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**A Faith-Based Quality Improvement Project to Increase
Awareness, Prevention, and Management of Coronary Heart
Disease in African Immigrants**

Temitope S. Okpebho
Boise State University

A Faith-Based Quality Improvement Project to Increase Awareness, Prevention, and
Management of Coronary Heart Disease in African Immigrants

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Temitope S. Okpebho

Approved: *Lamela Gebike*, Chairperson
Paul Stuchlik, Committee Member

Approval Acknowledged: *Lamela Gebike*, DNP Program
Director

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Abstract

Problem Description: Coronary heart disease (CHD) affects people globally, and it is the leading cause of death in the United States. Despite increased CHD awareness, evidence shows the increased prevalence and low CHD awareness among African Immigrants. According to Boateng et al. (2017), African immigrants are more likely to have CHD risk factors and be unaware. This may be due to changes in eating habits, lack of physical activity, increased stress level, and the adaptation of the Western diet.

Rationale: This project included implementing a culture care theory in a faith-based organization to increase awareness, management, and prevention of CHD in African Immigrants. A tailored, culturally congruent educative plan valued the cultural beliefs of the people and improved patient health outcomes.

Interventions: Three monthly educational sessions and a personalized consultation with the interdisciplinary team were conducted at a church and faith-based clinic over three months. The educational sessions were designed with the three modalities of culture care as it relates to African Immigrants. The purpose of the intervention was to raise awareness, prevent and manage the risk factors of CHD in African immigrants, using cultural and faith beliefs.

Results: Twenty-six (n=26) African Immigrants attended the educational programs, received personalized consultation from the interdisciplinary team and visited the clinic for biophysical measurements. The results were measured using modified closed-ended and open-ended questionnaires. Pre and post test survey showed a 19% increase in CHD knowledge and awareness, 36% increase in physical activities awareness and 48% increase in the self-management of CHD risk factors. There was a 7.7% reduction in the mean blood pressure, 7.3% mean blood glucose, and 2.6% mean body weight of participants.

Conclusion: The increased level of CHD awareness can be attributed to the faith-based intervention and culture care theory implemented to raise awareness. This DNP project showed that culturally appropriate care and tailored care could raise the level of CHD knowledge and reduce CHD risk factors. The findings from the DNP project suggested that cultural consideration and adaptation of faith beliefs in AIs medical care raised CHD awareness and decreased CHD risk factors such as blood pressure, blood glucose, and body weight.

Keywords: African Immigrants, Coronary Heart Disease, Faith, Church, Culture Appropriate Care

A Faith-Based Quality Improvement Project to Increase Awareness, Prevention, and
Management of Coronary Heart Disease in African Immigrants

Problem Description

Coronary heart disease (CHD) is the leading cause of death in the United States (US), killing over 370,000 people per year (Heron, 2014). CHD is a disease of the heart, heart muscles, and blood vessels caused by atherosclerosis or plaque buildup within the arterial walls. Eventually, a piece of the plaque buildup breaks apart, blocking the flow of blood to the heart, leading to stroke, heart attack, or death. While evidence-based studies show that CHD is preventable, and appropriate control of risk factors can reduce the prevalence of the disease, the incidence of CHD among Blacks remains high due to health disparities.

The six major CHD risk factors are obesity, lack of physical activities, hyperlipidemia, high blood pressure (HBP), type-2 diabetes mellitus (DM), and smoking (American Heart Association [AHA], 2016). The three most common conditions that increase the risk of severe CHD events and heart failure are HBP, DM, and obesity. According to Williams & Leavell (2012), Blacks are twice as likely to die from CHD compared to Whites, and the prevalence rate of HBP, DM, and obesity are two times higher in Blacks than in the White population.

According to the Pew Research Center (PEW, 2015), the African Immigrant (AI) population in the US quadrupled from 0.8 million in 1980 to 3.8 million in 2015, and the number of AIs is projected to triple by the year 2060. With this influx, the International Diabetes Federation (IDF) predicts that by the year 2030, 28 million Africans will have DM and 63 million will be pre-diabetic (International Diabetes Federation, 2014). O'Connor (2014) found that AIs have higher glucose levels, hypertension, and greater visceral adiposity compared to

other African ethnicities such as African Americans (AAs) and African Caribbean (ACs); these conditions are linked to an increased risk for CHD.

Darden, Richardson, and Jackson (2013) found that a significant number of AIs are unaware of their cardiovascular risk due to the lack of health information. According to Agyekum & Newbold (2016) only 15% of AIs that are aware of their HBP adequately control their blood pressure. Considering the increase in AIs migration from Africa to the US, and the likelihood to be unaware of their CHD risk factors, it is crucial to develop cultural care that targets AIs.

Maryland is one of the states with high number of AIs and AI migration. In 2015, an estimated 25,000 people migrated from Africa to the Baltimore-Washington metropolitan (BWM) area (Commodore-Mensah, 2017). AIs migrated with their families from various West African countries such as Kenya, Ghana, Nigeria, and the Sub-Saharan regions because of war, poverty, corruption and the urge to seek a better standard of living for themselves and their families. AIs in the BWM area have a high rate of HBP at 40%, DM at 16%, and obesity at 88% (Commodore-Mensah, 2017). These are the most common conditions for increased risk for CHD.

In addition, AIs are more likely to have two or more risk factors for CHD and be unaware leading to stroke and heart attack (Boateng et al., 2017; Commodore-Mensah et al., 2017). Evidence suggests that the lack of CHD awareness and increased risk of CHD in AIs may be due to changes in eating habits, lack of physical activity, increased stress level, and the adaptation of the Western diet. Using literature reviews and evidence-based practices, a faith-based intervention was developed as a Doctor of Nursing Practice (DNP) project to raise awareness and prevent and manage CHD risk factors in AIs.

Available Knowledge

A literature search was conducted to review evidence-based research on the use of faith-based intervention in promoting a healthier lifestyle and managing CHD risk factors in AIs. The search was conducted in four databases, ERIC, CINAHL, UpToDate, and MEDPUB, using PICO question generated terms. The PICO question was: for AIs aged 18 years and over, does the use of faith-based intervention promote awareness for CHD risk factors, identifying signs and symptoms of CHD, and improve the management of CHD? The search terms included “African Immigrants,” “African Americans,” “coronary heart disease,” “prevention,” “diet,” “physical activity,” “awareness,” “risk factors”, and “intervention”. Results were filtered using dates between 2014 and 2018 and journals published in English. Articles that included children and populations with severe cardiac events, such as stroke and heart attacks, were excluded. Inclusion criteria were articles with samples aged 18 years and over, immigrants, and minority groups. The initial search resulted in 36 articles, selection criteria were applied and 13 articles were chosen and reviewed. Articles are listed and summarized Appendix A

This synthesis of evidence explored and summarized evidence-based interventions that are most appropriate in the identification, prevention, and management of CHD risk factors in AIs. Based on the distinct characteristics of the AI population and evidence-based interventions reviewed, the most effective interventions are culturally sensitive faith-based interventions.

Coronary Heart Disease and African Immigrant

After the literature review, six articles illustrated the increasing number of immigrants from Africa to the BWM area and the challenges encountered with lack of insurance, diet, new environment, and healthcare (See appendix A for details). Four articles showed that the prevalence of heart disease risk factor was high among AIs and that the risks of obesity and

diabetes increased in foreign-born US residents (Agyemang, 2013, Tsujimoto, Kajio, & Sugiyama, 2016). O'Connor (2014) found, in a randomized trial, that AIs are less obese than AAs; however, AIs had more hyperglycemia, hypertension, and visceral adiposity. Among AIs the absence of symptoms such as palpitations and headaches is regarded as an absence of hypertension and CHD. This belief hindered AIs from seeking healthcare (Akinlua, Meakin, & Freemantle 2017).

Faith-based Interventions

Seven articles suggested that a culturally appropriate faith-based care plan is effective in improving cardiovascular health in AIs and some studies found that education was the most effective way to improve cardiac health (Commodore-Mensah et al., 2017). In addition, incorporating faith-based nurse coordinated care (Ferdinand, & Ferdinand, 2009), self-management (Walton-Moss et al. 2015), and visual teaching (Ramoal, Oliveira, Oliveira and Ribeiro, 2017) increased awareness and reduced CHD in immigrants and minority groups. Faith-based education is health education grounded in spiritual and cultural beliefs (Yanek et al, 2001). Faith-based organizations (FBO) play an important role in meeting the spiritual and healthcare needs of AIs; thus, religious organizations are effective in health promotion. Cardiovascular health programs implemented in a faith-based setting are effective in disseminating health messages and reducing cardiovascular risk among AAs (Tettey, 2017). It can be inferred that since AAs and AIs have similar religious beliefs, faith-based CHD education can be effective in increasing awareness, prevention, and management of CHD in AIs.

