

a parish based setting could capitalize on the strength of faith and social support to instill lasting, healthy behavioral changes. The compelling question was: What is the effect of a 20 minute parish based heart healthy education program compared to the baseline on the knowledge of parishioners at a Midwestern, Roman Catholic Church? The following PICOT statement was developed from clinical inquiry, a community needs assessment, a parish needs assessment, thorough literature search, and appraisal of evidence.

PICOT stands for (P) patient population or patient condition of interest, (I) intervention of interest, (C) comparison of interest, (O) outcome of interest, and (T) time. Thus, this EBP PICOT is: The effect of a 20 minute (T) parish based heart healthy education program (I) compared to the baseline (C) on the knowledge (O) of parishioners at a Midwestern, Roman Catholic Church (P).

### **Significance of the Project**

The ultimate goal of this EBP project was to provide a framework to institute further educational programs within the parish based setting. This EBP project supports that parish based community educational programs can be an effective strategy in promoting health and well-being. Cardiovascular disease risk factors can be identified and modified in order to reduce negative health outcomes. The goal was to raise public awareness of heart disease and provide a catalyst to change unhealthy behaviors. Healthcare professionals who partner with the community can be ideal role models, leaders, and clinicians to be effective change agents. As stated by Ruesch and Gilmore (1999), "churches hold a logical place on the health care continuum" (p. 11). By thinking outside the box, healthcare professionals can capitalize on these community and social support systems to effectively change the health status of Americans.

## CHAPTER 2

### THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE

Chapter two elaborates on the theoretical framework and the EBP model that were utilized for this project. This includes the discussion of how the IOWA Model (Titler et al., 2001) and the Health Belief Model (HBM) relate to and support the question to be answered. The PICOT question was: The effect of a 20 minute parish based heart healthy education program compared to the baseline on the knowledge of parishioners at a Midwestern, Roman Catholic Church. In addition, the literature search strategy will be explained. Identification of search engines, key words, inclusion criteria, and exclusion criteria is shared. Appraisal of relevant evidence is also described. Lastly, the summarization of the evidence assists in providing a best practice model recommendation.

#### **Evidence Based Project Model**

The IOWA Model (Titler et al., 2001) of evidence based practice was utilized as a framework for this EBP project. Titler et al. (2001) demonstrates that the IOWA model can be utilized as a foundation for nurses to make decisions regarding daily practices with the goal to promote quality care. This model closely resembles the steps in the scientific method which allows for problem-solving and critical thinking. The IOWA Model (Titler et al., 2001) encourages the nurse to identify practice questions or “triggers” to improve health care and outcomes. This provokes the nurse to identify a clinical problem within the practice setting and apply the IOWA model to make lasting EBP changes. The IOWA model appealed to this DNP student due to the ease and applicability of the model. Ciliska et al. (2011) stated “the model includes several feedback loops, reflecting analysis, evaluation, and modification based on the evaluation data of both process and outcome indicators” (p. 254). These are critical steps that will promote adaptation of this

EBP project. The IOWA model provides a framework to implement a heart healthy education program within this parish and will assist in future educational endeavors.

Ciliska et al. (2011) lists the steps of the IOWA model which include: a) identifying practice questions or “triggers” b) forming a team to develop, implement, and evaluate practice change c) synthesizing of research evidence d) piloting of EBP project and e) evaluation of change. This DNP student identified a “trigger” while performing blood pressure screenings for parishioners within this particular Midwestern, Roman Catholic Church. Parishioners were found to lack the basic knowledge and understanding of cardiac risk factors and modifications to improve health status. Informal meetings and discussions between several parishioners and health care ministry members within this parish solidified this observation. With the goals of Healthy People 2020 in mind, this DNP student utilized the IOWA model to: a) increase knowledge about cardiovascular risk factors (trigger); b) develop a team of interested parties within this setting which will include: the church pastor, DNP student, and church ministry liaison; c) perform a literature review that pertains to parish based educational programs; d) pilot a heart healthy education program similar to those found in the literature review; and e) evaluate the success of the program for practice change within this parish setting.

### **Theoretical Framework**

The DNP student chose the Health Belief Model (HBM) as the theoretical framework to guide the EBP project. The Health Belief Model was developed in 1976 and focuses on preventative health care practices and patient compliance (Polit & Beck, 2008). Polit & Beck (2008) state “the model postulates that health-seeking behavior is influenced by a person’s perception of a threat posed by a health problem and the value associated with actions aimed at reducing the threat” (p. 150). Additionally, Polit and Beck (2008) identify the major components of the HBM which include: “perceived

susceptibility, perceived severity, perceived benefits and costs, motivation, and enabling or modifying factors” (p. 150).

The DNP student recognized that the HBM was appropriate in application to this EBP project. The goals of providing heart healthy education are to raise community awareness of the problem, provide preventative measures to prevent heart disease, empower parishioners to adopt healthy behaviors, and increase the perception of the relative threat of cardiovascular disease. The parishioners gained from the education program a sense of perceived benefit of becoming “heart healthy” and apply knowledge learned to decrease the likelihood of future negative cardiovascular consequences. In addition, a social support network (parish based) provides a unity between parishioners, a spiritual connection, and encouragement to maintain a healthy lifestyle.

Emerson, Reece, Levine, Hull, and Husaini (2009) utilized the HBM as a framework for their research study which examined the effects of a prostate cancer educational program in the community setting. Specifically, the authors implemented their educational program within a parish based setting. This study is comparable to the DNP student’s EBP project. Interestingly, Emerson et al. (2009) utilized this model to explain and predict preventative health behaviors. In fact, Emerson et al. (2009) stated that the HBM demonstrated that “both knowledge and perceived risk significantly impacted behavior” (p. 344). The men within this research study were educated on the perceived threat of prostate cancer which in turn provided them with the cue to participate in screening opportunities and follow health guidelines. Thus, this DNP student will use the HBM to provide: a) perception of threat: knowledge of cardiovascular disease outcomes; b) expectations: awareness of making positive heart healthy choices; c) will provide cues to action: exploring individual beliefs and values to motivate lifestyle changes and promote change.

### **Literature Search**

A literature search for relevant and best evidence was conducted for this EBP project. Electronic databases were explored to gather the best possible evidence for the PICOT statement. The use of search engines included: Medline, Joanna Briggs Institute (JBI), Cumulative Index of Nursing and Allied Health Literature (CINHAL), Cochrane, ProQuest, and Education Resources Information Center (ERIC). A hand search of relevant articles in references was also conducted. Keywords utilized in the search were: community health nursing, parish nursing, faith based education program, cardiovascular disease, church, and heart health programs. Boolean operator (“and”, “or”, or “not”), nesting, and Medical Subject Headings (MeSH) were utilized in this search strategy to combine the abovementioned keywords. The most “hits” were obtained with the key words “community health nursing” (3,140 hits in Medline) and “parish nursing” (522 in CINHAL). Thus, the use of Boolean operators and MeSH were helpful to reduce the numbers to find relevant information. For example, the combination of “heart health programs” and “church” revealed 15 hits in CINHAL. A majority of the articles from the database CINHAL were utilized in this EBP project. Additional websites were reviewed to obtain guidelines, expert opinions, and task force recommendations. These would include: American Heart Association (AHA), National Guidelines Clearinghouse, Centers for Disease Control and Prevention (CDC), National Heart, Lung, and Blood Institute (NHLBI), and Institute for Clinical Systems Improvement (ICSI). In addition, the assistance of Valparaiso University’s research librarian was utilized in this process.

In order to narrow down the numerous articles, inclusion and exclusion criteria were established. Inclusion criteria included: a) written in the English language; b) limited to the last 15 years; c) full text available; d) scholarly and peer reviewed journal; e) link with cardiovascular disease and lifestyle modification (diet, blood pressure, and exercise); and f) parish based setting. Exclusion criteria included literature that pertained

to: a) non-cardiovascular topics; b) focused on children or adolescents; c) focused on the parish nurse role; and d) was parish placed verses parish based.

Abstracts of articles were read and were included or excluded based on the criteria mentioned. A total of 15 articles were obtained in the initial search. After fully reading all 15 articles, the number dwindled to 10 due to irrelevance to PICOT statement. One more article was added after the search strategy was completed. The DNP student contacted one author via email to obtain an original doctoral dissertation which was mentioned in several articles found in the literature search. The original doctoral dissertation was deemed relevant to this EBP project and supported existing literature. Thus, CINHALL provided six articles, ProQuest two articles, and a hand search provided three additional pieces of relevant information. Thus, a total of 11 relevant articles were utilized in this EBP project.

### **Appraisal of Relevant Evidence**

According to Melnyk and Fineout-Overholt (2011), a critical appraisal of evidence is pivotal in the EBP process. This process is necessary in order to obtain evidence that is valid, reliable, and applicable to support a clinical inquiry. The level and quality of evidence determines the strength of the evidence in which can directly provide the confidence to provide action and implementation of a change practice (Melnyk and Fineout-Overholt, 2011). This project utilized the 7 levels of Hierarchy of Evidence (2011) from Melnyk and Fineout-Overholt. Level I is evidence from a systematic review or meta-analysis of random controlled trials. Level II is evidence from a well-designed random control trial. Level III is evidence obtained from well-designed controlled trials without randomization. Level IV is evidence from a well-designed case-control and cohort studies. Level V is evidence from systematic reviews or descriptive and qualitative studies. Level VI is evidence from single descriptive or qualitative studies. Level VII is evidence from the opinion of authorities and/or reports of expert opinions.

Eleven pieces of evidence were included in this EBP: two random control trials (Level II), one systematic review of a qualitative study (Level V), seven qualitative studies (Level VI), and one recommendation for an expert committee (Level VII). Levels of evidence are included in Table 1.1. A summary of evidence for each article is included within Appendix A.

Table 1.1

## Levels of Evidence

Author (s)	Level of Evidence	Database
Artinian et al. (2004)	VI	CINHAL
DeHaven et al. (2004)	V	ProQuest
Frank & Grubbs (2008)	VI	CINHAL
Holt-Lunstad et al. (2011)	VI	CINHAL
Institute for Clinical Systems Improvement (2011)	VII	Hand search
Kalenderian et al. (2009)	VI	ProQuest
Kotecki (2002)	VI	CINHAL
Peterson (2004)	II	Hand search
Peterson (2011)	VI	CINHAL
Ruesch & Gilmore (1999)	VI	CINHAL
Yanek et al. (2001)	II	Hand search

**Level II Evidence**

There are limited studies that measure the long term effects of educational programs within parish based settings. However, Yanek et al. (2001) examined the long term effects of a parish based nutritional and physical activity educational intervention compared to a self-help (control) group over the course of one year. Specifically, this random control trial examined the effects of incorporating a spiritual component in the

educational program. Furthermore, the authors sought to examine the impact of the culture of the church among the participants. The overall goal was to increase awareness of CVD risk factors and promote healthy lifestyle changes in this setting. The parish setting would allow for an environment that promoted social support and community leadership to meet the objectives of this study. The program was deemed “Project Joy” which was in reference to a Bible verse.

Program interventions and educational formats were piloted prior to the implementation of “Project Joy.” The community was actively involved in the development and planning phases of the actual study. The authors noted that those involved in the pilot study were not participants of the actual study. A pilot program was instituted to refine the educational format, test the appropriateness of the surveys, and examine the spiritual components of the intervention. Focus groups were formed to discuss the strengths and weaknesses of the program.

In the actual study, 700 inner city churches in the Baltimore area met eligibility criteria to be in the study. The churches were chosen due to the large number of African-American parishioners known to be actively involved in church activities, such as conferences and religious events. Churches were then recruited from denominational strata. Study criteria required that the Baptist denomination represent 50% of the participants because this denomination is largely represented in this geographic location. The other 50% of the participants were represented by a combination of Roman Catholic, Methodist, or Holiness denominations. Eligible churches had to have at least 80% African-American parishioners and have a Sunday attendance of at least 150 individuals. Churches were assigned a group by having the pastor randomly draw an envelope which stated which arm of the intervention they would be enrolled in. The authors noted that some pastors were uncomfortable with the random process because the pastors felt this could possibly hinder enrollment. Pre-randomization was then

conducted and full disclosure of the intervention was discussed with each pastor. A total of 16 churches were included in this study: eight were Baptist, three were Holiness, and five were Roman Catholic, United Methodist, or Holiness denominations.

Recruitment of parishioners was accomplished by advertising with bulletin or pulpit announcements. Sample criteria demanded that no participant be currently in a weight control, exercise, or smoking cessation program. Participation criteria deemed that women were required to be over the age of 40 years, not pregnant or planning to become pregnant, with no current heart condition, or cancer, and were not on hemodialysis. Women needed to have written consent from their physician to be allowed in the study. The women who did not have a physician were referred to a federally funded community clinic for permission.

The ultimate sample size was 529 women. The women were randomly assigned into arms of the project. The authors developed and implemented three intervention strategies for their program: 1) behavioral model based on standard group methods with weekly educational sessions, 2) the same behavioral group model supplemented with a spiritual component and church support, 3) and a control group of non-spiritual, self-help interventions (Yanek et al., 2001). Of the 529 participants, 188 were in the standard intervention group. The average age in this group was 51.9 years (SD= 9). In the spiritual intervention group, there were a total of 267 participants. The average age was 53.6 years (SD= 9). The self-help group had 74 participants. The average age of these participants was 53.9 (SD= 10). The mean age of all participants was 53 years old.

The program was conducted over a 20 week period and included educational sessions that lasted 30-45 minutes. The standard group sessions included weigh in, group discussion, educational information, and some sort of physical activity. Information on nutrition and exercise are a few examples of topics discussed at these sessions. The spiritual component incorporated standard group methods along with prayer and health

messages that were based on scriptures. Gospel or praise music was utilized during the physical activity portion of the session. The authors noted that the standard group did incorporate some prayer within their sessions. Participants within the standard group felt it was necessary to incorporate prayer because of the church based setting. This led to the standard group and the spiritual group to become very similar. However, the self-help group participants only received educational information that was tailored based on the return of survey questionnaires. For example, a woman who stated that she smoked received educational pamphlets that pertained to smoking cessation. There was no additional group educational interaction or spiritual component within this group. 50.5% (n=267) women were in the spiritual group, 35.5% (n=188) were in the standard group, and 14.0% (n=74) were in the self-help group (Yanek et al., 2001). Women were screened at baseline and at the end of the program. The data gathered included: weight, height, body mass index (BMI), waist circumference, blood pressure (BP), and resting heart rate.

Analysis of data utilized the SAS software (version 7.0), Chi square analysis, simple frequencies and means. In addition, the authors utilized paired *t*-tests, analysis of variance, and the McNemar's test to evaluate data. Linear and logistic regression analyses using the Generalized Estimating Equations (GEE) were also utilized.

Results of the program indicated that the length and the incorporation of a spiritual component added to the success in achieving desired lifestyle modifications and behavioral changes. Keeping in mind that the standard group and the spiritual group of the study were similar, both of these groups showed positive desirable measurable outcomes and their results will be combined. For example, both of these groups demonstrated a statistical change in favor of reducing 11 of the 13 identified cardiovascular risk factors. In contrast, the self-help group (control group) reduced one of the 13 desired cardiovascular outcomes. At the one year marker, the active

intervention groups lost a total of 19.8 pounds, BMI decreased by 3.3 kg/m<sup>2</sup>, waist circumference decreased by 3.9 inches, systolic blood pressure decreased by 8.1 mmHg, and sodium intake decreased by 300mg/day. This is compared to the self-help group (control) changes which included: a decrease in weight by 7 pounds, BMI decrease by 1.2 kg/m<sup>2</sup>, waist circumference decrease by 1.2 inches, systolic blood pressure decrease by 3.3 mmHg, and sodium intake decrease by 41.4 mg/day. The authors believe that this data supports the benefits of incorporating faith and education. In addition, the one year program initiative showed continual and lasting measurable outcomes, as stated above. The authors note that the self-help group was smaller than the other two groups; however the data shows that the interventions were statistically significant. Yanek et al. (2004) concluded that intervention participants showed significant improvements compared to the self-help group. Therefore, faith based educational programs could make a significant impact on public health.

Dr. Jane Peterson (2004) a doctoral candidate from the University of Nebraska examined the effectiveness of the Heart and Soul Physical Activity Program (HSPAP). The HSPAP is a church based health promotion physical activity program that is rooted in social and spiritual support. Peterson (2004) sought to support the existing literature that church based interventions do promote positive healthy behavior changes. This 12 week program focused on increasing physical activity of mid-life women through social support systems (i.e. the church). The study utilized the Social Comparison Theory as a framework.

This randomized control study aimed to evaluate the effectiveness of the 12-week HSPAP in increasing physical activity, energy expenditure, and cardiorespiratory fitness in a group of women as compared to a group of women who received information only (control group). The hypothesis was that the women who were in the HSPAP arm of the study had an increased level of physical activity, energy expenditure, and

cardiorespiratory fitness than compared to the control group. In addition, the author sought to determine if the HSPAP participants would adhere to physical activity recommendations than the control group. Peterson (2004) hypothesized that social and spiritual support would increase the likelihood of adherence to physical activity recommendations. In addition, Peterson (2004) postulated that the HSPAP could be implemented in various populations on a national level.

Two towns located in Kansas were the setting of this study. One town had a population of 20,013 with a county population of 27,507 with which 96% were white, 2.4% were Hispanic, and 0.7% were African American. The other town had a population of 15,345 with a county population of 28,205 with which 93% were white, 6% were Hispanic, and 1.1% were African American. Both towns were similar in population, race, location, and economic base. Towns were chosen for the experimental or the control group based on a coin toss. This writer feels that this process could have been conducted differently. Two churches from each town were chosen based on similar ethnicity and size. Therefore, a total of four churches were included in this study. Forty two midlife women (ages 35-65 years) were selected from the four churches in the two towns in Kansas (Peterson, 2004).

Peterson (2004) listed the inclusion criteria: "a) midlife women ages 35-65 years; b) able to write and read English; c) no self-reported uncontrolled psychiatric illness; d) no self-reported disabling illness, disease, or injury that interferes with ability to ambulate; e) current physical activity level that does not meet American College of Sports Medicine (ACSM) Risk Stratification requirements of moderate intensity physical activity six to seven days a week or 30 minutes vigorous activity three to five times a week and of low to moderate exercise risk as defined by the ACSM" (Peterson, 2004, p. 50). Exclusion criteria for the study were: women planning to move within three months of the study, women with uncontrolled diabetes, inadequate pain control, resting systolic

blood pressure >190mm/Hg or diastolic >100mm/Hg, major surgery in the last 6 weeks, and those with disabling problems that would interfere with ambulating (Peterson, 2004).

A convenience sample was obtained over a one month period through bulletin announcements, pulpit announcements, and advertisement through women's groups and Sunday school classes (Peterson, 2004). A sample size of eight to fourteen participants was obtained from each congregation based on inclusion and exclusion criteria. Twenty-two women were in the comparison group and 20 women were in the intervention group. In the comparison group, the mean age was 48.3 years (SD= 7.9). The women in the intervention group had a mean age of 53.7 years (SD= 9.8). The majority of women were Caucasian: comparison (100%) and intervention (90%). There were no significant differences in the two groups in relation to educational level, income level, marital status, employment status, or place of residence (Peterson, 2004). Baseline screening of each participant was obtained. Screenings included blood pressure, BMI, height and weight, the PAR-Q (Physical Activity Readiness Questionnaire), and the Rockport Walk Test (RWT). The goal of the RWT was to measure cardiorespiratory fitness and it was found to be the most reliable tool in the literature according to the author.

The intervention group (experimental) received the HSPAP social support intervention. This aspect of the program incorporated the whole person in the program: physical, emotional, social, and spiritual dimensions. Not only was a detailed explanation of physical activity provided, but spiritual wellness was encouraged through Bible verses and phrases. This group met weekly for 12 weeks. The comparison group received the AHA booklet "Exercise and Your Heart" along with one hour of verbal instructions summarizing the AHA booklet and recommendations. No further meetings were conducted with this group. However, one scripted telephone call was conducted within one to two weeks after the program was initiated. Data collection for both groups was

collected at the six week and 12 week mark. The Support Interaction Questionnaire (SIQ) was given at baseline and at the 12 week mark. RWT was conducted at six and 12 weeks to determine fitness level. In addition, all subjects completed the Seven Day Activity Recall (7-DAR) at six and 12 weeks. The 7-DAR is a self-report recall tool that tracks physical activity per minutes. This tool was found to have a  $p < .0001$  reliability within the literature. Incentives to remain in the study were t-shirts and gift cards for ten dollars to a local sporting goods store.

The author utilized SPSS (Version 11.0), descriptive statistics, repeated measures analysis of variance (RMANOVA), Chi-square, and *t*-tests to interpret the data. Internal validity of the tools was measured by Cronbach's Alpha (range .00 and +1.00). The SIQ was shown to be a reliable tool with a Cronbach's alpha of 0.85 at baseline and a 0.90 at the 12 week mark.

The results of this program gleaned that offering opportunities for increasing physical activities through a social support system was successful in this church based interventions. Women in the intervention group spent more time in moderate intensity physical activity than the comparison group. "At baseline, the women in the intervention group spent a mean of 99.18 min/week in moderate intensity physical activity that increased to a mean of 240.74 min/week in moderate intensity physical activity at 12 weeks" (Peterson, 2004, p. 80). "The comparison group spent 134.54 min/week in moderate intensity physical activity at baseline and a mean of 202.39 min/week at 12 weeks" (Peterson, 2004, p. 80).

Peterson (2004) noted that "social influences appear to have a strong effect on the physical activity levels in midlife women" (p. 15). Based on the results of the SIQ, the mean score of the intervention group increased from 8.78 at baseline to 17.25 at 12 weeks. In contrast, the mean score of the comparison group on the SIQ decreased from 12.12 to 10.59 over the 12 week time frame. The author concluded that the HSPAP

could be a viable option to promote physical activity by providing support and encouragement for participants, group cohesiveness and camaraderie, and could facilitate feelings of self-worth and accomplishment (Peterson, 2004). The DNP student notes that the participants of the comparison group were significantly younger. This may have impacted the study results. This study had numerous tools that were utilized and was difficult to interpret the findings which were identified as a limitation. However, the DNP student agrees with the author that that the context of the church is a realistic option to provide health promotion programs.

### **Level V Evidence**

DeHaven et al. (2004) conducted a systematic qualitative review of health-related programs within faith based settings between the years of 1990 and 2000. A faith based program setting incorporates and capitalizes on the spiritual and social aspects within that environment. Faith based programs incorporate prayers, hymns, and scripture readings. This is opposed to a program being faith placed where activities are only being held at a religious affiliated location. The authors acknowledged that the changing healthcare climate demands attention and a unique perspective to provide preventative healthcare to individuals in order to improve outcomes. The objective of this review was to establish the effectiveness of educational programs within the faith based setting. The intention of the authors was to share documented measurable outcomes that supported faith based educational programs.

The authors set out to examine only those programs that strictly related to health promotion and disease prevention activities. A ten-year period (1990-2000) was deemed adequate for obtaining relevant articles for the literature review because of the relatively newer concept of faith based educational programs. The criteria for this search included all published English-language research articles reporting health activities of faith based organizations. After searching MEDLINE, HealthSTAR, CINAHL, and PsycINFO

databases, a total of 386 articles were initially screened. Fifty three articles remained after one reviewer examined abstracts and formally read articles to identify health programs that were linked with positive health benefits. The information was interpreted using descriptive statistics and utilizing SPSS version 10.0.

DeHaven et al. (2004) shared that health programs were conducted in 30 geographic locations which included five cities that accounted for one third of the programs. Chicago accounted for 11.3% (n=6), Baltimore 7.5% (n=4), Los Angeles 7.5% (n=4), Cleveland 3.8% (n=2), and Oakland 3.8% (n=2) of the faith based programs (DeHaven et al., 2004). Programs were located within 23 states with more than half of these being in the states of California, Illinois, Maryland, Ohio, and Florida. The authors found that 60.4% of the educational programs were aimed at congregation members and that 50.9% of the programs were focused on primary prevention. Specific education was focused on general health maintenance (24.5%), cardiovascular health (20.7%), or cancer (32.1%) (DeHaven et al., 2004). Interestingly, 43.4% of the programs were initiated by health professionals outside of a congregation. Within the literature review, many of these programs were educationally supported by large organizations, such as the AHA.

Outcome measures of program interventions were reported within 28 articles (72.5%) found within the search. Most outcomes were related to measuring the reduction of cholesterol levels, weight, and blood pressure levels. Other outcomes that were measured included: increasing knowledge gained post educational session, increased consumption of fruits and vegetables, increasing awareness of risk factors, and increasing the number of individuals who would participate in screening activities (prostate examinations and mammography). The literature review was deemed satisfactory by the authors to support that faith based health programs do indeed provide positive measurable effects at the community level. In fact, the authors confirm that

healthcare professionals can provide an avenue for those individuals with limited access to receive proper primary prevention and education within a faith based setting. One of the recommendations of DeHaven et al. (2004) was to devote more time in building relationships with ethnically and racially diverse populations. In addition, the DNP student believes in the partnership of healthcare professional and the faith community. In fact, DeHaven et al. (2004) recommends “collaboration between faith based organizations and health professionals for the purpose of evaluating health activities and disseminating findings” (p. 1033).

### **Level VI Evidence**

Incorporating educational programs at the community setting has been explored by Frank and Grubbs (2008) who examined the feasibility and effectiveness of a parish based education program for CVD, diabetes, and stroke. This non-random control study assessed the pre and post knowledge of an educational session within four rural African-American churches in north Florida. A relationship with the Pastors was established to gain entry into each of the four churches. The sample included 120 parishioners who attended the educational sessions which was incorporated into their weekly Bible study. Of the 89 parishioners who completed the pretest, 30% (n=27) of the participants were male and 70% (n=62) were female (Frank and Grubbs, 2008). Seventy eight parishioners completed both the pretest and the posttest. The age range was 18-83 years of age with a mean age of 45 years. Trained nurses provided four, 20 minute educational sessions as a part of a regularly scheduled evening Bible study. After the Bible study, parishioners were invited to health screenings, such as blood pressure, weight, height, and blood glucose monitoring. Health information pamphlets and brochures were distributed to the parishioners during the health screenings. The fifth educational session was conducted after a Sunday service.

The aim of these sessions was to increase the knowledge of the signs and symptoms and appropriate response to symptoms of CVD, DM, and stroke. A revised form of The Symptoms Scale (Brody and Kleban, 1981; Brody and Kleban, 1983; Edwardson and Dean, 1999) was utilized to measure pre and post educational knowledge (Frank and Grubbs, 2008). The revisions of the scale included the addition of CVD, DM, and stroke symptoms. A series of questions prompts the participant to identify relevant symptoms of each of the disease processes, symptoms that would prompt one to call a physician, and symptoms that would cause one to go to the Emergency Room. No further information was given on the reliability and validity of the revised scale utilized. The revised pretest and posttest questionnaire is provided within the article. Further information would be warranted for the validity and reliability of this questionnaire. However, the easy format and readability would allow for this tool to be utilized for a variety of audiences.

The data was analyzed by comparing *t*-test scores and analysis of variance (ANOVA) for symptom recognition and appropriateness of symptom response. Demographic data was analyzed using Chi square analysis and descriptive statistics.

Health status was determined by the pretest survey. Thirty-eight percent of parishioners did not engage in regular exercise, 49% had a BMI greater than 30, 46% were told they had high blood pressure, and 27% had been told they had high cholesterol (Frank and Grubbs, 2008). This information justified a need for providing preventive health educational sessions and screenings within this particular population.

Interestingly, "*t*-test results indicated that overall pretest ( $M= 42.58$ ,  $SD= 6.76$ ) and posttest ( $M= 42.78$ ,  $SD= 6.70$ ) scores did not differ significantly between groups  $t(77) = .32$ ,  $p= .75$ " (Frank and Grubbs, p. 97). This means that the educational session did not statistically demonstrate an increased level of knowledge among the sample. The author noted several factors that might have affected the results. The elderly had

difficulty filling out the surveys even though volunteers were readily available. Literacy may have been an additional barrier. The author noted that one education session may not have been adequate to meet the overall goal.

However, the author did note that the pretest and posttest means did differ between age groups. There is statistical evidence to support this finding. For those parishioners in the 18-30 age group ( $n=12$ ), the pretest mean was 38.42 and the posttest mean was 42.33 ( $t(11) = 3.92, p = .03$ ). The parishioners aged 31-60 years ( $n=54$ ), the pretest mean was 44.41 and the posttest mean was 43.70 ( $t(53) = .92, p = .36$ ). In the age group over 61 years ( $n=16$ ), the pretest mean was 38.50 and the posttest mean was 39.08 ( $t(11) = .39, p = .71$ ). The  $t$ -test indicates that the youngest age group (18-30 years) statistically scored higher on the posttest than the other age groups. However, the middle age group (31-60 years) scored higher on the pretest. Thus, this information suggested that more education could be focused towards the 18-30 years old age group and the age group over 61 years.

Overall, the information did support that this educational program was successful. The author did establish that implementing educational opportunities within a church based setting was feasible and supported by parishioners. Eighty-eight percent ( $n=78$ ) stated that they would recommend the program to others and 79% ( $n=70$ ) admitted that they learned something new about CVD, DM, and stroke (Frank and Grubbs, 2008). Ninety-six percent agreed that they would attend similar programs in the future.

Similarly, Ruesch and Gilmore (1999) developed and implemented a heart healthy education program for midlife-aged women in a parish based setting. This heart healthy education program was entitled "Hearts to God" and incorporated stewardship, social support, spirituality, and wholeness as a framework. "The church encourages a holistic philosophy and envisions a person as the integration of the mind, body, and

spirit” (Ruesch and Gilmore, 1999, p. 9). The goal of this program was to educate women specifically about CVD risk and lifestyle modifications because heart disease is the number one killer of American women (Ruesch and Gilmore, 1999). In addition, the authors set out to develop an educational manual that could be utilized within other parish settings. The authors thought the parish based setting offered a unique spiritual component that would enhance behavioral modifications and provide optimal outcomes. In addition, the authors wanted to maximize the role of the parish nurse in providing educational measures to reduce mortality and morbidity of CVD in this vulnerable population.