Culturally Appropriate Intervention

Culturally appropriate intervention is a tailored health education intervention that promotes awareness, identifies risk factors, and improves the management of CHD. Behera,

Winkleby, & Collins (2016) recommended a tailored educational response that is more visual than written because it is more likely to lead to behavior modification and reduction in the risks of CHD. Hwang et al. (2017) found that the AA community required stroke education and personalized prevention messages that are culturally sensitive and accessible. Evidence-based research showed that education was the most common intervention, followed by counseling, support, and exercise classes. Due to the challenges in behavior modification, the authors (Walton-Moss, B., Samuel, L., Nguyen, T. H., Commodore-Mensah, Y., Hayat, M. J., & Szanton) recommended community based-interventions such as community walks, decreased non-healthy beverages, and personalized meal teachings (Walton-Moss et al, 2014).

Reoccurring health education positively impacts cardiovascular risk factors. Evidence suggests that frequent health education from healthcare providers such as physicians, nutritionists, exercise physiologists, nurses, and lifestyle coaches is successful in behavior modification. (Ramoal, Oliveira, Oliveira and Ribeiro, 2017).

To summarize, the strengths of the studies are the sample sizes, and the populations studied. The sample sizes for the studies were greater than fifty, and the study populations were AIs, and other minority or immigrant groups that share similar values and cultures. The limitations include the inability to generalize the studies because sample sizes may not be a true representation of the population, the findings may only be limited to the religious community, specifically churches. (Appendix A).

Rationale

Theoretical Model

Although CHD is preventable, it is still the leading cause of death in the United States, especially for AIs. Consequently, providing an educative action plan in a personally and

culturally relevant format may provide a better understanding of CHD risk factors and improve AIs health outcomes. Madeleine Leininger developed Culture Care Theory (CCT), which describes diverse cultures using health-illnesses, caring, and nursing practices. Leininger (1993) affirmed that culture affects all aspects of life, and she defined health as a state of well being that is culturally distinct and valued by a designated culture. Therefore, it is necessary to provide care that matches individuals or a group's values, practices, and cultural beliefs. AIs are more likely to understand healthier lifestyle choices and CHD teachings through culture care. CCT is essential to the AIs population because values, beliefs, and practices of a culture tend to be ingrained in language, spirituality, kinship, technology, and the environment (McEwen & Wass, 2011).

Modalities guide nursing judgment, plan of care, and provide beneficial and appropriate care to cultural groups. The three modalities for CCT are the preservation and/or maintenance, accommodation and/or negotiation, and repatterning and/or restructuring (Appendix B). CCT guides culture care and the theory was applied during the development of scholarly project interventions. CCT has three modalities guiding actions for providing care.

The first modality is the cultural care preservation and/or maintenance, which guided professional actions and nursing decisions in providing culturally appropriate care to AIs in the BWM area. This modality promotes the preservation of core cultural values that AIs practice to preserve their beliefs. In the AI community, the elderly population prefers specific diets or herbs to treat CHD risk factors. Some of the cultural preferences are the use of vinegar and tree scrubs to control blood pressure and to pray away all diseases in accordance to their beliefs. An appropriate nursing cultural care intervention is providing nonjudgmental care and using the cultural beliefs and values to develop educational programs to manage CHD risk factors.

The second modality is cultural care accommodation and/or negotiation; this modality is the flexible adaptation of the nursing plan of care and cultural beliefs to promote health (McFarland & Wehbe-Alamah, 2015). The third modality is the cultural care repatterning and/or restructuring; this modality promotes changing and modifying health care with a newer plan of care (In McFarland & Wehbe-Alamah, 2015). The newer plan of care involves a healthier lifestyle choices and providing information to manage CHD risk factors. The restructuring phase includes knowledge and teachings on the sustainability of the new healthy lifestyles that were adopted (McFarland & Wehbe-Alamah, 2015).

Faith based health organizations have better cultural understanding for patients, leading to decreased disparity in care provision. Faith-based teachings enhance medical understanding of patients and reduce organizational cost (Isaac, Hay, & Lubetkin, 2016). Culture impacts all aspects of human life and health perceptions held by various cultural groups may result in members of those groups choosing traditional and religious beliefs rather than modern medical treatment. The purpose of applying this framework was to provide an adjustable faith-based intervention that meets the needs of the culturally diverse population for the prevention and management of CHD.

A Logic Model (LM) was developed to assess the scholarly project interventions (Appendix C). The LM was designed to organize and show relationships in the planning and implementation phase. The model increases the probability that an intervention will be successful and serves as a reference guide for everyone in the project (W.K. Kellogg, 2004). In addition, the LM aids in the replication of intervention, it serves as a guide for resources needed, activities, inputs, target audience, and expected outcomes. For the scholarly project, the LM connects the purpose of the intervention and the expected outcome, which is to raise awareness,

and prevent and manage CHD risk factors in AI. There are eight short-term outcomes, eight medium outcomes, and six long-term outcomes, but for this scholarly project, only the short-term outcomes were evaluated (Appendix C). The LM and the CCT connect the purpose of the intervention and the outcomes.

Specific Aims

The scholarly project aimed to evaluate the use of the faith-based intervention in increasing awareness, prevention, and management of CHD of AIs in the BWM region. The project was designed to assess CHD risk factors, increase healthier lifestyle behaviors, and teach self-management of CHD risk factors through culturally tailored live classes, personalized interdisciplinary consultation, and provision of information that would help identify critical cardiac events in project participants. The goal of the project was to reduce CHD risk factors in AIs in Victory Temple Clinic (VTC) and Baltimore Washington Metro (BWM) area and to improve their quality of life through faith-based education.

Methods

Context

The population for the scholarly project was AIs aged 18 years and over, who resided in the BWM area. The scholarly project was implemented at Victory Temple Clinic (VTC), Victory Temple Church, and Victory House Church. VTC is located in the BWM area, and deals with a patient population that is predominantly AIs. The Redeemed Christian Church of God Victory Temple established the clinic out of necessity to provide health care for uninsured AI in the community. The project population was adult AI aged 18 and older who are alert, oriented, follow commands, and are capable of making clinical decisions.

VTC is a health ministry that consists of health care providers and volunteers who are devoted to promoting health awareness, safety, and health maintenance in the church and community. The head pastor of the church, created VTC in 2005 to provide health care for the uninsured in the church. Victory House Church is located 15 miles south of VTC, and it is a subsidiary church that shares the same doctrines and leadership with Victory Temple Church. The medical director of VTC also serves as the pastor in charge at Victory House Church and also manages the VTC.

The primary focus of the VTC is the health prevention and management of chronic diseases. Subsequently, the clinic provides first aid, primary health care, and emergency assistance to church members and the community. Primary health care provided at the clinic includes blood pressure monitoring, diabetes management, weight management, referrals to larger free clinics for laboratory work and further treatments, physical assessments, and free medication. The clinic opens every Thursday from 6 pm to 9 pm staffed with two registered nurses, two nurse practitioners, one medical doctor, and one pharmacist. Due to limited funding and severe understaffing, resources at the clinic are stretched, making it almost impossible to provide the appropriate care to AIs or expand services. The VTC staff did not receive formal faith-based training. However, they are experienced and familiar with faith-based health care, education, and treatment.

The organizational culture and readiness for change at the VTC supported the scholarly project because the project positively benefits the clinic and the community. A signed memorandum of understanding between the DNP student and the director of the VTC was obtained. Long term, the scholarly project may reduce the number of critically ill in the community and the number of clinic visits. Based on a personal discussion with the current head

nurse of VTC (Personal communication, RN, June 15, 2018) a decrease in AIs clinic visits will reduce staff exhaustion and the use of already limited resources.

A strengths, weaknesses, opportunities, and threats (SWOT) analysis was conducted to assess the VTC. The strength of VTC is that a popular local church established the clinic and the congregation of the church and clinic are predominantly AIs. Not only is the clinic located in the church, but members of the church also staff the clinic, and the services are free. The clinic provides brief educational information that is designed to inform patients about CHD and the risk factors. The management of the church and clinic supported the project.