The educational program was rooted in the transtheoretical model of behavior change. This five step change process encompasses the following stages: precontemplation, contemplation, preparation, action, and maintenance (Ruesch and Gilmore, 1999). In addition, the authors utilized the La Crosse Wellness Project (LWP) as a wellness framework to guide the program. This framework allows the individual to assume responsibility for their behavioral changes through realistic goals, strategies for change, and reinforcement measures (Ruesch and Gilmore, 1999).

The formation of the “Hearts to God” manual was instrumental to the success of this program. Ruesch and Gilmore (1999) developed the educational manual from compiling current information on CVD disease and risk factors. Specifically, information on women’s health was stressed within this manual. More importantly, the authors incorporated health and faith based information within the manual by stating that no one is perfect, life is a continual journey, and that their God will sustain them in this journey (Ruesch and Gilmore, 1999). Bible verses and scripture were incorporated within this manual to support feeding the spiritual aspect of the individual.

All women of St. Vincent de Paul Parish, a Midwestern parish, were invited to participate in this program. Even though the authors wanted to focus on midlife-aged

women, the program was extended to those who were interested in the content and wanted to make lifestyle changes. Seven women participated in this educational program. All were middle-class; white women aged 40 to 86 years. Two of the women were in their 80's and the remaining conformed to the targeted age population. There were two members that were from another parish and one other woman from another denomination. Thus, all women were affiliated with some type of religious organization. The women committed to five consecutive weekly educational sessions with each lasting about two hours. Interestingly, the women paid a fee to participate in the program to defray any costs that occurred. The amount of this fee was not provided in this article.

Each educational session started with and ended with a prayer. This was thought to center the women and bring a feeling of peace and relaxation (Ruesch and Gilmore, 1999). Since this was a small group, the facilitator was able to educate the women and allow for open discussion and dialogue. In keeping with the theoretical framework, the facilitator allowed for each individual to set her own goal, identify her own strength, and map out a personal plan of action. Often, the sessions were directed by the participants who established which topics demanded more attention. After the program, a ten question program evaluation form was given to all seven participants. Participants ranked their responses according to three choices: increased, about the same, and no improvement. Limited information on the reliability and validity of this measurement tool was provided within the article.

The program "Hearts to God" succeeded in meeting the objectives. Forty-three percent (n=3) stated that they had an increased understanding of woman's risk of heart disease. Eighty-six percent (n=6) reported they now understood the signs of heart disease and eighty-six percent (n=6) stated they would recommend this program to another individual. In relation to the program format, participants ranked their responses as: too technical, just right, and too elementary. The length of the program was viewed

as “just right” as reported by 100% of the participants. The facilitator was viewed as being knowledgeable, paced the program according to the needs of the participants, and allowed adequate time for questions 100% of the time. In addition, the participants gave positive feedback for the inclusion of prayer within the sessions.

Ruesch and Gilmore (1999) demonstrated that incorporation of faith within an educational program can be successful. The incorporation of the spiritual dimension can be blended with education to produce lasting, positive healthy behavioral changes. The authors noted that this program could be easily replicated and educational information can be adapted for unique populations. In addition, educational programs could be easily tweaked to accommodate culture, ethnicity, or religious differences. However, the authors did make a suggestion to reproduce this within a larger population to determine overall effectiveness.

Kalenderian et al. (2009) partnered with the AHA to form the Health Disparities Committee in 2006. The goal was to increase awareness of cardiovascular risk factors, reduce health disparities, and improve cardiovascular outcomes within the African-American, Latino, and Hispanic communities. The AHA sponsored an event, “Search Your Heart” (SYH), to improve knowledge of cardiovascular disease and stroke risk factors specifically in 388 urban African-American, Latino, and Hispanic churches. The AHA trained 211 volunteer ambassadors to be liaisons to educate within these churches. This program was centered within the Heritage Affiliate of the AHA which covered New Jersey, Connecticut, Long Island, and New York City (Kalenderian et al., 2009).

The AHA trained the 211 ambassadors through various workshops that focused on high cholesterol, diabetes, high blood pressure, stroke, obesity, nutrition, physical activity, CVD warning signs, and CPR (Kalenderian et al., 2009). Ambassadors would then request additional SYH educational materials, such as brochures or posters, to supplement their educational programs within their church organization. In addition, the

AHA provided a network of medical professionals to be available for ambassadors, if additional support was needed. The ambassadors would then replicate the SYH program within their assigned church. The ambassadors from the AHA were randomly assigned churches per geographical location.

The educational sessions were conducted immediately after church services and lasted 30-45 minutes. After the educational sessions, ambassadors would distribute and collect surveys to assess knowledge gained and attitudes about the program. The survey contained the following key items: four epidemiological questions, one question regarding church activities, one question regarding advocacy involvement, and nine questions testing knowledge about CVD and stroke (Kalenderian et al., 2009). The authors did not discuss the collection tool instrument in detail. Thus, reliability and validity of the tool was not provided. Descriptive statistics was used to analyze the data.

There were a total of 1499 surveys returned from the 29 out of 388 churches that participated in this part of the study. Sixty nine percent of the responders were female and 27% were male. Seventy six percent of the population sampled was African-American, 11% were Hispanic/Latino, 2% were Asian, and 7% were White. There was similar percentile distribution between age groups. There was a 16% response in the age group of 18-29, 19% of the respondents were 30-39, 21% were 40-49, 19% were 50-59, and 18% were 60 plus years of age. The authors noted that some responders did not provide information on age, gender, and race.

Kalenderian et al. (2009) noted that this program collected surveys only during the post-educational period. Baseline data prior to educational sessions were not obtained. However, the authors hoped that the survey would reveal educational gaps and provide information to launch new educational sessions in the future. Within this survey, 78% of participants were aware of the five warning signs of stroke and 67% were aware that heart disease is the number one killer for women and men. Interestingly, 48%

of the participants noted that they did not talk with their health care provider about CVD risk. Furthermore, the authors did note a difference with what the sample indicated they knew versus their actual lifestyle choices. For example, 31% (n=460) reported that they did not exercise at all and almost half of the participants 48% (n=725) stated that their diet included only 1-2 servings of fruits and vegetables per day. The survey included how often participants obtained health measures within the year. Twenty eight percent (n=418) stated that they had their blood pressure checked and 36% (n=539) stated they had cholesterol, blood pressure, and blood glucose measured. The authors interpreted that knowledge does not lend into making healthy behavior choices which indicates that more educational programs are needed within this setting.

The parish based setting has proved to be a positive platform for educating individuals about modifying lifestyle behaviors and leading healthier lives. In a follow up study by Peterson (2011), perceptions of African-American women following implementation of a physical fitness program (HSPAP) in a parish based setting were evaluated. The parish based physical activity intervention conceptualized in appraisal, belonging, tangible, and self-esteem domains of social support (Peterson, 2011). The original HSPAP was explained earlier in this paper (see Level II Evidence).

After the HSPAP program was completed, a focus group of seven volunteer participants was formed to evaluate the success of this parish based intervention. The age of the women ranged from 42 to 65 years of age with most women reporting regular attendance of church services. All seven women had completed the six week HSPAP program and had received the HSPAP information booklet. The discussions were audiotaped and transcribed verbatim. Participants of the focus groups received a gift card for participating in the study. Data was analyzed by HyperResearch software program. This method allowed for coding statements and allowing for themes to emerge.

The data was reviewed by two researchers and an assistant to verify consistent concepts and themes.

In this qualitative design study, individuals were able to describe their attitudes and opinions related to physical activity and to evaluate the HSPAP, as a strategy to promote an active lifestyle. Peterson (2011) noted that the women believed that physical activity would increase if recommended by health professionals and encouraged by family, friends, and church members; and, that spiritual messages and prayer would strengthen their commitment to attain an active lifestyle. A common spiritual belief was revealed. Women had stated that God would not want them to neglect their bodies, but “promote their own health and well-being so they could better accomplish their Christian purposes in life” (Peterson, 2011, p. 70). In addition, the women believed that focusing on spiritual wellness would lead to physical well-being. Although this study did have a small sample size, the message was clear that a need for educational programs and community resources should exist in order to incorporate social support and spiritual support to promote positive healthy behaviors. The author noted that a parish based setting would be an ideal platform for health professionals to provide resources and opportunities for healthy living. This study provides a strong relationship between physical well-being and spiritual well-being which fuels this DNP’s EBP project.

Kotecki (2002) posed that community partnerships be developed between health care professionals and faith based organizations. With the goals of Health People 2010 in mind, Kotecki (2002) implemented a health promotion program for an urban, African-American faith based community. The two goals of Healthy People 2010 were to a) increase quality and years of healthy life and b) eliminate health disparities (Kotecki, 2002). Emphasis on achieving these goals relied on increasing community partnerships. Thus, a partnership formed between healthcare professionals, a school of nursing, and

community outreach programs to implement health promotion activities for this faith based community.

The goals of this program were to: increase health promotion knowledge, increase participant satisfaction, and improve overall health within the congregations. The reason that a faith based approach was utilized was to capitalize on group membership and the social support of community networking. Kotecki (2002) stated that “the link between spiritual health and physical health is strongly held by many people” (p. 62). In addition, “faith-based partnerships are opportunities to expand health initiatives using the strength of a person’s spiritual orientation” (Kotecki, 2002, p. 62).

The curriculum of the education program was titled the Faith-Based Health Training Program (FBHTP). This brought together healthcare professionals to educate at the community level. Each session began with a church supper and led into an educational program. These sessions lasted about 90 minutes in length. Pretest and posttest questionnaires were given during these sessions. There were a total of seven sessions which terminated in a graduation. Topics of the educational sessions varied and included: health promotion/disease prevention; introduction to common illnesses; special needs of the young; special needs of the old; introduction to cancer; basic first aid; and drug/alcohol abuse (Kotecki, 2002).

The author utilized the Health Promotion Knowledge Assessment Tool (HPKAT) to assess knowledge gained. The HPKAT was a well-developed instrument formulated and tested within the community in a pilot program. Baccalaureate-prepared nurses comprised a panel that evaluated this tool for content validity. This tool was comprised of 35 true-false items with an initial Kuder Richardson (KR) 20 reliability score of 0.54 (Kotecki, 2002). This test takes about 15 minutes to complete.

Based on the results of the HPKAT, the goals of the program were met. Sixty-three participants of the FBHTP took this test to assess post-education knowledge. The

participants were part of the spring and fall (1999-2000) FBHTP. There was no demographic information for these 63 participants. The DNP student would have appreciated this information to reveal health disparities related to age, gender, or ethnicity. The author reported that the KR reliability score of the test was 0.75 (Kotecki, 2002). The data was analyzed using Wilcoxon ranked tests, *t*-tests, and power analysis. SPSS Power was also utilized to analyze the data. Data retrieved from this tool showed to be statistically significant with a  $p=.000$  on a two-tailed *t*-test with an alpha of 0.05 (Kotecki, 2002). After a power analysis, a one-tailed *t*-test yielded a 0.05 with 50 pairs of cases which resulted in a power of 99.5% (Kotecki, 2002).

Interestingly, this program has continued to provide faith based education to over 125 individuals within 18 congregations. Kotecki (2002) stated that the program had been successful for four years and continued to bridge healthcare professionals to the community. However, funding has become an obstacle within these programs. The program started with a church supper which the author mentions can be costly. However, this gathering provided a social support and network that cannot be matched. The spiritual setting has provided a framework to guide the education program. Prayers, spiritual insights, and pastor involvement has set the spiritual tone of the program (Kotecki, 2002). This program has led to larger faith-based educational opportunities, such as a health fair. In addition, this program has led to programs within the church organizations to provide programs for the young and old. Indeed, this study does offer statistical support for this EBP project.

Parish based educational programs can reach vulnerable populations and reduces the barriers of race, gender, ethnicity, age, and socioeconomic status. Health care professionals can be actively involved in performing a needs assessment of the community and tailor educational programs to match identified disparities. For example, the Hispanic population is less likely to use preventative care services than non-Hispanic

Whites and is identified as an at-risk population for developing CVD (Artinian, Schim, Vander Wal, and Nies, 2004). Thus, dietary patterns and cardiovascular risk factors in Hispanic adults living in Southwest Detroit were examined. The purpose of this study was to examine the effects of an education program on physical activity, diet, and health risks within this parish setting. The authors utilized the parish based setting as a route to institute community-based education and reach this at-risk population.

This descriptive design study examined the food consumption patterns in a nonrandom sample of 32 Mexican Americans recruited from a large Roman Catholic Church (Artinian et al., 2004). The sample criteria required that participants were enrolled in a larger parent research study to analyze the effects of a lay health education program and participants would be involved in the nutritional education portion of the intervention. The sample contained 5 (16.7%) males and 25 (83.3%) females in the study. The gender of two participants was omitted due to missing demographic data. The average age of the participants was 34 years (SD 14.38). The authors utilized the Rate Your Plate and Personal Health Risk Assessment questionnaires to gather their data. Data was collected prior to the health educational programs. The SPSS Version 11 was utilized to analyze the data. In addition, descriptive statistics were used to assess the variables.

The results of the data collection supported that instituting this program for this vulnerable population is warranted. As reported, "Unhealthy eating patterns outnumbered heart healthy eating practices" (Artinian et al., 2004, p. 425). For example, 6.3% of the sample ate the recommended servings of fruits and vegetables (Artinian et al., 2004). Participants favored high-fat and high-salt snacks, while only 3% of the sample reported eating healthy snacks like fruit, pretzels, or low-fat crackers (Artinian et al., 2004). In regards to assessing cardiovascular risk factors, "36% reported engaging in less than 30 minutes of moderate level physical activity on most days, 36% did not know

if their blood pressure was over 140/90 mm Hg, and 28.1% reported of not knowing if they were overweight” (Artinian et al., 2004, p. 432).

Based on these statistics, the authors recognized that an educational program geared towards healthy eating patterns and cardiovascular risk factors are needed within this specific population. Furthermore, the authors realized that educational community-based programs must not only meet the needs of both genders, but need to be congruent with Hispanic values, beliefs, and dietary practices (Artinian et al., 2004). Several additional health discrepancies were noted and prompted educational programs in this community. These would include: the proportion of overweight participants; exposure to second hand smoke; and lack of physical activity. The authors note that the sample included mainly young, female participants and this may have skewed the data. This may limit the generalizability of the findings to other populations. In order to support the effect of community-based educational programs, the DNP student would recommend the authors gather further post educational statistics.

The question is posed whether spiritual well-being has any significant weight on physical well-being. Holt-Lunstad, Steffen, Sandberg, and Jensen (2011) evaluated if there was a true connection between spiritual well-being and physical health by evaluating CVD outcome measures, such as blood pressure, inflammation, blood lipids, and fasting glucose levels. This descriptive, non-random research study revealed that spiritual well-being may be cardio protective (Holt-Lunstad et al., 2011). Thus, this study supports this EBP project in that a spiritual environment lends to stronger social connections and optimal healthy behaviors.

The influence of spiritual well-being was measured with a sample of 100 married adults aged 19-71 years ( $M=28.28$ ;  $SD=8.67$ ). There was an equal distribution of men and women. The race of the participants was mainly Caucasian (83%). Other ethnicities represented were: Hispanic (10%), African-American (1%), Asian (1%), Native American

(1%), Pacific Islander (1%), and multi-racial (3%). The average BMI of the participants was 24.99 (SD=5.20). The authors noted that 4% of the sample was underweight, 54% were of healthy weight, 34% were overweight, and 8% of the participants were obese (Holt-Lunstad et al., 2011). Sample participants were obtained from a larger marital intervention study. Exclusion criteria for inclusion of this study was: a) currently taking medication that may influence blood pressure readings, b) current chronic illness with a cardiovascular component, c) pregnant, nursing, six-month post-partum, or planning to become pregnant within the next three months (Holt-Lunstad et al., 2011).