The weakness of the clinic is that the patients may trust the power of God, faith, and or spirituality more than health facilities based on their beliefs, values, and health. Also, the programs offered by the clinic are mostly unknown to the community. This obscurity may lead to inadequate collaboration between the clinic and other health facilities. Furthermore, VTC's limited operational hours lead to constraining medical consultation, restricting patient education, and an in-depth review of medical history. Due to limited resources, workforce, and an increase in the number of patients, the current staff of VTC is exhausted. VTC Staff have full-time jobs at the same time, they volunteer at the clinic. The church funds the clinic with donations from church members. Although there are weaknesses in the clinic, there are also available opportunities to improve health care in the clinic.

The opportunities include implementing a faith-based intervention for AIs to increase CHD awareness and encourage healthy lifestyles. The clinic can leverage its strong local and international ties with other churches to improve and expand health care services to other churches. Some of the threats are lack of transportation that may result in low participation, rigid

church doctrines or beliefs by church members that may hinder participants from accepting healthcare interventions.

Timeline

A timeline sectioned into five categories; planning, implementation, data collection, and data analysis and dissemination phases was developed (Appendix D). Assessment and planning started in August 2017 and continued into December 2018. The literature review, community assessment, problem statement, CCT theoretical model, LM, and timeline were developed in this phase. After the Boise State Institutional Review Board (IRB) approval in May 2019, implementation and data collection started and continued into September 2019.

The intervention started with a preliminary session in May 2019 to introduce the project, obtain informed consent, administer demographic data, and pre and posttests questionnaires. Subsequently, the DNP student facilitated three monthly educational sessions to participants in June, July, and August 2019. Participants were invited to the clinic for a personalized consultation with the interdisciplinary team and biophysical data collection from June 2019 to August 2019. Data analysis started in June 2019 and ended on February 2020. Dissemination of results with Victory Temple Church members, stakeholders, and Boise State faculty began in March of 2020.

Interventions

The intervention involved three stages, planning, implementation, and dissemination of the results. In the planning stage, a LM table was developed based on evidence from the literature review and the CCT (Appendix C). Eight short-term outcomes were evaluated to measure the effectiveness of the scholarly project.

- Outcome 1: By April 1, 2019, all stakeholders approved faith-based training curriculum for volunteers and project participants developed by DNP student as measured by shareholder's written and verbal approval.
- Outcome 2: By August 1, 2019, DNP student and VTC staff facilitated one educational session per month for the same group of participants on three CHD risk factors as measured by demographic profile survey and attendance.
- Outcome 3: By August 1, 2019, 5% increased level of CHD awareness by participants per monthly faith-based educational content as measured by modified pre and post questionnaires.
- Outcome 4: By August 1, 2019, 5% reduction in the mean blood pressure of all project participants as measured by means blood pressure pre and post intervention.
- Outcome 5: By August 1, 2019, 5% reduction in the mean blood glucose of all project participants as measured by blood glucose level pre and posts intervention.
- Outcome 6: By August 1, 2019, 5% reduction in the mean body mass index (BMI) of project participants as measured by the mean of BMI pre and posts intervention.
- Outcome 7: By September 2019, 50% of the VTC staff, Victory Temple Interdisciplinary Team (VIDT) and VTC volunteers evaluated the efficacy of the faith-based training curriculum as measured by an open-ended evaluation questionnaire.
- Outcome 8: By September 1, 2019, 50% of participants' rated the efficacy of the faith-based CHD program as measured by the Heart Disease Fact Questionnaire (HDFQ) (Appendix E).

The steps of the intervention were as follows. For Outcome 1, the educational plan was endorsed and verified by the stakeholders. The education outline was designed with a faith-based

focus in addition to the AHA guidelines for CHD. In May 2019, after the IRB approval, participants were recruited from VTC and Victory Temple church to accomplish Outcomes 2 and 3. Flyers were posted and distributed after Sunday service, and announcements were made during the Sunday Service (Appendix F). For Outcome 2, interested participants were invited to the preliminary sessions. During the preliminary session, the DNP student consented interested participants and administered the demographic profile survey. DNP student stored the completed surveys in a secure location.

For Outcome 3, the DNP student facilitated the first 50 minutes educational session in June 2019 using PowerPoint slides and demonstrations. During the sessions, the DNP student discussed AIs risks factors for developing CHD. The teaching lasted for 20 minutes; the question and answer segment for 10 minutes, and pre and post surveys for 10 minutes. Available VTC staff provided translation to participants that needed the service. VTC provided light refreshments for the participants, and they were referred to VTC for baseline data collection.

For Outcome 4, 5, and 6 a biophysical baseline data were collected at VTC in June 2019, and follow data in July of 2019. The final data were collected in August 2019. The data collected was blood pressure readings, body weights in pounds, and finger sticks blood glucose levels. Baseline data from June was compared to the mean of the data collected in July and August. The mean of the data collected in July and August was the post-intervention data used for data analysis in September 2019.

The sessions were offered for three months, one session per month in June, July, and August of 2019. The focus for June 2019 educational session was CHD knowledge. The DNP student administered the Coronary Heart Disease Knowledge Questionnaire (CHDKQ) to the 26 participants in attendance pre and post-education (Appendix G). In July 2019, the focus for the

session was physical activities and nutrition, and the Physical and Health Nutrition Questionnaire (PANQ) was administered pre and post-education (Appendix H). The final educational session in August 2019 focused on self-management, and the Heart Health Self Efficacy and Self Management (HH-SE-SM) was administered pre and post-education (Appendix I). Outcome 3 was evaluated with the data collected from the three surveys.

The implementation ran concurrently with the sustainability stage; this is to provide the participants with the skills to maintain the new habits and knowledge. For outcomes 4, 5, and 6 evaluations, participants were invited to the clinic for biophysical data collection (body weight, blood pressure readings, and blood glucose levels).

Between June 2019 and August 2019, participants were scheduled a 30 minutes consultation with the interdisciplinary team. The multidisciplinary team consisted of a registered nurse, a primary care provider, a pharmacist, and a social worker for a one-time consultation to provide individualized teaching for the management of CHD risk factors. Clinic staffs in the course of their daily clinical work routinely provide personalized education. The patient education includes medication reconciliation, management of high blood pressure, and management of diabetes, recommended physical activities, and locating CHD prevention resources in the community.

Post-intervention data were collected to evaluate for Outcomes 7 and 8. Evaluation data were collected between June and August and compared to the baseline data previously collected in June (Outcome 8). The implementation stage ended in August, and on the last Thursday in August, the DNP student administered the Victory Temple Staff Questionnaire (VTSQ) to the VTC staff, the data were analyzed to evaluate outcome 7 (Appendix J). The purpose of

Outcomes 7 and 8 was to evaluate the effectiveness of the project, sustainability, and improve future interventions.

Measures

To accurately measure Outcomes 2 - 8, the DNP student modified preexisting questionnaires and developed two open-ended and four closed-ended questionnaires to fit objectives of the project. The modified questionnaires were used to evaluate outcomes, understand participant's experiences, and improve the quality of the program for future interventions. The information that follows outlines the measures for each outcome and is further detailed in Appendix K.

DNP student measured Outcome 1 with a Memorandum of understanding (MOU) signed by the medical director of VTC. Outcome 2 was measured with the demographic data. The demographic data were used to identify trends, similarities, and variances of the project participants (Appendix L). The five-question survey measured age, level of education, gender, and years lived in the US.

Outcome 3 was measured with modified questionnaires. The modified questionnaires were adapted from the Heart Disease Fact Questionnaire (HDFQ) and The Attitude and Beliefs about Cardiovascular Disease (ABCD) risk questionnaire. These questionnaires were widely used in previous studies and have established reliability and validity (Tran, Zimmerman, & Kupzyk, 2016). The overall Cronbach's alpha rating for HDFQ was 0.742 (Angosta, & Speck 2014) and ABCD was 0.933, the rating scores indicate good reliability (Saeidi, & Komasi, 2017). All authors of questionnaires gave permission for their use

During the first, second, and third educational sessions, data were collected to evaluate baseline CHD education level (Outcome 3). The baseline data were compared to the post

educational data to evaluate the impact of the scholarly project. Biophysical data were recorded at the initial clinic visit and at every clinic visit between May 2019 and August 2019 (Outcomes 4, 5, and 6).

The cost of the project was slightly different with the proposed budget; this is detailed in the statement of operations, and the 3 years budget plan (Appendix M, N and O). The revenue for the scholarly project was \$8606.00. Sources of expense were educational material, medical and conference room rentals, medical equipment, technology, and personal wages. The room rental and personnel wages incurred the most cost at \$6,600 and \$1,188 respectively.

Appendix N details the cost of implementing the project over a two to three years period factoring inflation. The inflation rate factored into year two and three grand total was obtained from the United States Bureau of Statistics and Consumer Price Index for All Urban Consumers (2019). The inflation rate ranged from 1.9 to 3% across the source of expense.

The statement of operations detailed in Appendix M, illustrated the in-kind donations. Project expenses are all in-kind donations from the DNP student, VTC, VTC staff, and VTC church. The DNP student donated her time for education, development of training materials, skills, implementation time, data collection, and analysis of the data. VTC and VTC staff donated their time and medical room. The VTC church donated a conference room for the monthly education and a medical room equipped with medical instruments for assessment. The technologies needed were a computer for statistical analysis and statistical software such as Excel. These technologies were available to the DNP student at no cost.

Analysis

To show clinical significance, the DNP student evaluated eight scholarly project outcomes- Outcomes 1_8 using quantitative and qualitative data analysis. Outcome 1 was

measured with the signed MOU. Outcome 2 was analyzed using counts, percentages, intervals, and tables. For example, the demographic data age was categorized by ten years or more intervals from 18 to 30, 31 to 40, 41 to 50, 51 to 60, and 61 and above. Gender was defined as male or female. Employment status was categorized as employed or not employed. Educational status was categorized into six categories, less than high school education, high school education, some college education, and graduate education and vocational education. The qualitative data are analyzed using the nominal scale because there is no order or hierarchy between the response data (Ciliska, Dicenso, & Cullum, 1999). The quantitative data, which included the total number of participants per session, was analyzed using counts and percentages. A count was used to determine attendance, the number of participants who took the survey and signed the informed consent.

Outcome 3 was analyzed using frequency and means scores of pre and post-survey data. The project participants are not truly representative of the AI population in the US. Hence, data collected for Outcome 3 was analyzed using frequencies, means, percentages, and percentage changes. For graphical representation, data from each educational session was independently illustrated using a grouped bar chart. The chart compared pre and posttest responses for each survey.

The group means of the biophysical data collected for Outcomes 4, 5, and 6 were analyzed using averages and percentages. Baseline blood pressure measurements were compared to the mean of all blood pressure measurements collected during the project.

For outcome 7, summaries of responses for the VTSQ survey were grouped into themes or by the frequency of response because the responses may differ in words but are similar in themes. Qualitative data obtained from the open-ended questions are documented by categories.

These categories are presented in a table format with visual illustration and frequent answers grouped.

For Outcome 8, the DNP student analyzed the HDFQ questionnaire by measuring and describing the effect of the interventions for participants using the pre and posttest quantitative data. To calculate the increase in the level of knowledge and the efficacy of the program the pretest score was compared to the posttest score using descriptive statistics such as the central tendencies such as mean, median, and mode. For the most accurate and valid result, triangulation was applied; this was done through the use of multiple data collection methods and data analysis (Carter et al, 2014). The DNP student administered questionnaires and collected additional biophysical data to strengthen data credibility.

Ethical Considerations

Multiple strategies were taken to protect participants during the project. A signed (MOU), which is an agreement between VTC and DNP student briefly described the project and allowed the DNP student to implement the intervention at the location. In 2018, the DNP student trained as a social and behavioral researcher with the Collaborative Institutional Training Institute (CITI) to protect and secure participants and data. The IRB protects human subjects; the IRB approved the scholarly project in May 2019 (Appendix P). In June 2019, IRB modification was approved for a change in venue (Appendix Q). The Health Insurance Portability, and Accountability Act (HIPPA) laws was reviewed with all program participants, VTC staff, and volunteers. Data were collected anonymously with no personal identifiers linkable to the participants.

Hard copies of data were stored in a file cabinet secured with lock and keys at the clinic office; these data will be shredded after project completion in May 2020. Data are analyzed with

an electronically password-protected computer at VTC; the password was only available to the DNP student. VTC is secured with a lock and 24 hours security monitoring system. All electronic files on the VTC computer will be deleted after data analysis in the spring of 2020. Copy of the analysis will be uploaded to the secure password protected Boise State University Google site within the DNP program and stored for three years.

There was no notable conflict of interest. Threats, bias, and conflict of interest were managed and controlled through education. Bias was limited through reliable data collection, validated measuring tools, and data triangulation. The DNP student recognized the existence of potential personal bias exists and monitored this through reflection and discussion with the project supervisory committee.

Results

At the end of the intervention, of the 39 individuals that attended the preliminary session, 23 signed the informed consent, and 3 gave verbal consent. A total of 26 individuals (67%) consented and participated in the three educational sessions, the personalized consultation session, and the required clinic follow-ups – at least one per month. Participants followed the AHA guidelines to increase physical activity, increase fruit and vegetable intake, and self-manage risk factors for CHD (AHA, 2012).

The demographic data (Outcome 2) showed that 11 participants were male (42%, n=26), and 15 participants were female (58%, n=26). All participants were born in African countries such as Nigeria, Ghana, Sierra Leone, and Cameroon. Eighty-five percent of the participants reported been employed and 77 % of the participants reported that they are college graduates. The average length of stay in the US was reported as 15 years (Appendix T). It is important to

note that an equal percentage of participants (35%, n=26) lived in the US for 0 to 5 years, and 16 years and over (Appendix R, S and T).

Evaluation of the survey data (Outcome 3) indicated an increased CHD awareness measured by three modified pre and post questionnaires. The CHDKQ results indicated an increased level of knowledge from 68% pre-test to 87% post-test in the same session (Appendix U). The second questionnaire PANQ showed an increased physical and nutrition knowledge from 59% pre-test to 95% post-test. (Appendix V).

The third questionnaire, HH-SE-SM measured the level of confidence. Participants rated their level of confidence using multiple-choice answers "Not confident," "somewhat confident," "confident," or "very confident." The pre-test and post-test HH-SE-SM data showed that the level of confidence increased from 16% to 69%. Thus, the participants are confident in self-management of CHD risk factors post-educational session (Appendix W).

Outcome 4 was evaluated with the average blood pressure of the project participants as a group. The sum of the group initial systolic blood pressure, divided by the total number of participants (26) calculated the group average baseline blood pressure. The same calculation method was applied to the diastolic blood pressure. The participants' average group baseline blood pressure was 141-mmHg systolic and 85 mmHg diastolic. After the intervention, the average group blood pressure was 133 mmHg systolic and 77 mmHg diastolic. The data indicated an 8% reduction in the average group blood pressure after the 3-month intervention. (Appendix X).

Outcome 5 was evaluated with data from 4 participants. The four participants self-reported their medical diagnosis of type II diabetes; the data showed that the group's mean baseline blood glucose was 172 mm/dl pre-intervention, and the group's mean blood glucose

post-intervention was 159 mm/dl. The pre-intervention mean was calculated with the average of the initial blood glucose reading. The post-intervention mean was the average of all the blood glucose level collected at all points of interaction after the initial interaction. The result indicated a 7% reduction in the level of blood glucose in the participants. (Appendix Y).

Outcome 6 was evaluated with body weight data. All participants were weighed with a digital weighing scale at the initial clinic visit. The group's mean was the average weight data collected at the initial clinic interactions. The participants were weighed at all clinic interactions, the post-intervention group mean was the average of all the body weight at all clinic interactions after the initial visit. The pre-intervention mean and post intervention mean was compared to show a 2.6% reduction in participant body weight (Appendix Z). Although the expected Outcome was not met, any reduction in weight is meaningful to participants.

For Outcome 7, eight VTC staff assessed the efficacy of the project and the faith-based training curriculum using an open-ended questionnaire VTSQ. The staff commented that they believe the project and curriculum were successful. The comments ranged from "The teachings encouraged healthy eating," "Patients realized the importance of cardiovascular health," and "We do not have 30 minutes to spend with each patient, it was nice to have a program that lasted that long for each patient".

Outcomes 8 were evaluated using the HDFQ survey; participant's score increased from 68% pre-intervention to 87% post-intervention. The 19% increase indicated that the faith-based cultural sensitive intervention was efficient in raising CHD awareness.