Sample participants wore a 24 hour ambulatory blood pressure monitor (ABPM) and obtained blood work for a fasting blood draw that measured blood glucose levels, C-reactive protein, and a cholesterol panel. Participants were to continue their normal activities of daily living while wearing the ABPM. In addition, the participants completed a questionnaire packet assessing overall physical health, mental health status, and demographics.

Several questionnaires were utilized for this study. The Background Health Questionnaire was utilized to assess lifestyle risk factors, such as smoking, diet, and exercise habits. In addition, the Center for Epidemiological Studies Depression Scale (CES-D) was utilized to assess depression. This 20 item scale touts a high reliability of consistency with a 0.75 to 0.95 (Chronbach's alpha), as tested by a nationwide survey of 2,500 participants (Holt-Lunstad et al., 2011). Stress was assessed by using The Perceived Stress Scale (PSS). The PSS is a ten item assessment that measures stress perceptions. Spiritual well-being was assessed by using The Functional Assessment in Chronic Illness Therapy-Spiritual Well-Being Expanded Scale (FACIT-Sp-Ex). This scale measures aspects such as love, gratitude, and forgiveness on a 5-point likert scale. The reliability of this 23-item scale measures an Chronbach's alpha of 0.90 in this study which is comparable to the internal consistency estimate of an Chronbach's alpha of

0.94 (Holt-Lunstad et al., 2011). The DNP student recognizes that having numerous tools may hinder participation in a study.

Data was interpreted by regression analysis and two-tailed dependent *t*-tests. The data revealed that participants were highly religious with 69.4% stating that they attend church on a weekly basis. "Regression analysis revealed that higher levels of spirituality wellness was significantly related to lower 24 hour SBP ( $p < .001$ )" (Holt-Lunstad et al., 2011, p. 481). In addition, "greater spiritual well-being was associated with significantly lower 24 hour DBP ( $p < .02$ )" (Holt-Lunstad et al., 2011, p. 482). Higher spirituality was associated with lower C-reactive protein ( $p < .04$ ), marginally lower triglycerides ( $p < .09$ ), and lower fasting glucose levels ( $p < .006$ ). There was not statistical support to suggest spiritual wellness on HDL or LDL levels ( $p > .20$ ). The authors did not find significant data to link spiritual well-being with smoking status, alcohol consumption, or exercise trends ( $p > .20$ ). However, there was statistical evidence that linked a higher spiritual well-being with a lower BMI ( $p = .004$ ). Interestingly, higher spiritual well-being was linked with lower stress ( $p = .002$ ) and lower depression ( $p < .001$ ).

The overall findings of the study revealed that "higher spiritual well-being is linked to lower levels on multiple cardiovascular risk factors-suggesting spiritual well-being may be cardio protective" (Holt-Lunstad et al., 2011, p. 483). Limitations were found within this study. The authors noted that data was measured within a 24 hour period. Thus, the DNP student agrees that implementing a longer study may prove to be beneficial. The sample consisted of predominantly Caucasians who self-reported that they were highly religious. Again, the DNP student would like to see this research study conducted within a diverse ethnic population. In addition, this writer identified that the participants were "highly religious," however; this definition may be interpreted differently. For example, attending church on a weekly basis does not make an individual "highly religious." The DNP student feels that "living the faith" and being active in the church community poses

more significance to the definition of being “highly religious.” Implications of this study support the need to incorporate spirituality into an education program.

### **Level VII Evidence**

The Institute for Clinical Systems Improvement (ICSI) established a national guideline to assist adults in achieving and adopting healthy lifestyles. Six to twelve healthcare professionals comprise this working group which includes physicians, nurses, pharmacists and other healthcare professionals appropriate to the guideline. An ICSI group facilitator leads the group within meetings to develop guidelines from literature searches and reviews. This group developed the guideline “Healthy Lifestyles” which was publicly announced in March 2008 and later revised in May 2011. Methods to establish the guidelines were literature searches of clinical trials, meta-analysis, and systematic reviews. The aims of the guidelines were to: “a) increase the percentage of population, age 18 years and older, screened for presence of healthy lifestyles and who have screening results discussed, b) increase the percentage of population, age 18 years and older, who are not at a recommended healthy goal with regards to five health behaviors- increased physical activity, improved nutrition, decreased tobacco use and exposure, decreased hazardous and harmful drinking and alcohol, and increased practice positive thinking use- who set goals toward reaching recommended healthy goals, and c) increase the percentage of population in the community who are aware of one or more community resources that are available to address each of the five healthy lifestyles: increased physical activity, improved nutrition, decreased tobacco use and exposure, decreased alcohol use and practiced positive thinking” (ICSI, 2011). Clinical highlights suggest that community resources are becoming more popular in assisting in meeting these national guidelines. In fact, the ICSI (2011) suggested that medical groups should not bear sole responsibility for providing preventative care. Rather, the role of the community network, and physical and social environments can play a role in

fostering healthy lifestyles (ICSI, 2011). With this in mind, faith based organizations (churches, synagogues, and mosques) play a pivotal role in social networking and providing support. These adjunct community resources are the ideal platforms for education on healthy lifestyles, health screenings, and wellness outreach programs. This guideline supports the focus on utilizing community resources to educate adults over the age of 18 years on lifestyle behavioral changes, and thus supports this EBP project.

### **Best Practice Model Recommendation**

After reviewing the literature, the DNP student has established that a parish based education program will provide a means to promote lasting, healthy behavior changes and provide measureable outcomes to support this concept. Americans need to understand the connection of risk factors to CVD and how this will impact their health status. A parish based education program is a unique health promotion strategy that will link the health care system to the community. Literature has supported that the social and spiritual support of the church provides a special network and camaraderie. Many of the studies have incorporated existing national platforms of education. For example, the AHA has provided authorization of educational materials in several of the studies reviewed. The DNP student will utilize an existing national educational program and apply this within a parish based environment. This strategy will assist in meeting this EBP objective and answering the PICOT question.

## CHAPTER 3

### IMPLEMENTATION OF PRACTICE CHANGE

This chapter will cover the method and implementation of the practice change which was utilized for this EBP project. A precise outlined method provides a blueprint on which future interventions can be replicated. Future users must feel confident that the process is evidence based, valid, and reliable. Specifically, this chapter focuses on sample, setting, outcomes, intervention, planning, data management, data analysis, and protection of human subjects.

#### **Sample and Setting**

A large, Midwestern, Roman Catholic Church was the setting for this EBP project. This particular parish dates back to the 1800's with the establishment of a log cabin church. Today, there are over 1300 families in this Midwestern, Roman Catholic Church. Being active in the parish is highly recommended, as this builds a sense of community and cohesiveness among the members. Parishioners can be involved by joining one of the multiple ministries available. Ministries cater to a variety of individual needs and offer a faith based platform for parishioners to serve others. For example, the health ministry consists of health professionals who seek to improve the health status of parishioners. The health ministry members offer blood pressure screenings, educational sessions, and immunizations. Based on the review of literature, this DNP student decided to pin point implementation of this EBP project within selected parish ministries to draw upon those established networks.

The convenience sample of participants for this EBP project was obtained by conducting educational sessions at two selected ministry meetings. With the assistance of the church ministry liaison, two ministries were selected to conduct the heart healthy education program. The church ministry liaison contacted several ministries regarding

this EBP project. Two ministries, the Men's Club and the MOMS (Ministry of Mothers Sharing) group, offered time during their meetings/bible studies for the DNP student's presentation. These two ministries were chosen for demographic similarity and homogeneity of previous educational programs found within the literature.

Appropriateness of audience and time allocated for this program was taken into consideration in the selection of these two ministries. The goal was to attain a sample size of 25 to 30 participants from the two ministries selected.

The first ministry to receive the educational program was the Men's Club. The Men's Club is open to all men over the age of 21 years with the purpose of encouraging and strengthening brotherhood in Christ. The group accomplishes this mission through various social activities and service projects. This ministry meets on a monthly basis at the church's social meeting room located in the basement of the church. Average attendance is about 25 participants. The length of meetings is about two hours long. The first hour is dedicated to information relevant to the Men's club which includes discussion on finances and current projects. The last hour is dedicated towards learning new information which led to acceptance of the DNP student's educational program. Traditionally, educational information is distributed about three times per year in the Men's Club. The Men's Club adjourns with a snack and fellowship among the members. In speaking with the Men's Club president, this is a close knit group of members.

The second ministry that was selected was the MOMS group. This ministry is open to women of all ages and life experiences. Faith is shared during small group discussions, social events, and family gatherings. The premise of the MOMS group is to empower women through a spiritual process. Numerous activities are offered for this specific population. For example, the group meets for monthly faith based Bible study sessions that focus on personal, relational, and spiritual development.

**Outcomes**

The overall intention of this heart healthy education program was to a) validate that a parish based setting provides an avenue for education at the community level and b) increase participant's knowledge regarding cardiovascular disease and risk factors. The writer felt that this was achieved by taking advantage of the existing social network of a parish based setting.

Outcomes were validated by data retrieved from the pretest/posttest cardiovascular knowledge questionnaire. A pretest/posttest design was utilized to assess baseline knowledge and knowledge gained following the educational session. Review of literature indicated that knowledge measurement through a pretest/posttest method is a reliable indicator of successful educational programs (Kotecki, 2002; Frank & Grubbs, 2008; Temme, Goode, Fausto, and Jones, 2011). In addition, program satisfaction and appropriateness of setting was obtained from two questions in the posttest which was supported in the literature review (Ruesch & Gilmore, 1999).

**Intervention**

This EBP project was implemented to increase the knowledge of cardiovascular disease and risk factors among parishioners. The DNP student established a date and time to meet with two ministries groups to conduct the educational session. Sessions started with an introduction about the DNP student and the educational program. Demographic data and a pretest of cardiovascular knowledge were obtained prior to the 20 minute educational session. The educational format was based on the "Ten Commandments for a Healthy Heart" (see Appendix B) (NHLBI, 2013). Immediately following the 20 minute educational session, the same cardiovascular knowledge questionnaire was repeated to assess knowledge gained from the educational session. The posttest also included several questions regarding program satisfaction and appropriateness of setting. The educational session was concluded after the posttest.

## Planning

Permission to implement this EBP project was granted from the pastor of this Midwestern, Roman Catholic Church. A ministry liaison was assigned as a contact person. Collaboration with the ministry liaison assisted in selecting two ministries to conduct the 20 minute educational sessions. Dates and times were coordinated with the president of the Men's club and the MOMS group.

Copyright privilege was obtained through email communication for the pretest/posttest cardiovascular knowledge questionnaire (D. Mitstifer, personal communication, July 19, 2013). The pretest/posttest cardiovascular knowledge questionnaire was adopted from a pilot study that focused on evaluating an educational workshop in rural, Northeast Missouri. Temme et al. (2011) utilized this researcher created 20 multiple-choice question tool to assess knowledge on cardiovascular risk factors, symptoms of heart attacks, and lifestyle changes (nutrition and exercise). The authors utilized a panel of three Certified Health Education Specialists to review the tool for reliability and validity. After feedback, the tool was piloted on a sample of participants similar to the study participants. This sample included adult participants who were between the ages of 20 to 65 years. The setting and sample demographics are similar to this Roman Catholic Church making this tool applicable and reliable to this EBP project. Additional corrections were made from this pilot study. The authors noted a Cronbach's Alpha level of ( $\alpha=.627$ ). According to Polit and Beck (2008), Cronbach's alpha is "the most widely used method for evaluating internal consistency" (p. 455). The normal ranges values are between .00 and +1.00. Thus, this tool tooting an alpha level of .627 reflects a higher level of internal consistency. The DNP student favored a tool that was reliable in translating the data.

With permission from the authors, the DNP student chose to use only 10 questions from the original 20 question multiple choice questionnaire. Time for the

participants to answer the pretest/posttest was heavily considered. With a 20 minute time frame, the DNP student felt it was necessary for the tool to be reduced to 10 questions over utilizing the original 20. The DNP student utilized experts within the field to assist in determining content validity of the questionnaire. Thus, a panel of six registered nurses with at least 15 years of cardiac nursing experience assisted in this process. These registered nurses worked on a cardiac telemetry unit in a Northwest Indiana hospital. They analyzed both the 10 commandments and the complete cardiovascular knowledge questionnaire. With their experience, knowledge, and clinical expertise in cardiac care, the registered nurses picked the top 10 questions that captured the full content of the proposed program. These top 10 questions were reviewed by the DNP student and chosen for the final questionnaire tool utilized in this EBP project. The final 10 questions are provided in Appendix C.

Email communication with the NHLBI regarding the “Ten Commandments for a Healthy Heart” revealed that information on the website was of public domain. No further permission was required to reproduce or reprint the text in whole or in part. The list of the “10 Commandments for a Healthy Heart” was used in its entirety.

### **Data Management and Analysis**

Analysis of data was conducted utilizing a paired *t*-test. A paired *t*-test is a measurement to test differences within a group. In this case, pre-education and post-education scores within a single group were compared. Thus, two measures are obtained from one group of participants. This data will determine the efficacy of the intervention (education). The mean pretest scores and the mean posttest scores was analyzed among all participants. Data was kept confidential by the DNP student in a locked file cabinet and password protected computer. Full participation of the parishioners to take the pretest/posttest was identified as a possible hindrance for data

interpretation. With this in mind, the DNP student limited the pretest and posttest to 10 questions.

### **Protection of Human Subjects**

Institutional Review Board (IRB) approval was obtained from Valparaiso University prior to implementing this EBP project. Approval was also granted from the Roman Catholic Church where this project was implemented. Demographic data collected did not include any identifying information. Data was stored in a locked file cabinet until transferred to a password protected computer. Statistics were released in aggregated data to prevent disclosure of information about any individual.

Participation in the educational session was voluntary, as was completing the instrument. The choice to participant was left to parishioner discretion and had no impact on their participation in the ministry program. Participants had the freedom to skip any questions they did not wish to answer.

## **CHAPTER 4**

### **FINDINGS**

The PICOT question for this EBP project was: What is the effect of a 20 minute parish based heart healthy education program compared to the baseline on the knowledge of parishioners at a Midwestern, Roman Catholic Church? The purpose of this EPB project was to a) validate that a parish based setting provides an avenue for education at the community level and b) increase participant's knowledge regarding cardiovascular disease and risk factors. This EBP project helped to answer the identified clinical question. The findings from this EBP project will be addressed within this chapter. The following will be discussed within this chapter: participant characteristics, changes in outcome, statistical testing and significance, and findings.

#### **Participant Characteristics**

The following section provides characteristics of the parishioners who participated in the educational programs.

#### **Size and Sample Characteristics**

This parish based education program was implemented to a total of 23 parishioners. However, there were a total of three parishioners who did not fully complete either the pretest or the posttest. Neither their tests nor demographic data were included for final analysis, and thus were eliminated due to missing at least 20% of the data. Statistically, this would have an impact on validity and reliability of the data. Data would likely be skewed and have an impact on the relevant findings and interpretations. The sample goal of 25-30 participants was not met however; the findings revealed in this section will demonstrate statistical significance.

Twenty parishioners did complete the pretest which was utilized to represent their baseline knowledge. After the 20 minute educational program, the parishioners repeated

the same test. Comparison of these scores was utilized to represent knowledge gained from the educational program. The mean age of the 20 participants was 44.71 years (sd=15.23) and the age range of participants was from 20 to 77 years (See Table 4.1). Seventy percent (n=14) of the participants were male and 30% (n=6) were female (See Figure 4.1).

Figure 4.1

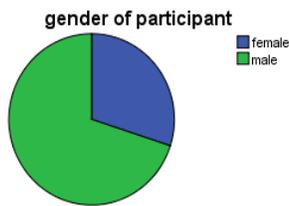


Table 4.1

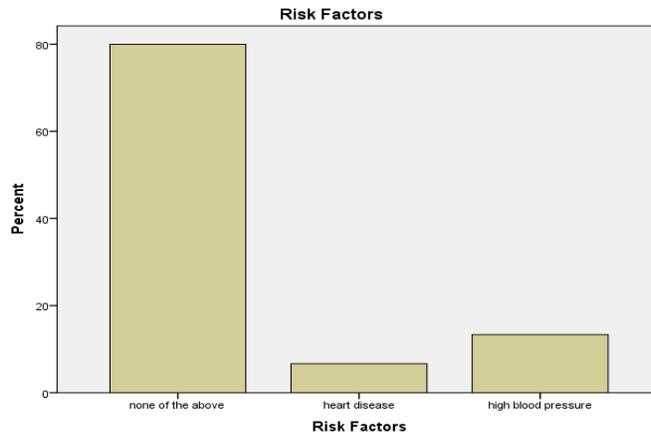
*Sample Characteristics*

Trait	Range	Mean	SD
Age	20-77	44.71	15.23

**Parishioner health habits**

In addition to basic demographic data, the participants were asked about health habits and history. Of the 20 participants, 10% (n=2) reported that they had hypertension and 5% (n=1) stated they had heart disease (See Figure 4.2). Forty percent (n=8) stated they consumed alcohol. No participants reported that they smoked. Of the 20 participants who answered this question, 35% (n=7) reported that they exercised on a regular basis (3-4 days per week).

Figure 4.2



### Changes in Outcome

To answer the clinical question, data were analyzed using the IBM SPSS 21.0 statistical program. Descriptive analysis was conducted on the participants' demographic data. A paired sample *t*-test was calculated to compare baseline and post educational intervention knowledge scores. A two-tailed *t*-test of significance was applied for all outcomes. Cronbach's alpha was utilized for testing reliability. The alpha level was set at .05. Chapter 5 will include a comprehensive analysis of the educational program.

### Statistical Testing and Significance

SPSS 21.0 program software was utilized to calculate a paired *t*-test. According to Schmidt and Brown (2012), the *t* statistic is an inferential statistical test which determines if there is a statistically significant difference between two groups. The paired *t*-test "is used when there is only one group or when the groups are related" (Schmidt and Brown, 2012, p. 328). A paired *t*-test compares the means of two scores from related samples. This statistical information can provide justification that an intervention was successful. Thus, this paired *t*-test compared baseline knowledge with post educational intervention knowledge. Statistical significance was set at  $p < 0.05$ . Setting

this value at this level informs one that the findings did not happen by chance and provides statistical confidence in the findings. A two-tailed *t*-test was interpreted to determine if any positive or negative differences exist among the sample.

Reliability analysis was performed on the knowledge questionnaire. This is necessary to validate and check the internal consistency of the questionnaire tool. Cronbach's alpha was used as a measure of scale reliability. Cronbach's alpha determines internal consistency while comparing all items at the same time (Schmidt and Brown, 2012). A Cronbach's alpha value close to 1.00 represents good internal consistency while a value close to 0.00 represents poor internal consistency. Temme et al. (2011) reported an alpha of .627 for internal reliability of the knowledge test instrument that was utilized in the pilot study. In this EBP project, the Cronbach's alpha value for baseline knowledge was .714 and the post education intervention had a Cronbach's alpha value of .579. Using the predetermined alpha level of .05 as a target goal, both the baseline and the post educational intervention demonstrated good internal consistency. This DNP student noted a difference between the baseline alpha score and the post educational intervention alpha scores. A decrease in the alpha score in the posttest may indicate a need for further items or rewording of questions in subsequent testing.

### **Findings**

Data analysis was utilized to understand the effects of a parish based educational program. Paired sample *t*-tests were calculated to compare baseline and post educational intervention knowledge scores. The knowledge questionnaire consisted of 10 multiple choice questions. Data was coded and entered into SPSS as followed: 0 for no answer or missing data, 1 for incorrect and 2 for correct. Thus, the highest score that participants were able to achieve was 20 out of 20. The same knowledge questionnaire was repeated after the 20 minute educational intervention to assess for knowledge

gained. The mean pretest score was 16.10 (sd= 2.38, range 8) which represented baseline knowledge. The mean post educational intervention score was 19.00 (sd= 1.38, range 5) which reflected knowledge gained from the educational program (See Table 4.2). Using a paired *t*-test, a statistically significant increase from pretest knowledge to posttest knowledge was found ( $t(19) = -5.837, p < .000$ ) [See Table 4.3]. This reflected an increase in knowledge after the educational session. This indicates that the heart healthy education program did improve knowledge of the participants (See Figure 4.3). In addition, 100% (n=20) of participants positively confirmed that they would like to see additional educational programs within this parish. This data supports that a parish based setting provides an avenue for education at the community level. In addition, the participants were asked what further topics they would be interested in for further educational programs. Some areas of interest included: stroke, diabetes, weight loss, healthy eating, and adult/children nutritional information.

The scores of each baseline and post educational intervention item were further analyzed. The DNP student hoped to identify areas of strengths and weaknesses with the participant's overall knowledge. Question three asked the participants to identify what they would do if someone was having a heart attack. All 20 participants answered this question correctly which demonstrates knowledge on the subject.

In addition, lower scores would suggest areas in need of improvement and prompt further educational programs. Upon analysis of scores, there were numerous areas of weakness noted. Question two prompted the participants to identify how many Americans are affected with heart disease. More than half the participants (55%, n=11) answered this question incorrectly. However, after the educational program 85% (n=17) answered the question correctly. Question four posed to be problematic for the participants. The question asked the participants to identify the signs of a heart attack. Ninety percent (n=18) initially answered this question incorrectly. Interestingly, only 60%

(n=12) answered the question correctly after the educational program. This prompts the DNP student to further implement educational programs towards identifying signs and symptoms of a heart attack.

The DNP student identified knowledge gained on several of the questions. For example, question six asked the participants the amount of servings of fruits and vegetables are recommended per day. Thirty five percent of participants (n=7) answered this question incorrectly. The post educational intervention results demonstrated that 100% of the participants answered this question correctly. In addition, question 10 asked the participants to identify the “good” cholesterol among the four choices. Initially, 55% (n=11) answered this question incorrectly and 10% (n=2) left the question unanswered. Post educational intervention results of question 10 demonstrated a gain in knowledge by 95% (n=19) of the participants answering the question correctly.

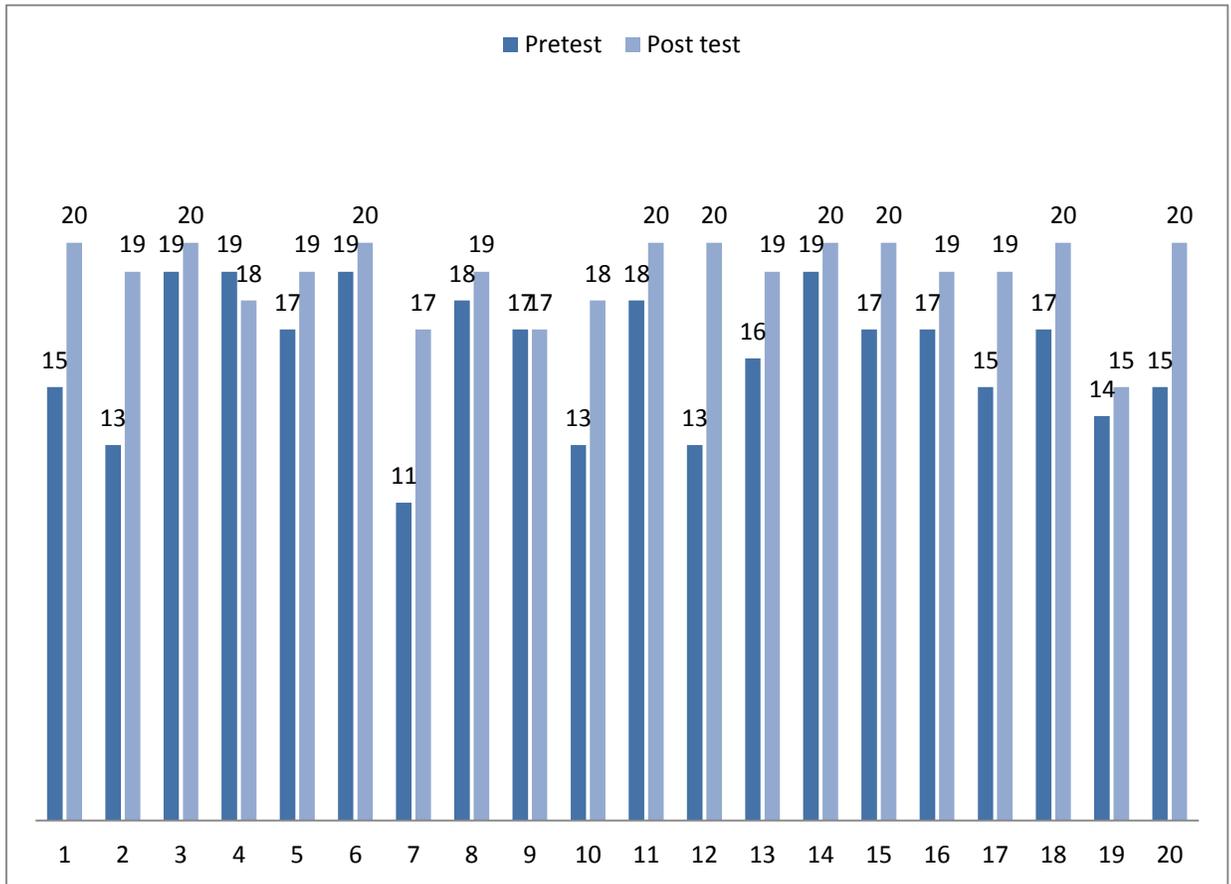
Table 4.2

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreTotal	16.1000	20	2.38195	.53262
	PostTotal	19.0000	20	1.37649	.30779

Table 4.3

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PreTotal PostTotal	-2.90000	2.22190	.49683	-3.93988	-1.86012	-5.837	19	.000

Figure 4.3



## CHAPTER 5

### DISCUSSION

This evidence based practice project examined the effects of a parish based heart healthy education program in a Midwestern, Roman Catholic Church. The concept of implementing a parish based education program was supported within the literature review. Literature suggested combining education with faith and spiritual concepts. Thus, a parish focused education program was the targeted population for implementation of this EBP project. The “Ten Commandments for a Healthy Heart” was utilized as a “parish themed” educational platform. The cardiovascular knowledge questionnaire was adopted from an educational pilot study (Temme et al., 2011) which focused on cardiovascular disease and identification of risk factors. This questionnaire evaluated baseline knowledge and post educational intervention knowledge. The results of the EBP project support a parish based heart healthy education program to increase cardiovascular disease and risk factor knowledge among the parishioners. Within this chapter the following will be discussed: explanation of findings, applicability of the theoretical framework and EBP model, strengths and weaknesses of this EBP project, and will discuss implications for the future.

#### **Explanation of Findings**

This EBP project PICOT question was: What is the effect of a 20 minute parish based heart healthy education program compared to the baseline on the knowledge of parishioners at a Midwestern, Roman Catholic Church? Data were collected using a pretest to establish baseline knowledge. The posttest was administered immediately after the 20 minute heart healthy education program to measure knowledge gained. Data analysis revealed that baseline scores did improve after the 20 minute heart

healthy education program. The mean baseline score was 16.10 (sd=2.38, range 8) and the mean post educational intervention score was 19 (sd=1.38, range 5). The post educational intervention scores showed a statistical significant improvement of knowledge with the p value of <.05. Thus, an increase from baseline knowledge to post educational intervention knowledge was found ( $t(19) = -5.837, p < .000$ ). The reliability of the questionnaire tool showed internal consistency with a baseline Cronbach's alpha of .714 and a post educational intervention Cronbach's alpha of .579 which is consistent with the reported Cronbach's alpha (0.627) from a pilot study conducted by Temme et al. (2011). The findings from this EBP project are similar to the reviewed literature in promoting parish based education, raising community awareness of heart disease, providing preventative measures to prevent heart disease, empowering parishioners to adopt healthy lifestyles, and to increase the perception of the relative threat of cardiovascular disease (Artinian et al., 2004; DeHaven et al., 2004; Frank & Grubbs, 2008; Holt-Lunstad et al., 2011; IOM, 2011; Kalenderian et al., 2009; Kotecki, 2002; Peterson, 2004 & 2011; Ruesch & Gilmore, 1999; Temme et al., 2001; Yanek et al., 2001).

Statistically, the data informed the DNP student that the 20 minute education program did increase the overall cardiovascular disease knowledge of the participants. However, the DNP student still identified the need for further education focused on cardiovascular disease. Analyzing baseline and post educational intervention scores assisted the DNP student in identifying knowledge strengths and gaps which further supports additional educational programs within this setting. For example, 90% (n=18) of the participants could not correctly identify the signs and symptoms of a heart attack. Even with the 20 minute education program, only 60% (n=12) of the participants answered the question correctly on the post educational intervention test. Identifying gaps in knowledge from implementing education programs was supported within the

literature. For example, Frank and Grubbs (2008) did not have statistically significant results to demonstrate an increase in knowledge gained within the execution of their education program. Rather, the authors found that the gap in knowledge occurred within age groups which suggested gearing education towards individuals between the ages of 18-30 years and those over 61 years. These subsequent findings may alter the implementation of future education programs. Thus, educational programs may have to be adjusted to accommodate the different needs of the audience.

Additionally, the DNP student sought to support the concept of providing parish based education. Literature supported various education projects that incorporate faith and spirituality (DeHaven et al., 2004; Ruesch & Gilmore, 1999) A systematic qualitative review of health-related programs within faith based settings was conducted by DeHaven et al., 2004. The overall findings within this review supported “a collaboration between faith based organizations and health professionals for the purpose of evaluating health activities and disseminating findings” (p. 1033). In addition, Ruesch and Gilmore (1999) entitled their heart healthy education program “Hearts To God.” This program incorporated stewardship, social support, spirituality, and wholeness as a framework. This prompted the DNP student to find a unique, parish themed education platform similar to “Hearts to God.” These authors suggested utilizing established national programs for educational platforms. Upon investigation, the DNP student found the “Ten Commandments for a Healthy Heart” on the NHLBI website. The DNP student believed that this platform captured the parishioner’s attention and cemented the information provided. Among Roman Catholics, the “10 Commandments” are biblical principles that play a pivotal role within the religion. The “10 Commandments for a Healthy Heart” promoted key points for behavior changes, increasing knowledge and preventative measures to reduce the risk for cardiovascular disease. Thus, parishioners could identify

and relate to the concepts of the “10 Commandments.” Multiple parishioners made positive comments about the educational format.