Process Measures and Outcomes

AIs are more likely to have two or more CHD risk factors and be unaware because of lack of access to information, and health care (Commodore-Mensah et al., 2017). The lack of physical symptoms such as headaches, nausea, or vomiting provide a false sense of good health

and the increased CHD risk may be due to changes in eating habits, stress level and lack of physical activities. The preliminary session and the three educational sessions occurred over a three-month period. The educational sessions were created to raise CHD awareness in the AI community and provided participants with the knowledge and confidence to self-manage their CHD risk factors.

The preliminary session introduced the quality improvement project to the AI community. The first educational session assessed CHD knowledge using pre and post questionnaire. The second educational session, participants were shown ways to make their favorite African dishes without the fatty ingredients and they were introduced to healthier alternatives. In addition, the DNP student and the VTC staff engaged all the participants in a 5-minute physical activity based on their physical abilities. The activities included walking in place. The participants were encouraged to walk at least 30-minutes per day as recommended by the AHA.

The third educational session, participants learned about management of CHD risk factors. Participants were provided skills to self manage CHD risk factors and provided information on community resources such as social workers, free clinics and nutritionists. Post intervention, participants voiced that they walked more and noticed an increase in their physical abilities.

Contextual Elements That Interacted With the Intervention

The educational sessions started with a 5-minute prayer, praise and worship, and a 20-minute educational teaching. Included in the teaching was cooking demonstrations of healthy foods, and physical activities. It ends with the question and answer segment facilitated by the

DNP student. The combination of food, education, and the opportunity to ask questions in a safe environment united the community and initiated a conversation on health and heart disease.

Associations between Outcomes, Interventions, and Relevant Contextual Elements

Participants asked questions about their current medication, current regimen, adjusting to a new community, foods to avoid, and myths about chronic diseases and herb supplements. A participant wanted to know if garlic and vinegar could replace their blood pressure medication. Participants discussed their fear of taking western medicine and the side effects of western medicine. Some of the participants requested a head to toe assessment, and a few of the participants were referred to the nearest emergency room because of their critical symptoms such as elevated blood pressure compounded by blurry vision and reduced urine output.

All 26 participants finished the program and completed the surveys. Three participants missed the monthly educational sessions. Their data were collected during the clinic visits, by the DNP student and VTC staff who also provided a one-on-one education similar to the session received by the group. The actual expenses were slightly higher than the projected expenses. Food expense and change in location increased the expenses from \$8606 to \$8945. Based on a suggestion from a VTC staff that the participants are more likely to be more engaged, light snacks were provided to the participants. The snacks included Guguru and Epa (roasted corn and peanuts), Wara (Cheese), and garden eggs (Registered Nurse, personal communication, July 2019). VTC provided an additional in-kind donation for feed expenses and a change in location costs.

Discussion

Summary

Twenty- six AI participated in the quality improvement project. The participants attended three educational sessions, and one personalized consultation. Surveys showed that the participants increased their awareness level after the educational sessions. There was a 19% increase in CHD knowledge and awareness, 36% increase in physical activities awareness and 48% increase in the self-management of CHD risk factors.

Mean systolic and diastolic blood reduced from a baseline of 144 mmHg and 85 mmHg to 133 mmHg and 77 mmHg post-intervention. Participants' blood pressure decreased from an average of 141/85-mmHg pre interventions to 133/77-mmHg-post intervention (Systolic 6%, diastolic 9.4%). There was a 7% decrease in the blood glucose level of participants who had a diabetes mellitus diagnosis and a 2.6% body weight decrease. These results are clinically significant for project participants.

Interpretation

At the pre-test, the participants had CHD awareness score of 38%. Further analysis showed that participants were unable to define CHD, 40% incorrectly identified the signs of a heart attack. Less than 50% knew the recommended daily servings of vegetables and that small changes could lower blood glucose.

The education provided increased adherence to treatment and home monitoring of chronic disease that leads to CHD mortality. The participants received personalized interdisciplinary consultation through reviewing diets and medication and general health by healthcare providers. In the post-test, the level of CHD awareness increased from 68% to 87%. On average, the post-intervention awareness rate improved by 19% on more on all surveys, indicating that the intervention increased the level of CHD awareness in the AI population. The participants increased physical activities, substituted high fat and caloric African ingredients

such as palm oil with low-calorie alternatives. The participants reported that they adopted a new and improved way of life, and this was reflected in the biophysical data (Appendix Z)

Comparison of Results with Findings from other Publications

Boateng et al. (2017) observed that AIs have higher adverse CHD risk factors compared to Africans in their home countries. This is due to the limited awareness level of CHD and the lack of access to primary care in the AI community. The project provided a culturally sensitive education in a trusted environment, thus, improving CHD knowledge in the AI community.

Evidence suggests that a faith-based CHD education is more effective in increasing awareness, prevention, and management of CHD (Tettey, 2017). FBOs are platforms that are readily available to AIs for raising awareness and promoting health behaviors. Historically, Blacks have distrust for the healthcare system and FBOs provide a safe environment and have success engaged the community positively influencing their health behavior choices (Woods-Jaeger et al., 2014).

The results contribute to achieving the objectives of Healthy People 2020. The cardiovascular health objective of Healthy People 2020 is to increase the overall cardiovascular health in the US population (Healthy People 2020, 2014). The project provided access to educational opportunities, affordable healthy foods, and safe walks for AI in the community. In addition, the project shared community resources for access to affordable and quality primary health care. Culturally congruent interventions projects involving minorities will guarantee a greater participation and greater success in the reduction of CHD risk factors (Gettleman & Winkleby, 2000).

Project Impact on People and Systems

The project impacted the participants and influenced the church organization to adopt the educational session. The church initiated a monthly educational health awareness session to discuss a health topic affecting AIs. The topics will range from mental health issue to reproductive health and preventative health. The level of engagement during the monthly, educational sessions and regular clinic follow up by participants, impressed the church leadership. They were impressed with the participant's interest in their health status, health education, and the importance of self-care as encouraged by the bible. In the book of John chapter 2 verses 3, John, a disciple prayed that his dear friends enjoy good health (John 2:3, The New King James Version).

The participants appreciated the DNP student's effort to identify the pressing problems in the AI community, provide health education, and share access to primary healthcare providers. The participants voiced their opinions during the question and answer segment at the last educational session.

The survey and teaching was mostly done in English because most of the participants (23) communicate and write in English. This could be due to various factors such as only English speaking patients volunteered or the initial assessment of the clinic provided by VTC medical director is incorrect. Two surveys were done in Yoruba and one in Igbo. Hence, there was no need for all the surveys and teachings to be interpreted.

The addition of the interdisciplinary team consultation increased medication compliance. The HH-SE-SM questionnaire showed a 16% increase in participants' level of confidence in self-efficacy and self-management of CHD risk factors (Appendix W). There was a 6% systolic blood pressure difference (6%); diastolic (9.4%), blood glucose (7%) levels, body weights (2.6%), and increase positive lifestyle. (Appendix X, Y, and Z)

Costs

VTC provided the materials needed through in-kind donation. The actual project revenue and cost were higher than the projected cost. The increase in cost was due to a change in the educational session location, food provision and technology use. The educational sessions were moved to a new location due to the church's need. These impacted the cost of the project. The cost of food was not accounted for in the projected expenses, and it was vital to show and teach the participants healthy options. Also, food was a motivation for the participants to attend the education sessions. For future planning, emergency funds for transportation and unforeseeable circumstances and a larger food expenses will be added to the budget (Appendix E).

Policy Implications

Immigrants are identified as a vulnerable population (Derose, Escarce, & Lurie, 2007). People have immigrated to the US before independence. Despite this, some members of the major society continue to view immigrants negatively. The government developed policies and programs to eliminate health disparities. Still, the immigrant population continues to experience a lack of access to healthcare, leading to poorer health outcomes, increased healthcare costs, and higher rates of hospital readmissions. Disparities in healthcare often lead to disabilities and chronic health conditions, such as asthma, diabetes, obesity, hypertension, and cardiovascular diseases (Price, Khubchandani, McKinney & Braun, 2013). Health disparity occurs across gender, race, education, income, age, geographical location, language, beliefs, and sexual orientation (Weinstein, Geller, Negussie, & Baciu, 2017). The lack of social support services for the immigrant population to access healthcare impedes health and increases disability.

Due to the recent political climate towards immigrants, a limited number of immigrants have access to healthcare. Policy implications for this project can include implementation of

healthcare programs that (1) increase access to quality healthcare, (2) eliminate language barriers (3) expand health insurance coverage, and (4) increase culture quality healthcare.