The DNP student implemented this EBP project at the parish level in order to capture the unique social network and camaraderie. Feasibility of implementing educational programs at Bible studies and parishioner meetings was supported within the literature (DeHaven et al., 2004; Frank & Grubbs, 2008; Ruesch & Gilmore, 1999). Frank and Grubbs (2008) incorporated their 20 minute educational sessions as a part of a regularly scheduled evening Bible study. Ruesch and Gilmore (1999) reported that the parish based setting offered a unique spiritual component that would enhance behavioral modifications and provide optimal outcomes. Thus, this prompted the DNP student to implement the EBP project during the MOMS group Bible study program and the Men’s Club ministry meeting. The DNP student does not believe that the EBP project would have been successful with a general invitation to all parishioners to participate. Rather, the concept of bringing information to the parishioners was noted within the literature and supported the implementation of this EBP project. In fact, 100% (n=20) positively confirmed they would like additional educational programs within the parish.

The DNP student sought to unite the healthcare professional with the community. This EBP project demonstrated that healthcare professionals can make positive impacts at the community level. Kotecki (2002) had posed that community partnerships can be developed between health care professionals and faith based organizations. In fact, Kotecki (2002) implemented a health promotion program that continued to be successful four years after initiation. The response from parishioners within this EBP project was positive. As stated above, the participants stated they would like to see more of these educational programs offered within the parish. This supports that participants were receptive to learning about health related topics. In addition, the participants were open to having a healthcare professional provide the education.

Analysis of knowledge retained in a follow up questionnaire would have been beneficial within this EBP project. However, time was a factor with implementation of this EBP. Literature suggested measuring knowledge in subsequent follow up evaluations. Yank et al. (2001) examined the long term effects of a parish based nutritional and physical activity educational intervention over the course of one year. This DNP student recommends implementing similar EBP projects with follow up data analysis.

### **Applicability of the Theoretical Framework**

The Health Belief Model served as the theoretical framework for this EBP project. Prior to implementation of the EBP project, the DNP student had identified that this model was a suitable fit to guide implementation. After implementation and evaluating the findings of the education program, the DNP student believes that this model served as a good fit for this particular EBP project. As a reminder, the HBM focuses on preventative health care practices and patient compliance. Results indicate that the participants gained knowledge from the education program ( $t(19) = -5.837, p < .000$ ). Also, the DNP student hoped that the parishioners would gain from the education program a sense of perceived benefit of becoming “heart healthy” and apply knowledge learned to adopt healthy, long lasting behaviors.

The five major components of the HBM served as a catalyst and guide for the education program. These components include: perceived susceptibility, perceived severity, perceived benefits and costs, motivation, and enabling or modifying factors. The contents of the cardiovascular knowledge questionnaire and the education program addressed each component as related to cardiovascular disease. For example, questions one and two pertained to the leading cause of death in the United States and the number of Americans who are affected by heart disease (perceived susceptibility, perceived severity). The “10 Commandments for a Healthy Heart” content covered

multiple ways to reduce risk of cardiovascular disease (smoking absence, heart healthy diet, regular exercise, knowing your blood pressure, and knowing your cholesterol level).

The HBM was an excellent fit for this EBP project; however it was not used to its fullest potential in the development of the project. The DNP student anticipates that the education program will serve as a catalyst for change among the parishioners. With the knowledge they acquired, the DNP student hopes that parishioners will utilize the information to adopt healthy eating habits, increase physical activity, participate in health screening opportunities, and partake in preventative health care measures (lipid screening and annual health physicals). Emerson et al., (2009) shared that their educational program cued the participants to participate in screening opportunities. In the future, this DNP student recommends gathering data to determine if participants actually participated in any screening or preventative measures in a follow up survey. In addition, a follow up survey of the participants can render if healthy lifestyle changes were adapted.

As stated earlier, Emerson et al. (2009) utilized the HBM as a framework for their prostate cancer educational program in a parish based setting. The utility of the HBM was demonstrated in this successful education program. Thus, this DNP student appreciated this application of the HBM at the parish setting. Since this evidence was congruent with this DNP student's EBP project, the model was utilized as a framework. The DNP student was able to grasp a full understanding of the use of the HBM in the implementation stage. The application of the HBM within this parish based heart healthy education program contributes to further development and strengthening of the theory.

The DNP student was not able to devise methods to measure motivating factors which are one of the five components of the HBM. However, this may not be a flaw with the framework, but with the established knowledge questionnaire tool that was adopted for this program. In addition, the questionnaire tool could have expanded questions in

regard to change and motivating factors. Thus, the EBP project could have measured not only the quantitative effects, but the qualitative effects of the education program.

### **Applicability of the EBP Framework**

The IOWA Model of evidence based practice was utilized as a framework for this parish based education program. This model was an appropriate fit for this EBP project, as it allowed the DNP student to identify a health “trigger” and apply methods to promote changes among the participants. The DNP student identified a need for further cardiovascular disease knowledge while performing blood pressure screenings within this parish. In addition, local news reported the current health care needs and concerns of Northwest Indiana. Cardiovascular disease, diabetes, and cancer were the leading health concerns of the region. As reported in national news, strategies to promote healthy diets, exercise, and achieving optimal health are plentiful. Armed with these triggers, concerns, and strategies, the DNP student was inclined to promote healthy living at the community level. The IOWA Model was a good fit for this EBP project for the applicability and ease in implementation. Titler et al. (2001) reported the IOWA Model could be utilized as a foundation for nurses to make decisions regarding daily practices with the goal to improve health care and outcomes. Parishioners armed with the knowledge learned from this education program can make healthy lifestyle changes in order to reduce their risk of cardiovascular disease.

As stated earlier, the strength of the IOWA Model is the ease and applicability of the framework to guide practice changes. The steps of the IOWA Model mimic the steps of the scientific method. Ciliska et al. (2011) lists the steps of the IOWA Model: a) identifying practice questions or “triggers” b) forming a team to develop, implement, and evaluate practice change c) synthesizing of research evidence d) piloting of EBP project e) evaluation of change. The DNP student identified the knowledge deficit which was the “trigger”. Developing the team to assist in successful implementation of the project

included key stakeholders which included: church pastor, DNP student, and church ministry liaison. As the EBP project progressed, additional team members were added for support. These team members included: Men's Club president, MOMS group president, and printer/designer. These additional team members were needed for communication to establish dates for the DNP student to present the EBP project and for developing the "Ten Commandments for a Healthy Heart" visual aid.

The IOWA Model encourages synthesis of research evidence. The DNP student performed an exhaustive literature search for relevant information. Authors of pilot studies and previous articles were contacted for permission to utilize tools and for clarification of implementation. The project manager for Temme et al. (2011) was contacted via email communication to utilize the cardiovascular knowledge tool. Permission to shorten the tool to 10 questions was granted. The DNP student had not planned for this during the implementation phase. However, communication between the project manager and the DNP student was quick and allowed for no delay for the EBP project. In addition, the DNP student contacted Kalenderian et al. (2009) for further information on the project design via email exchange. Again, the author replied back efficiently with the answers to all the questions. The DNP student knew that clarifying this would assist in the implementation phase of this EBP project. Lastly, the DNP student contacted the AHA and the NHLBI for permission to utilize educational formats. Permission was not needed because information shared via web pages was assumed as "public domain." The DNP student did not realize in the planning phase that contact with authors and national platforms would have been necessary. Luckily, all communication was efficient and did not delay implementation of the EBP project.

Implementation of the EBP project was met with barriers. However, the IOWA Model allowed for modifications as these barriers presented. First, the initial education program was presented to the Men's Club during one of their normal monthly meeting

sessions. The men were charged up with the upcoming "Oktoberfest" that was occurring that weekend in the church parking lot. Men were filing in and out of the room transporting equipment to the church parking lot located directly next to the Men's club meeting place. Once the men settled in for the presentation, there were conversations that were still occurring once the presentation started. The DNP student had to quiet and re-focus the men for the presentation. In addition, the participants had two members who continued to speak out of turn and shout out remarks during the presentation. Again, the DNP student had to refocus the group. This continued to occur throughout the education program. This was identified as a barrier and prevented the DNP student from focusing on the speech prepared. In fact, the DNP student had to modify the speech in order to retain the attention of the participants. The key information was peppered with personal and professional experiences. This appeared to get the presentation back on track and allow for completion of the education program. To be noted, the remaining participants were captivated during the presentation and maintained eye contact with the presenter. In fact, several of these gentlemen tried to quiet the two outspoken gentleman. After the program, 12 participants lined up to ask the DNP student questions pertaining to health related topics and to get their blood pressure checked. The DNP student brought a stethoscope and blood pressure cuff to the presentation to implement blood pressure screening. Unfortunately, the blood pressure cuff broke only after the fifth blood pressure measurement. However, the remaining participants were encouraged to have their blood pressure checked either at a blood pressure kiosk, at their primary care provider, or at the parish where blood pressure screenings are offered after every service. The DNP believed that the participants were concerned about their health, as indicated by the questions they asked after the presentation.

During the MOMS group, the DNP student had to make limited modifications of the education program during the presentation. The unexpected barrier was having

children present during the presentation. This group met in a parish owned house next to the parish school. There were numerous children crawling and running around during this program. A play room with numerous toys was located in the next room which kept the children busy. The DNP student had brought treats for the women. These treats were shared with the children which became a good distraction for the presenter. However, the DNP student was not bothered with this occurrence. Rather, the DNP student embraced the fact that mothers have an outlet for faith based learning and social networking outside of the home. Interestingly, the women attending this program were captivated with the program and were not fazed by the children's interruptions. The DNP student offered to hold a small child while the mother filled out the questionnaire.

An additional barrier identified for this EBP project implementation was the weather. Dates for implementation were established with the MOMS group president. However, three dates had to be rescheduled due to frigid temperatures, icy roads, and/or one of the multiple snowstorms that plagued the region. IRB extension had to be issued due to these circumstances. This was a modification that the DNP student had not expected. The DNP student could have scheduled the education program during early fall to prevent weather related delays. This information could lead healthcare professionals to schedule educational programs or health fairs during either the early fall or the late spring time.

Utilizing the IOWA Model, the DNP student was able to evaluate the effects of the parish based education program. Statistically, the EBP project successfully demonstrated an increase in cardiovascular disease knowledge of the participants. The DNP student should have given more thought on the inclusion of additional questions in response to several areas. As mentioned earlier, the DNP student could have implemented the education program early in the fall and collected follow up data during the spring months. This information could add to the concept of measuring lasting

healthy changes that were the result of the education program. Additionally, the DNP student might have added several questions geared toward the measurement of spirituality. For instance, Holt-Lunstad et al. (2011) evaluated if there was a true connection between spiritual well-being and physical health. This could be measured in further educational efforts in the future.

Thus, this EBP project demonstrated the applicability of all five stages of the IOWA Model. The DNP student utilized the IOWA Model to a) increase knowledge about cardiovascular disease and risk factors (trigger) b) develop a team of interested parties to implement the EBP project (church pastor, DNP student, church ministry liaison, Men's club president, MOMS group president, and printer/designer) c) perform a literature review that pertained to collecting relevant data to support parish based education programs d) implementing the heart healthy education program and e) analyzing/interpreting data to implement practice change. The IOWA Model allowed for problem solving and critical thinking during all phases of the process. Lastly, the IOWA Model allowed for modifications throughout the process which is why this was a good fit for this EBP project.

The DNP student did identify a weakness of the IOWA Model. There was scant information on the application of the model within the literature. The DNP student hoped to find relevant projects that utilized the IOWA Model as a framework. This information could have yielded information on how to decrease barriers and suggestion on making modifications during implementation.

### **Strengths of this Evidence Based Practice Project**

This EBP project had strengths that added to the success of this program. They will be discussed within this section. The need for providing education on cardiovascular disease and risk factors was adequate. Reception of the topic was well received from both groups of participants. This was revealed when participants asked specifically what

a heart healthy diet consisted of and asked how they can reduce their risk for heart disease. Relevant and current literature supported providing a parish based heart healthy education program. The education format allowed participants to relate and intertwine biblical meaning to the information provided. Participant's interest was piqued with the visual aid of the "10 Commandments for a Healthy Heart." The sample of participants represented both the male and female genders. This provides evidence that the education program is transferrable to different populations.

In addition, the DNP student was familiar with the health needs of the parish. This is in part due to the DNP student being actively involved within the health ministry of the parish. Thus, the DNP student was comfortable with the parishioners to provide education and answer health related topics. On the opposite position, the parishioners felt comfortable with the presence of the DNP student since she was a member of the parish and part of the health ministry. This allowed the parishioners to openly ask health related questions within the group. The comfortable setting allowed for open dialogue and the formation of a trusting, healthy healthcare professional relationship. DeHaven et al. (2004) was utilized as a model for bridging the gap between community and healthcare professional. The DNP student believes that this was accomplished with this EBP project.

With personal and professional work experience, the DNP student felt comfortable providing the heart healthy education program. The DNP student has been a cardiac telemetry nurse for over 17 years. Educating individuals about heart health is a topic that the DNP student can provide with confidence and ease. As stated earlier, the DNP student had to modify the education format to grasp the audience and hold their attention. Personal and professional examples were drawn upon to make the education format more relevant to the group.

Based upon the literature review, the education program was brought to the participants. This is rather than having the participants come to a designated, scheduled education program. The DNP student feared a lack of participation if the participants came freely on their own time. Incorporating the education program into a bible study or ministry meeting was well received by the participants. Knowledge from the health care professional was shared within a minimal time.

Parish based education programs is a reasonable place to share knowledge with parishioners. The social networking and camaraderie seen within these two groups was remarkable. The Men's Club members have a unique bond between the members. There is a sense of "brotherly love," respect, and compassion within the group. Education can implant clear health messages and stimulate discussion among the members. The members were comfortable to openly share thoughts, stories, and ideas about becoming heart healthy. This DNP student hopes that the conversation continued after the presentation was through. There were similar attributes within the MOMs group. This tight circle of women elicited the same type of faith based relationships among the members. These women meet frequently for Bible studies, programs, and meetings. The closeness of the women was apparent, as they knew each other well. The DNP student felt a true sense of friendship within the group. Building on that strength of social networking, the EBP project was able to weave education into this community system. The women supported each other's comments about becoming heart healthy.

The weather barriers could have prevented the implementation of this EBP project. However, good communication between the MOMS president allowed for multiple rescheduling of the program. The church ministry liaison added to the success of the program, as she managed to attain two ministries for the DNP student to present the EBP project. Implementation of this project demanded patience, persistence, good communication skills, and teamwork.

**Weaknesses of this Evidence Based Practice Project**

Having reported the strengths in the abovementioned section, this EBP project did not come without limitations. The DNP student set a goal of attaining 25-30 participants to be included in the education program. However, this goal was not realized, as 23 participants attended the education programs. Furthermore, the sample size dwindled down to 20 due to three participants not fully completing either the pretest or the posttest. This may have represented a disinterest in the topic presented. The DNP student might have offered some type of incentive to complete the questionnaires fully. For example, a prize drawing could have boosted participation within the participants. In addition to sample size, 70% of the participants were male and 30% were female. This was not an equal representation of both genders. As noted earlier, there were interruptions between both the Men's Club and MOMS group. These interruptions may have interfered with participants fully grasping the information or missing parts of the presentation. The DNP student had to continue on with the presentation despite interruptions due to the allotted time frame.