Non-citizen families have reduced access to ambulatory medical care and emergency care. The reduced access to emergent care is particularly relevant because federal policy stipulates that non-US citizen immigrants receive emergency services; this applies to undocumented immigrants. It is necessary to implement policies that eliminate discrimination in health care.

Factors that contribute to immigrants receiving quality health care can be modified in part through policies that are relevant to the immigrant population, such as policies related to wages, access to education, decent housing, and safe jobs. There are several laws, policies, and initiatives that can be adopted by primary care clinics towards culturally competent care delivery for AIs. Some of the laws enacted by the federal government that can be applied to the AI community to promote access to healthcare services are the Emergency Medical Treatment and Active Labor Act. The act mandates all hospitals participating in Medicare to treat all patients that come to the emergency department without taking into consideration their ability to pay. This law also requires hospitals to provide language assistance to those that are not able to express themselves well in English. Failure to comply with this law can lead to civil penalties and fines. These and other laws provide the basis or foundation for today's culturally competent care delivery programs and initiatives.

Limitations

Participants self-selected into the project and do not represent the AI population as a whole. The venue for the educational sessions was changed from Victory Temple Church Bowie, MD to Victory House DC because of an impromptu meetings and events by the church

leadership. Another result of this change was that posters and flyers had to be made, VTC staff rescheduled, and participants transported to the new site. Due to the schedule conflict, the first session was moved to a new location in Washington, DC. The new church location called Victory House is a sister church to the Victory Temple Church in Bowie, MD.

One of the project implementation barriers was time constraint. Ten minutes was allocated to the surveys pre and post education; this was not enough time for the participants to complete the surveys. In addition, there was difficulty in ending the question and answer segment due to the interest in the discussion, the participants were engaged and wanted to discuss CHD risk factors; thus, extending the project allotted time.

The project required multiple surveys for evaluation and the participants were often overwhelmed and reluctant to complete all the survey questions. For replication and future interventions, it is recommended that one survey be used to measure the outcomes instead of multiple surveys. The pattern of the question in the survey questions was negatively worded, creating confusion with participants and may affect the responses from the sample.

The most significant limitation was the use of the term "African Immigrants". Some participants voiced that they view themselves more as Americans than AI because they have lived in the US for a long time, or because they have adopted the societal norms of their environment. These participants verbalized that the teachings will not be beneficial to them because it was designed for AIs and they preferred the teachings designed for Americans.

Due to the change in location and time, some participants (n=5) were unable to attend the educational sessions. However, they participated in follow-up sessions at the clinic. Additional biophysical data such as blood glucose level would improve the significance of the results compared to the participant self-reporting their diagnosis. This will identify the pre-

diabetic participants and they would be provided education and/or referral for additional medical assistance. Although the project had limitations, the project was successful in raising awareness in the AI community.

Conclusion

Usefulness

The culturally sensitive project was useful for the AI community, healthcare providers and the church. The intervention tailored for AIs and implemented through the church, educational sessions, and interdisciplinary consultation, increased awareness, prevention, and management of CHD. The role of the church-based clinic and culturally trained staff was significant in the teaching and health improvement demonstrated in the reduced blood pressure (7.7%), blood glucose (7%) and body weight (2.6%). The increased level of CHD awareness can be attributed to implementing culturally driven intervention.

Sustainability

The project has the potential to be sustained through educational sessions and culturally competent trained staff. VTC has adopted educational sessions. Once a month, VTC staff will organize a health session and discuss health issues such as reproductive health, mental health, and preventative health with the AI community. The project has the potential to be replicated in the BWM area, with over 50 churches whose congregations are predominately AIs.

Implication for Practice and Further Study

This DNP project showed that culturally appropriate care tailored to the population of local AIs could raise the level of CHD knowledge and reduce CHD risk factors. The findings from the DNP project suggested that cultural consideration and adaptation of faith beliefs in AIs

medical care raised CHD awareness and decreased CHD risk factors such as blood pressure, blood glucose, and body weight.

Healthcare providers must understand, recognize and support cultural competency education and application because it has the potential to close the gap on ethnic and racial health disparities, improve patient outcomes, and increase access to high-quality care. The lack of cultural awareness among health care providers can undermine AIs' trust in the healthcare system, leading to a lack of patient awareness and poorer health outcomes. Patients' beliefs and the provision of spiritual care are correlated with positive patient outcomes (Harrad, Cosentino, Keasley, & Sulla, 2019).

This DNP quality improvement project utilized the CCT to guide participants to adopt healthier lifestyle modifications through a faith-based organization. While the project did not statistically measure the effect of faith beliefs and cultural sensitivity as it relates to lifestyle changes, these elements contributed to the increase in CHD awareness by providing a trusted, accessible setting along with clinical care. Culturally appropriate healthcare may prevent AIs health from deteriorating after migrating to the US.

The continuous monitoring and proper management of CHD risk factors-- management of blood pressure, blood glucose, and body weight--can lower the risk of CHD. The AHA recommends blood pressure reading at 120mmHg/80mmHg, blood glucose at 70-130 mg/dL before meals, and a slight reduction in body weight (AHA, 2018). Artham et al. (2009) showed that even a minimal weight loss of 18 lbs in mildly obese study subjects HBP was associated with significantly higher reductions in cardiovascular diseases.

Further investigation is needed to assess the real implication and maintenance of culturally appropriate health care in the AI communities and primary care facilities. Increased

culture care can improve quality of life, decrease the prevalence of chronic diseases, reduce mortality rate, and costs associated with CHD.

Next Steps and Dissemination

The DNP student plans to disseminate the result to the stakeholders at the church-based clinic by December 2020 and continue to volunteer and provide the African Immigrant population with culturally congruent teaching and healthcare. In addition, the DNP students plan to present the project to faith-based organizations in the BWM area and environs. The project will be disseminated to the internet through the Boise State University Scholar works. The DNP student plans on disseminating the project through abstracts, posters, and project summaries to faith-based organizations, refuge relief organizations, and African immigrant associations.

Concluding Summary

Culturally appropriate care provided by respecting beliefs and traditions in a trusted healthcare setting could minimize AIs CHD risks and improve quality of life. This DNP project facilitated a proper understanding of health disparity affecting AIs and their CHD awareness. AI participants better-understood the lifestyle changes required to prevent and manage CHD risk factors. By implementing health practice changes that are culturally motivated, CHD awareness increased, and resulted in a reduction in CHD prevalence.

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Appendix A

Literature Review Summary Table

	TITLE OF ARTICLE	AUTHORS WITH CREDENTIALS	RESEARCH QUESTION	STUDY DESIGN	LEVEL OF EVIDENCE	DESCRIPTION OF SAMPLE	OUTCOME MEASURES	RESULTS
Problem								
1.	Prevalence, awareness, treatment, and control of hypertension among Ghanaian population in Amsterdam, The Netherlands: the GHAIA study	Charles Agyemang, Mary Nicolaou ¹ , Linda Boateng ¹ , Henriette Dijkshoorn, Bert-Jan van de Born ¹ Karien Stronks	To assess prevalence, levels of awareness, treatment, and control of hypertension among the largest sub-Saharan African group (Ghanaians) living in the Netherlands	Cross-sectional study	I	221 men and women 18–60-year-old, non-institutionalized people in Amsterdam, the Netherlands from April to October 2010	Scatter plots of systolic blood pressure with body mass index (a) and waist circumference (b) and diastolic blood pressure with body mass index (c) and waist circumference (d). Length of stay	Hypertension is a major problem among recently migrated sub-Saharan African population. Increasing awareness and management of patients with hypertension has had a huge impact on CVD prevention in many communities
2.	Worse cardiometabolic health in African immigrant men than African American men: reconsideration of the healthy immigrant effect	Michelle Y. O'Connor, BS, Caroline K. Thoreson, BS, Madia Ricks, RN, Amber B. Courville, PhD, Francine Thomas, BS, Jianhua Yao, PhD, Peter T. Katzmarzyk, PhD, Anne E. Sumner, MD	Evaluate the current status of the healthy immigrant effect concept by comparing cardiometabolic risk factor prevalence in African immigrants and African Americans	Randomized Clinical Trial	I	214 self-identified healthy men comprised of 138 African immigrants	Ethnicity Waist circumference interaction and constant	African immigrants were less obese but had more hyperglycemia, hypertension, and visceral adiposity than African Americans

3.	Obesity, diabetes, and length of time in the United States Analysis of National Health and Nutrition Examination Survey 1999 to 2012	Tetsuro Tsujimoto, MD, PhD Hiroshi Kajio, MD, PhD, Takehiro Sugiyama, MD, MSHS, PhD	To assess whether the risks of obesity and diabetes increased with the length of time living in the US	Cross-sectional study	I	25, 628 foreign born and US-born adolescents and adults in the United States	Overweight obesity, severe obesity, abdominal obesity and length of stay.	The risks of obesity and diabetes have increased in foreign-born US residents with time living in the US
4.	Beliefs about hypertension among Nigerian immigrants to the United Kingdom: a qualitative study	James Tosin Akinlua; Richard Meakin; Nick Freemantle; Andre M N Renzaho	To illicit beliefs about hypertension among Nigerian immigrants in the United Kingdom	A qualitative study	I	27 African immigrants over the age of 18 living in the United Kingdom.	Intermittent headaches, fast heartbeat, dizziness and loss of appetite are signs of raised blood pressure	While most people believed that hypertension was announced by the presence of symptoms such as palpitation and headaches some people thought that the absence of symptoms meant absence of hypertension. Beliefs from individuals about hypertension are important because it help to create culturally appropriate care plans and blood pressure management programs
5.	The Association Between Acculturation And Cardiovascular Disease Risk In	Yvonne Commodore-Mensah Maame Sampah Charles Berko Joycelyn Cudjoe Nancy Abu-Bonsrah	Is the prevalence of cardiovascular risk factors, and elevated global cardiovascular risk more significantly associated with	Cross-sectional study	I	264 Ghanaian and Nigerian-born African immigrants aged 35–74 years and residing in the Baltimore–	CVD risk factors Length of us residence Pooled Cohort Equations Score	The prevalence of CVD risk factors and elevated CVD risk was high in this group of African immigrants. Overweight/obesity was the most prevalent and

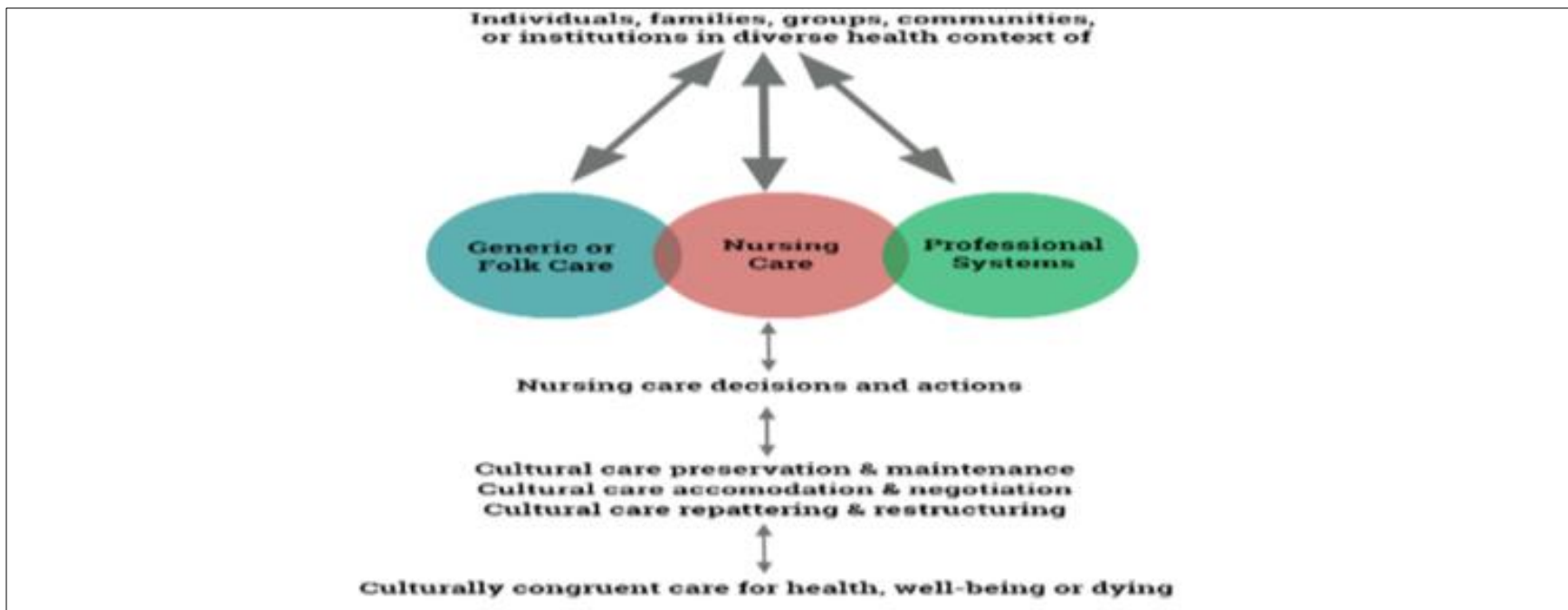
	Ghanaian And Nigerian-Born African Immigrants In The United States: The Afro-Cardiac Study	Olawunmi Obisesan Charles Agyemang Adebowale Adeyemo Cheryl Himmelfarb	acculturation			Washington, metropolitan area		smoking was the least prevalent CVD risk factor Results suggest that coordinated public health responses to the epidemic of CVD risk factors and poor health behaviors in the US should target understudied immigrant populations and acculturation should be considered as a meaningful determinant of CVD risk
6.	Cardiovascular Disease Disparities: Racial/Ethnic Factors and Potential Solutions	Keith C. Ferdinand, MD. Daphne P. Ferdinand, PhD, APRN	To identify several areas of cardiovascular disease disparities and potentially effective means of improving cardiovascular care, health outcomes, and clinical practice to eliminate disparities	Descriptive	VII	N/A	N/A	Uninsured have difficulty accessing care, which may lead to delayed diagnosis and longer hospitalizations. Minority providers may positively affect the health of an increasingly diverse population
Interventions								
7.	Using Focus Groups to Develop a Heart Disease	Gettleman, Lynn MD. Winkleby, Marilyn A. PhD	To use feedback from focus groups to generate ideas	Cross sectional study	V	51 low-income African-American, Hispanic, and White women	Measure common experiences and barriers to healthy lifestyles and education	Women preferred heart disease prevention programs that addresses multiple

	Prevention Program for Ethnically Diverse, Low-Income Women		about ways to best structure and implement future heart disease intervention programs tailored to low-income populations			from two urban and two agricultural communities in California		heart disease risk factors, emphasizes on staying healthy and teaching specific skills on heart-healthy behaviors
8.	Health Programs in faith-based organizations: are they effective?	MJ DeHaven; IB Hunter; L Wilder; JW Walton; J Berry	To determine the effectiveness of health programs in faith-based organizations	Systematic review study	II	386 faith based organization articles	Reductions in cholesterol and blood pressure levels, weight, and disease symptoms and increases in the use of mammography and breast self-examination	Faith-based programs can improve health outcomes
9.	Translating a heart disease lifestyle intervention into the community: the South Asian Heart Lifestyle Intervention (SAHELI) study; a randomized control trial	Namratha R. Kandula Swapna Dave, Peter John De Chavez, Himali Bharuch, Yasin Patel, Paola Seguil, Santosh Kumar, David W. Baker, Bonnie Spring and Juned Siddique	To evaluate a culturally salient, community-based healthy lifestyle intervention to reduce atherosclerotic cardiovascular disease risk among South Asian	Randomized Clinical Trial	I	63 self-identified as Asian Indian or Pakistani, were between 30 and 59 years	Demographic, social and economic factors, health care access and utilization, lifestyles and risk behaviors, and English language proficiency	A culturally-salient, community-based lifestyle intervention was feasible for engaging medically underserved South Asian immigrants and more effective at addressing ASCVD risk factors than print health education materials
10.	Community Based Cardiovascular Health Interventions in Vulnerable Populations: A Systematic	Walton-Moss, Benita FNP-BC, DNS. Samuel, Laura RN, FNP. Nguyen, Tam H. RN, MSN/MPH, PhD. Commodore-Mensah, Yvonne	To provide a critical review of community-based cardiovascular disease interventions to improve cardiovascular	Systemic Review	1	Assessed 4 databases (PubMed, PsychInfo, CINAHL, and Scopus) and a total of 7120 abstracts		Education was the most common intervention