The DNP hoped to measure the significance of implementing a parish based education program over other arenas. This information could not be gathered with existing tools. This secondary outcome could have provided more statistical support to implement programs at this venue.

**Implications for the Future**

This EBP project examined the effects of a 20 minute parish based heart healthy education program among a Midwestern, Roman Catholic Church. The 20 minute heart healthy education program did increase the knowledge of participants about cardiovascular disease and risk factors. The implications for the future as it pertains to practice, education, theory, and research will be discussed within this section.

**Practice and Education**

Through an extensive literature review, the DNP student has realized that parish based education is becoming a new trend. Healthcare accessibility and affordability are real concerns with the changing economic situation. There is a demand for preventive health measures to promote optimal health and well-being. This allows the advanced practice nurse to assume a leadership and clinician role to meet the educational needs of the general public. Strategies to illicit community education programs are plentiful. However, the healthcare profession must be willing to step out of the comfort zone of an organization and into the community to implement such programs. The common thread throughout this EBP project was to bridge the gap between healthcare professional and the community. This EBP project has the potential to inspire healthcare professionals to take an active part in the health and well-being of individuals within their community. Providing education is inexpensive to accomplish and the results can promote lasting, positive healthy changes. The DNP student has evidence to support the continuation of educational programs at this parish.

**Theory**

With the use of the HBM, the DNP student believes that this framework provided documented support for further education programs. The process of the HBM can assist in identifying a need for change, a process to implement the change, and a way to measure the effects of future programs. This project demonstrated the usefulness and applicability of the HBM to assist this DNP in promoting healthy lifestyles and behavioral changes.

**Research**

As noted, further research implications were acknowledged by this DNP student. Follow up of participants could yield data to support long lasting success of this education program. A bigger sample size with equal representation of each gender could

add to the applicability of this EBP project. This EBP project can add to the growing body of educational programs within the literature.

The review of literature and this EBP project supports the feasibility of implementing educational programs at the community level. Disseminating this information to academic journals and research conferences can stimulate healthcare professionals to be actively and personally involved in the health status of their community.

### **Conclusion**

In conclusion, this EBP project demonstrated that a 20 minute parish based education program can increase cardiovascular disease and risk factor knowledge. Individuals armed with this knowledge can examine their lifestyles and risk factors to adapt new, healthy behaviors. Education can provide the drive to implement change in order to prevent the negative effects of cardiovascular disease. A parish based education was chosen as a model to support education at the community level which was supported within the literature. Advanced Practice Nurses, as healthcare professionals, can replicate this EBP project to connect education at the community level. Simple educational programs can have a positive, long lasting impact on the health status of the community. This EBP project answered the PICOT question and provided a framework for future projects.

## REFERENCES

- American Heart Association. (2011). *American Heart Association policy statement: Cost to treat heart disease in United States will triple by 2030.*
- Retrieved from <http://newsroom.heart.org/news/1241>
- Artinian, N.T., Schim, S.M., Vander Wal, J.S., & Nies, M.A. (2004). Eating patterns and cardiovascular disease risk in a Detroit Mexican American population. *Public Health Nursing, 21*, 425-434.
- Centers for Disease Control and Prevention. (2013). *Heart disease facts: America's heart disease burden.* Retrieved from <http://www.cdc.gov/heartdisease/facts.htm>
- Ciliska, D., DiCenso, A., Melynk, B.M., Fineout-Overholt, E., Stetler, C.B., Cullen, L.,...Dang, D. (2011). Models to guide implementation of evidence-based practice. In Melynk, B. & Finout-Overholt, E. (Eds.). *Evidence-based practice in nursing & healthcare: A guide to best practice* (pp.241-275). Philadelphia, PA: Lippincott, Williams, & Wilkins.
- DeHaven, M.J., Hunter, I.B., Wilder, L., Walton, J.W., Berry, J. (2004). Health programs in faith-based organizations: Are they effective? *American Journal of Public Health, 94*, 1030-1036.
- Emerson, J.S., Reece, M.C., Levine, R.S., Hull, P.C., & Husaini, B.A. (2009). Predictors of new screening for African American men participating in a prostate cancer educational program. *Journal of Cancer Education, 24*, 341-345.
- Frank, D. & Grubbs, L. (2008). A faith-based screening/education program for diabetes, CVD, and stroke in rural African Americans. *The ABNF Journal, 19*, 96-101.
- Holt-Lunstad, J., Steffen, P.R., Sandberg, J., & Jensen, B. (2011). Understanding the connection between spiritual well-being and physical health: an examination of

ambulatory blood pressure, inflammation, blood lipids and fasting glucose.

*Journal of Behavior Medicine*, 34, 477-488.

Institute for Clinical Systems Improvement (ICSI). (2011). *National Guideline*

*Clearinghouse: Healthy Lifestyles*. Retrieved from <http://guideline.gov>

Kalenderian, E., Pegus, C., Francis, C., Goodwin, N., Saint Jacques, H., & Lasa, D.

(2009). Cardiovascular disease urban interventions: baseline activities and findings. *Journal of Community Health*, 34, 282-287.

Kotecki, C. N. (2002). Developing a health promotion program for faith-based

communities. *Holistic Nursing Practice* 16, 61-69.

Melnyk, B.M., & Fineout-Overholt, E. (2011). *Evidence-based practice in nursing and*

*healthcare: A guide to best practice*. Philadelphia, PA: Lippincott Williams & Wilkins.

Peterson, J.A. (2004). *Promotion of heart health in mid-life women: the church-based*

*heart and soul physical activity program*. (Unpublished doctoral dissertation).

University of Nebraska, Omaha, Nebraska.

Peterson, J.A. (2011). Evaluation of the heart and soul physical activity program by

African American women. *The ABNF Journal*, 22, 64-72.

Polit, D.F. & Beck, C.T. (2008). *Nursing research: Generating and assessing evidence*

*for nursing practice* (8<sup>th</sup> ed.). Philadelphia, PA: Lippincott, Williams, & Wilkins.

Renderman, Vanessa. "Health care study findings don't surprise." *The Times* [Northwest

Indiana: South Lake County Edition] 27 May 2013: A1. Print

Ruesch, A.C., & Gilmore, G.D. (1999). Developing and implementing a healthy heart

program for women in a parish setting. *Holistic Nursing Practice*, 13, 9-18.

Schmidt, N.A., & Brown, J.M. (2012). *Evidence-based practice for nurses: Appraisal and*

*application of research* (2<sup>nd</sup> edition). Sudbury, MA: Jones & Bartlett Learning LLC.

- Temme, M., Goode, S., Fausto, D., & Jones, J. (2011). Effect of an educational workshop on heart disease prevention knowledge of employees in rural, northeast Missouri: a pilot study. *Undergraduate Research Journal for the Human Sciences, volume 10*, 1-8.
- Titler, M.G., Kleiber, C., Steelman, V.J., Rakel, B., Budreau, G., Everett, L.Q.,...Goode, C.J. (2001). The Iowa model of evidence-based practice to promote quality care. *Critical Care Nursing Clinics of North America, 13*, 497-509.
- U.S. Department of Health and Human Services. (2013). Healthy People 2020 topics & objectives: *Heart disease and stroke*. Retrieved from <http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=21>
- White, J.A., Drechsel, J., & Johnson, J. (2006). Faithfully fit forever: A holistic exercise and wellness program for faith communities. *Journal of Holistic Nursing, 24*, 127-131.
- Yanek, L.R., Becker, D.M., Moy, T.F., Gittelsohn, J., & Koffman, D.M. (2001). Project joy: Faith based cardiovascular health promotion for African American women. *Public Health Reports, 116*, 68-81.

**BIOGRAPHICAL MATERIAL****Kristin A. Kilinski**

Kristin began her nursing career in 1996 after graduating from Valparaiso University's accelerated baccalaureate nursing program. Since graduating, she has practiced on a telemetry unit at The Community Hospital in Munster, IN. Kristin has remained active in her nursing career at this facility serving on many committees including the Standards and Practice Committee and shared governance committee. In addition, she has served an active role as leader and educator through positions of charge nurse and clinical preceptor. Kristin was honored to have been selected as one of the first case managers within this organization. Kristin is an active member in the American Association of Nurse Practitioners (AANP), Sigma Theta Tau International (STTI), and the Coalition of Advanced Practice Nurses in Indiana (CAPNI). Kristin presented her evidence based practice project through a poster presentation for the 21<sup>st</sup> Annual Northwest Indiana Nursing Research Consortium in the fall of 2013. In addition, Kristin has served as an adjunct clinical professor for Valparaiso University's junior nursing students during their medical-surgical rotations. Kristin is currently attending Valparaiso University and will graduate with her Doctor of Nursing Practice (DNP) in May of 2014. Her passion for education and community involvement are evident through her active participation with the health ministry of her parish. Kristin organizes weekly blood pressure screenings at her parish and was instrumental in implementing a parish health fair in the fall of 2013. Kristin became interested in educating parishioners about cardiovascular disease while performing weekly parish blood pressure screenings which led to the development of her EBP project. She hopes to institute further educational programs within her parish. After achieving her DNP degree and becoming a board certified family nurse practitioner, Kristin would like to work in the primary care setting.

**ACRONYM LIST**

ABPM: Ambulatory Blood Pressure Monitoring

ACA: Affordable Care Act

ACMS: American College of Sports Medicine

AHA: American Heart Association

BMI: Body Mass Index

CDC: Centers for Disease Control

CES-D: Center for Epidemiological Studies Depression Scale

CINHAL: Cumulative Index of Nursing and Allied Health Literature

CPR: Cardiopulmonary Resuscitation

CVD: Cardiovascular Disease

DM: Diabetes Mellitus

DNP: Doctorate in Nursing Practice

EBP: Evidenced Based Practice

ERIC: Education Resources Information Center

FACIT-Sp-Ex: Functional Assessment in Chronic Illness Therapy-Spiritual Well-Being Expanded Scale

FBHTP: Faith-Based Health Training Program

HBM: Health Belief Model

HPKAT: Health Promotion Knowledge Assessment Tool

HSPAP: Heart and Soul Physical Activity Program

ICSI: Institute for Clinical Systems Improvement

IRS: Internal Revenue System

JI: Joanna Briggs Institute

KR: Kuder Richardson

LWP: La Crosse Wellness Project

MeSH: Medical Subject Headings

MOMS: Ministry of Mothers Sharing

NHLBI: National Heart, Lung, and Blood Institute

PAR-Q: Physical Activity Readiness Questionnaire

PICOT: Patient population, intervention of interest, comparison of interest, outcome of interest, and time

PSS: Perceived Stress Scale

RMANOVA: Repeated Measures Analysis of Variance

RWT: Rockport Walk Test

SIQ: Support Interaction Questionnaire

SYH: Search Your Heart

USDHHS: U.S. Department of Health and Human Services

7-DAR- Seven Day Activity Recall

**Appendix A**

**Evidence Data Table**

<b>Author(s), Publication, Level of Evidence</b>	<b>Population, Setting</b>	<b>Design, Intervention(s), Comparisons</b>	<b>Outcomes and Effect Measures</b>
<p>Artinian et al. (2004) <i>Public Health Nursing</i></p> <p>Eating patterns and cardiovascular disease risk in a Detroit Mexican American population</p> <p><i>Level VI</i></p>	<ul style="list-style-type: none"> <li>• 32 Mexican Americans from a large Roman Catholic Church in Southwest Detroit</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive design study</li> <li>• Examined food consumption patterns</li> <li>• Rate Your Plate and Personal Health Risk Assessment questionnaires were utilized</li> </ul>	<ul style="list-style-type: none"> <li>• SPSS Version 11 utilized to analyze data</li> <li>• Unhealthy eating patterns outnumbered heart healthy eating patterns</li> <li>• 3% of sample reported eating healthy snacks: fruits, pretzels, or low-fat crackers</li> <li>• 36% of sample reported engaging in less than 30 minutes of moderate level physical activity on most days</li> <li>• 36% of sample did not know their BP</li> <li>• 36% of sample did not know if their BP was over 140/90</li> <li>• 28.1% of sample did not know if they were overweight</li> <li>• Additional health discrepancies identified: proportion of overweight participants, smoking exposure, and lack of physical activity</li> </ul>

<p><b>Author(s), Publication, Level of Evidence</b></p>	<p><b>Population, Setting</b></p>	<p><b>Design, Intervention(s), Comparisons</b></p>	<p><b>Outcomes and Effect Measures</b></p>
<p>DeHaven et al. (2004) <i>American Journal of Public Health</i></p> <p>Health programs in faith-based organizations: Are they effective?</p> <p><i>Level V</i></p>	<ul style="list-style-type: none"> <li>• Faith-based setting</li> <li>• Education programs incorporate prayers, hymns, scripture readings</li> </ul>	<ul style="list-style-type: none"> <li>• Systematic qualitative review of health-related programs within faith-based settings from 1990 and 2000</li> <li>• 386 initial articles screened</li> <li>• 53 articles provided information that lined health programs with positive health benefits</li> </ul>	<ul style="list-style-type: none"> <li>• 60.4% of educational programs were aimed at congregation members</li> <li>• 50.9% were focused on primary prevention</li> <li>• Cardiovascular health was covered in 20.7% of these programs</li> <li>• 28 articles (72.5%) reported outcome measures: reduction of cholesterol levels, weight, and BP levels; increased consumption of fruits and vegetables, increased knowledge post educational session, increase awareness of risk factors, and increase of number of people who participate in screening activities</li> </ul>

<b>Author(s), Publication, Level of Evidence</b>	<b>Population, Setting</b>	<b>Design, Intervention(s), Comparisons</b>	<b>Outcomes and Effect Measures</b>
<p>Frank &amp; Grubbs (2008) <i>The ABNF Journal</i></p> <p>A faith-based screening/ education program for diabetes, CVD, and stroke in rural African Americans</p> <p><i>Level VI</i></p>	<ul style="list-style-type: none"> <li>• 120 parishioners in four rural African-American churches in north Florida</li> <li>• Age range 18-83 with mean age of 45 years</li> </ul>	<ul style="list-style-type: none"> <li>• Non-random control study</li> <li>• Educational session incorporated into their weekly Bible study</li> <li>• 20 minutes educational session given by trained nurses</li> <li>• Health screenings provided after educational sessions and post-test: BP, weight, height, blood glucose level</li> <li>• Revised form of Symptoms Scale to measure pre and post educational knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge levels pre and post educational session</li> <li>• No change in overall pretest (M=42.58, SD=6.76) and posttest scores (M=42.78, SD=6.70)</li> <li>• Means of pretest and posttest scores did differ between age groups: 18-30 years pretest mean was 38.42 and posttest mean was 42.33 (p= .03); 31-60 years pretest mean was 44.41 and posttest mean was 43.70 (p=.36); Over 61 years, pretest mean was 38.50 and posttest mean was 39.08 (p= .71).</li> <li>• Data suggests education targeted at age groups of 18-30 and those over 61 years</li> </ul>

Author(s), Publication, Level of Evidence	Population, Setting	Design, Intervention(s), Comparisons	Outcomes and Effect Measures
<p>Holt-Lunstad et al. (2011) <i>Journal of Behavioral Medicine</i></p> <p>Understanding the connection between spiritual well-being and physical health: An examination of ambulatory blood pressure, inflammation, blood lipids, and fasting glucose</p> <p><i>Level VI</i></p>	<ul style="list-style-type: none"> <li>• 100 married adults aged 19-71 years (M=28.28, SD=8.67)</li> <li>• Caucasians (83%), Hispanic (10%), Asian (1%), Native Americans (1%), Pacific Islander (1%), and multi-racial (3%)</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive, non-random study</li> <li>• Sample wore 24 hour ABPM, blood work for: blood glucose levels, C-reactive protein, and cholesterol panel drawn</li> <li>• Background Health Questionnaire, Center for Epidemiological Studies Depression Scale, and Functional Assessment scales were utilized</li> <li>• Use of two-tailed dependent t-tests and regression analysis to interpret data</li> </ul>	<ul style="list-style-type: none"> <li>• Spiritual well-being may be cardio protective</li> <li>• Spiritual environment lends to a stronger social connection and optimal healthy behaviors</li> <li>• Spiritual wellness was related to lower 24 hour SBP (p&lt;.001)</li> <li>• Spiritual well-being associated with lower 24 hour DBP (p&lt;.02)</li> <li>• Higher spirituality associated with lower C-reactive protein (p&lt;.04), marginally lower triglycerides (p&lt;.09), and lower fasting glucose levels (p&lt;.006)</li> <li>• Higher spiritual well-being was linked with lower BMI (p=.004) and linked with lower stress (p=.002) and lower depression (p&lt;.001)</li> </ul>

<b>Author(s), Publication, Level of Evidence</b>	<b>Population, Setting</b>	<b>Design, Intervention(s), Comparisons</b>	<b>Outcomes and Effect Measure</b>
<p>Institute for Clinical Systems Improvement (2011)</p> <p>Healthy Lifestyles Guideline summary</p> <p><i>Level VII</i></p>	<ul style="list-style-type: none"> <li>• Adults ages 18 years and older</li> </ul>	<ul style="list-style-type: none"> <li>• Six to twelve healthcare professionals comprise working group</li> <li>• Develop guidelines from literature searches and reviews from clinical trials, meta-analysis, and systematic reviews</li> </ul>	<ul style="list-style-type: none"> <li>• Increase the percentage of population screened for presence of healthy lifestyles and who have screening results discusses</li> <li>• Increase the percentage of population who are not at a recommended healthy goal with regards to five health behaviors: increase physical activity, improve nutrition, decrease tobacco use and exposure, decrease hazardous and harmful drinking and alcohol</li> <li>• Increase the percentage of population in community who are aware of one or more community resources available to address each of the five healthy lifestyles</li> <li>• Clinical highlights suggest that community resources are becoming more popular to meet</li> </ul>

<b>Author(s), Publication, Level of Evidence</b>	<b>Population, Setting</b>	<b>Design, Intervention(s), Comparisons</b>	<b>health needs Outcomes and Effect Measures</b>
<p>Kalenderian et al. (2009) <i>Journal of Community Health</i></p> <p>Cardiovascular disease urban intervention: Baseline activities and findings</p> <p><i>Level VI</i></p>	<ul style="list-style-type: none"> <li>• 388 urban African-American, Latino, and Hispanic churches</li> <li>• 211 trained volunteer health liaison ambassadors</li> <li>• Heritage Affiliate of the AHA (New Jersey, Connecticut, Long Island, and New York City)</li> </ul>	<ul style="list-style-type: none"> <li>• Partnered with AHA: “Search Your Heart” program</li> <li>• Educational sessions that focused on high cholesterol, diabetes, high blood pressure, high cholesterol, stroke, obesity, nutrition, physical activity, CVD warning signs, and CPR</li> <li>• 30-45 minute educational sessions</li> </ul>	<ul style="list-style-type: none"> <li>• Improve knowledge of cardiovascular disease and stroke risk factors</li> <li>• Post-educational session surveys</li> <li>• 78% of participants were aware of the five warning signs of stroke and 67% were aware that heart disease is the number one killer for women and men</li> <li>• 31% reported they did not exercise at all</li> <li>• 48% stated their diet included 1-2 servings of fruits and vegetables per day</li> </ul>
<p>Kotecki (2002) <i>Holistic Nursing Practice</i></p> <p>Developing a health promotion program for faith-based communities</p> <p><i>Level VI</i></p>	<ul style="list-style-type: none"> <li>• Urban, African American faith-based community</li> <li>• 63 participants</li> </ul>	<ul style="list-style-type: none"> <li>• Capitalize on social support of church</li> <li>• Education program: Faith-Based Health Training Program (FBHTP)</li> <li>• 90 minute educational sessions offered twice a year</li> <li>• Pre-post/post-educational test: health promotion knowledge assessment tool (HPKAT)</li> </ul>	<ul style="list-style-type: none"> <li>• Increase health knowledge</li> <li>• Results were statistically significant: <math>p=.00</math> on a two-tailed <math>t</math>-test with a Chronbach’s alpha of 0.05</li> </ul>

<b>Author(s), Publication, Level of Evidence</b>	<b>Population, Setting</b>	<b>Design, Intervention(s), Comparisons</b>	<b>Outcomes and Effect Measures</b>
<p>Peterson (2004)</p> <p>Promotion of heart health in mid-life women: the church-based heart and soul physical activity program (unpublished doctoral dissertation)</p> <p><i>Level II</i></p>	<ul style="list-style-type: none"> <li>• 42 Mid-life (35-65 years of age) women from four churches in two towns in Kansas</li> <li>• Convenience sample</li> </ul>	<ul style="list-style-type: none"> <li>• Randomized control study</li> <li>• Church-based physical activity program</li> <li>• 12 weeks program focus on physical activity</li> <li>• Utilized Social Comparison Theory</li> <li>• Baseline screenings: blood pressure, BMI, height, weight, Physical Activity Readiness Questionnaire, Rockport Walk Test, and Support Interaction Questionnaire (SIQ)</li> <li>• Intervention group received the HSPAP social support intervention: met weekly for 12 weeks</li> <li>• Comparison group was self-directed with booklets and one hour of verbal instructions</li> </ul>	<ul style="list-style-type: none"> <li>• Physical activity will increase with social support system of the church</li> <li>• Intervention group: physical activity increased from 99.18min/week to a mean of 240.74 min/week</li> <li>• Comparison group: physical activity increased from 134.54 min/week to 202.39 min/week</li> <li>• SIQ scores for intervention group increased from 8.78 at baseline to 17.25</li> <li>• SIQ scores for comparison group decreased from 12.12 to 10.59</li> </ul>

<b>Author(s), Publication, Level of Evidence</b>	<b>Population, Setting</b>	<b>Design, Intervention(s), Comparisons</b>	<b>Outcomes and Effect Measures</b>
<p>Peterson (2011) <i>The ABNF Journal</i></p> <p>Evaluation of the Heart and Soul Physical Activity Program by African American Women</p> <p><i>Level VI</i></p>	<ul style="list-style-type: none"> <li>• 7 women ages 42 to 65 years of age</li> <li>• Completed the HSPAP program</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative design study</li> <li>• Discussions by facilitators</li> <li>• Discussions were coded by two researchers and an assistant to verify consistent concepts and themes</li> </ul>	<ul style="list-style-type: none"> <li>• Women believed that physical activity would increase with encouragement by family, friends, and church members</li> <li>• Spiritual messages and prayer would strengthen their commitment to attain an active lifestyle</li> </ul>

<b>Author(s), Publication, Level of Evidence</b>	<b>Population, Setting</b>	<b>Design, Intervention(s), Comparisons</b>	<b>Outcomes and Effect Measures</b>
<p>Ruesch &amp; Gilmore (1999) <i>Holistic Nursing Practice</i></p> <p>Developing and implementing a healthy heart program for women in a parish setting</p> <p><i>Level VI</i></p>	<ul style="list-style-type: none"> <li>• St. Vincent de Paul Parish, Midwestern parish</li> <li>• Seven white, middle class women ages 40 to 86 participated</li> </ul>	<ul style="list-style-type: none"> <li>• Heart healthy education program: “Hearts To Go”</li> <li>• Rooted in trans theoretical model of behavior</li> <li>• La Crosse Wellness Project (LWP) as a wellness framework</li> <li>• Bible verses and scripture incorporated into educational program</li> <li>• 5 consecutive weeks of education with each session lasting 2 hours</li> <li>• Women paid fee to participate</li> </ul>	<ul style="list-style-type: none"> <li>• Increase knowledge about CVD risk and lifestyle modifications</li> <li>• Outcomes measured by post program evaluation form</li> <li>• 43% (n=3) stated they had an increase understanding of woman’s risk of heart disease</li> <li>• 86% (n=6) reported they now understand the signs of heart disease</li> <li>• 86% (n=6) stated they would recommend the program to another individual</li> <li>• 100% (n=7) reported the length of the program was “just right” and 100% noted that the program facilitator was knowledgeable, paced the program according to the needs of the participants, and allowed adequate time for questions</li> <li>• Participants gave positive verbal feedback for inclusion of prayer within sessions</li> </ul>

Author(s), Publication, Level of Evidence	Population, Setting	Design, Intervention(s), Comparisons	Outcomes and Effect Measures
<p>Yanek et al. (2001) <i>Public Health Reports</i></p> <p>Project Joy: faith based cardiovascular health promotion for African American Women</p> <p><i>Level II</i></p>	<ul style="list-style-type: none"> <li>• 16 churches in the Baltimore area: 8 Baptist, 3 Holiness, 5 Roman Catholic, United Methodist and Holiness denomination</li> <li>• 529 women</li> </ul>	<ul style="list-style-type: none"> <li>• Random control trial</li> <li>• 3 intervention strategies: behavioral model based on standard group methods with weekly educational sessions, the same behavioral group model supplemented with a spiritual component and church support, and a control group of non-spiritual, self-help interventions</li> <li>• 188 in standard intervention group, 267 spiritual intervention group, and 74 in the self-help group</li> <li>• 20 week educational period with sessions that lasted 30-45 minutes</li> </ul>	<ul style="list-style-type: none"> <li>• Long term effects of educational programs within parish-based settings</li> <li>• Measureable outcomes: BMI, weight, waist circumference, SBP, and sodium intake</li> <li>• Intervention group: lost total of 19.8 pounds, BMI decreased by 3.3 kg/m<sup>2</sup>, waist circumference decreased by 3.9 inches, SBP decreased by 8.1 mmHg, and sodium intake decreased by 300mg/day</li> <li>• Self-help group: decrease in weight by 7 pounds, BMI decrease by 1.2 kg/m<sup>2</sup>, waist circumference decreased by 1.2 inches, SBP decrease by 3.3 mmHg, and sodium intake decrease by 41.4 mg/day</li> </ul>

**APPENDIX B****TEN COMMANDMENTS FOR A HEALTHY HEART****TEN COMMANDMENTS FOR A HEALTHY HEART**

1. Know your risk factors for heart disease.
2. Talk to your doctor about reducing your risk of heart disease.
3. Have your blood pressure checked regularly.
4. Know your cholesterol numbers. [These include total cholesterol, HDL or "good" cholesterol, LDL or "bad" cholesterol, and triglycerides.]
5. Have your blood sugar level checked for diabetes.
6. Do not smoke cigarettes or use other tobacco products.
7. Eat for your heart health.
8. Get regular physical activity. [At least 30 minutes of moderate physical activity on most or all days of the week.]
9. Aim for a healthy weight.
10. Know the signs and symptoms of a heart attack and the importance of seeking medical help immediately.

**APPENDIX C**  
**CARDIOVASCULAR KNOWLEDGE QUESTIONARRE**

**Demographics**

Age:

Gender:

Circle if you have a history of: heart disease, stroke, or high blood pressure

Circle if you: smoke or drink alcohol

Do you exercise on a regular basis (3-4 days per week)?

**Pretest**

1. Which of the following is the leading cause of death in the United States
  1. Heart Disease
  2. Stroke
  3. Accidents
  4. Cancer
2. Heart Disease affects more than \_\_\_\_ Americans
  1. 10 million
  2. 15 million
  3. 20 million
  4. 25 million
3. If you think someone is having a heart attack, you should immediately
  1. Lay the person on their side
  2. Have the person take deep breaths
  3. Call 911
  4. Have the person drink water

4. Which of the following is a signal of a heart attack
  1. Pain spreading to the legs
  2. Flush, red colored skin
  3. Denial or feeling of impending doom
  4. Abdominal cramps
5. According to the American College of Sport Medicine, a person should exercise
  1. 30 minutes of moderate activity 3 times a week
  2. 30 minutes of moderate activity 5 times a week
  3. 30 minutes of vigorous activity 3 times a week
  4. 30 minutes of vigorous activity 5 times a week
6. According to the Center for Disease Control and Prevention (CDC), how many servings of fruit and vegetables should a person eat per day
  1. 3 servings
  2. 5 servings
  3. 7 servings
  4. 9 servings
7. Controllable risk factors for heart disease include which of the following
  1. Gender
  2. Family History
  3. Smoking
  4. Age
8. Which of the following is a signal of a heart attack
  1. Shortness of breath
  2. Slurred speech
  3. Blurred vision
  4. Headache
9. Which of the following is an uncontrollable risk factor for heart disease
  1. Smoking
  2. High Blood Pressure
  3. Ethnicity
  4. Diabetes
10. Which of the following is considered the “good” cholesterol
  1. High Density Lipids

2. Low Density Lipids
3. Medium Density Lipids
4. There is no “good” cholesterol

**Posttest**

1. Which of the following is the leading cause of death in the United States
  1. Heart Disease
  2. Stroke
  3. Accidents
  4. Cancer
2. Heart Disease affects more than \_\_\_\_ Americans
  1. 10 million
  2. 15 million
  3. 20 million
  4. 25 million
3. If you think someone is having a heart attack, you should immediately
  1. Lay the person on their side
  2. Have the person take deep breaths
  3. Call 911
  4. Have the person drink water
4. Which of the following is a signal of a heart attack
  1. Pain spreading to the legs
  2. Flush, red colored skin
  3. Denial or feeling of impending doom
  4. Abdominal cramps
5. According to the American College of Sport Medicine, a person should exercise
  1. 30 minutes of moderate activity 3 times a week
  2. 30 minutes of moderate activity 5 times a week
  3. 30 minutes of vigorous activity 3 times a week
  4. 30 minutes of vigorous activity 5 times a week

6. According to the Center for Disease Control and Prevention (CDC), how many servings of fruit and vegetables should a person eat per day
  1. 3 servings
  2. 5 servings
  3. 7 servings
  4. 9 servings
7. Controllable risk factors for heart disease include which of the following
  1. Gender
  2. Family History
  3. Smoking
  4. Age
8. Which of the following is a signal of a heart attack
  1. Shortness of breath
  2. Slurred speech
  3. Blurred vision
  4. Headache
9. Which of the following is an uncontrollable risk factor for heart disease
  1. Smoking
  2. High Blood Pressure
  3. Ethnicity
  4. Diabetes
10. Which of the following is considered the “good” cholesterol
  1. High Density Lipids
  2. Low Density Lipids
  3. Medium Density Lipids
  4. There is no “good” cholesterol
11. Would you like to see more educational programs like this within the parish?
  1. Yes
  2. No

**Topic Suggestions:**