	Review	RN, BSN. Hayat, Matthew J. PhD. Szanton, Sarah L. RN, CRNP, PhD	health behaviors and factors among vulnerable populations			reviewed.		
11.	Impact Of Health Literacy On Outcomes And Effectiveness Of An Educational Intervention In Patients With Chronic Diseases	Mark Eckman, MD, MS Ruth Wise, MSN, MD Anthony Leonard, PhD Estrelita Dixon, MD Chrisitne Burrows, MD Faisal Khan MD Eric Warm, MD	To explore the impact of health literacy on knowledge acquired, life style changes, and health outcomes resulting from educational interventions	Randomiz ed controlled study	III	170 low-income, Medicare and Medicaid adult in outpatient settings such as medical offices	Assess knowledge at baseline, post intervention, and six months post intervention	Patients exposed to written and video education exhibited significantly improved health knowledge and health behaviors
12.	Cardiovascular Disease Risk And Secondary Prevention Of Cardiovascular Disease Among Patients With Low Health Literacy	T. M. van Schaik, H. T. Jørstad, T. B. Twickler, R. J. G. Peters, J. P. G. Tijssen, M. L. Essink-Bot, M. P. Fransen	To investigate the impact of health literacy on the effects of secondary prevention by nurse coordinated care	Randomiz ed Study	III	269 patients aged 18–80 years hospitalized for an acute coronary syndrome	Assess the differential effects of health literacy level by a nurse- coordinated secondary prevention program in patients with coronary artery disease	Nurse-coordinated care seemed to reduce cardiovascular disease risk irrespective of health literacy levels
13.	Community nursing intervention in population with high-risk coronary heart disease in Hengyang	Huang Y, RN, PhD Chen J, PhD Zeng Y, RN, PhD Liu D, PhD He G, BS, MD	To evaluate the awareness on primary prevention knowledge, self- management and risk factors for CHD.	Randomiz ed controlled study	III	120 at high risk of CHD		The self-management score was improved. The cognitive level was significantly increased

Appendix B

Theoretical Model; Culture Care Model



Adapted from: McFarland, M., & Wehbe-Alamah, H. (Eds.). (2015). *Leininger's culture care diversity and universality: A worldwide nursing theory* (Third ed.). Burlington, Massachusetts: Jones & Bartlett Learning.

Appendix C

Logic Model Table

Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
<ul style="list-style-type: none"> • Doctor of Nursing Practice (DNP) student: Project lead • Victory Temple Clinic (VTC) Medical Director • Victory Temple Church (VT) Head Pastor • VTC Volunteers • VT Stakeholders; VT Pastors, primary care providers and board of directors • VTC Staff • Time; for team formation, pastor's time, and medical director's time • Technology; Computer, internet access and statistical software programs • Criteria for team formation 	<ul style="list-style-type: none"> • Weekly announcement at VT seeking volunteers • DNP student and VTC staff selected members for Victory Temple Clinic Interdisciplinary Team (VIDT) • DNP student and VTC staff developed faith-based training curriculum for VIDT 	<ul style="list-style-type: none"> • Approved VIDT by the VTC Medical Director • Approved faith-based training curriculum by stakeholders 	<ul style="list-style-type: none"> • VIDT • VT Head Pastor • VTC Medical Director • VTC volunteers • VTC staff • VT members • Stakeholders 	<p>1. By April 1, 2019, all stakeholders approved faith-based training curriculum for volunteers and project participants developed by DNP student as measured by shareholder's written and verbal approval. (PO).</p>	<p>9. By May 2020, faith-based training curriculum updated by VTC staff based on DNP project dissemination as measured by the number of updates between May 2019 and May 2020. (PO).</p>	<p>17. Faith-based training curriculum continuously updated and readily available to volunteers.</p>

Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
<ul style="list-style-type: none"> • AIs; • VIDT • DNP student • VTC Medical Director • VT Head Pastor • VTC Volunteers • VTC Staff • VT church • Technology • Conference room • Time • Biblical verses that emphasize healthy lifestyle • Interpreter • Medical Record (MR) 	<ul style="list-style-type: none"> • DNP student and volunteers conducted three monthly faith-based CHD education for AIs 	<ul style="list-style-type: none"> • DNP student and VTC staff facilitated three faith-based monthly CHD education 	<ul style="list-style-type: none"> • AIs; project participants • VIDT • VTC staff 	2. By August 1, 2019, DNP student and VTC staff facilitated one educational session per month for the same group of participants on three CHD risk factors as measured by demographic profile survey and attendance. (PO)	10. By September 2020, VTC staff facilitated a 12-month faith-based CHD education series consisting of 1 session per month for participants as measured by the number of monthly education. (PO)	18. Continuous monthly faith-based CHD education for AIs at risk for CHD in the BWM area
Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
<ul style="list-style-type: none"> • AIs; Project participants • VIDT • DNP student • VTC Medical Director • VT Head Pastor • VTC Volunteers • VTC Staff • VT church 	<ul style="list-style-type: none"> • DNP student and volunteers conducted three monthly faith-based CHD education for participants • DNP student developed CHD survey 	<ul style="list-style-type: none"> • DNP student assessed baseline awareness level of CHD risk factors in participants. • Pre and post AQ data collected by 	<ul style="list-style-type: none"> • AIs; project participants 	3. By August 1, 2019, 5% increased level of CHD awareness by participants per monthly faith-based educational topic as measured by modified pre and post questionnaires. (PO)	11. By October 2020, 10% increase in awareness of CHD among participants as measured by pre and post survey questionnaires. (CO)	19. Increased level of awareness for CHD risk factors in AIs in BWM area with faith-based education and primary prevention

<ul style="list-style-type: none"> • Technology: • Monthly faith-based CHD education • Conference room • Time to conduct monthly education • Time • Biblical verses • MR 	<p>questionnaire (AQ).</p> <ul style="list-style-type: none"> • CHD AQ administered by DNP student and VTC staff to AIs 	VTC staff				
Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
<ul style="list-style-type: none"> • AIs; project • VIDT • DNP student • Blood pressure monitor for measurement • Telephone • MR Weight Scale • Funding • Interpreter • AIs; project participants • VTC Staff • VTC Volunteers 	<ul style="list-style-type: none"> • Volunteers collected baseline measurement of blood pressure, (Kg). • Volunteers and DNP student recorded measurements in a secure MR • Interpreter translated a warning sign of stroke, heart attack and action plan refrigerator magnetic in 3 major African languages (Yoruba, Igbo Swahili and TWI) 	<ul style="list-style-type: none"> • DNP student and volunteers personalized blood pressure lowering education using recommended Center for Disease Prevention and Control (CDC) guidelines. (CDC, 2016) • Participants placed refrigerator magnet on the refrigerator 	<ul style="list-style-type: none"> • AIs; project participants • VTC Staff • VTC Volunteers 	4. . By August 1, 2019, 5% reduction in the mean blood pressure of all project participants as measured by means blood pressure pre and post intervention. (CO)	12.By October 2020, 10% reduction in the occurrence of major cardiovascular events among AIs in VTC as measured by questionnaire. (CO)	20.Decreased rate of disability from CHD and improved quality of life in AIs in the BWM area

Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
<ul style="list-style-type: none"> • AIs; project • VIDT • Glucometer • Telephone • MR • Weight Scale • AIs; project participants • VTC Staff • VTC Volunteers 	<ul style="list-style-type: none"> • Volunteers collected baseline measurement of blood glucose. • Volunteers and DNP student recorded measurements in a secure cabinet 	<ul style="list-style-type: none"> • DNP student and volunteers developed personalized blood glucose lowering education using recommended Center for Disease Prevention and Control (CDC) guidelines. (CDC, 2016) 	<ul style="list-style-type: none"> • AIs; project participants • VTC Staff • VTC Volunteers 	5. By August 1, 2019, 5% reduction in the mean blood glucose of all project participants as measured by blood glucose level pre and posts intervention.	13. By October 2020, 10% reduction in the occurrence of major cardiovascular events among AIs in VTC. (CO)	20. Decreased rate of disability from CHD and improved quality of life in AIs in the BWM area.
Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
<ul style="list-style-type: none"> • AIs; project • VIDT • Body Mass Index (BMI) chart • Telephone • Electronic Medical Record (MR) • Weight Scale • Funding • AIs; project participants • VTC Staff • VTC Volunteers 	<ul style="list-style-type: none"> • Volunteers collected baseline measurement of participants' body weight. • Volunteers and DNP student recorded measurements in a secure MR 	<ul style="list-style-type: none"> • Personal trainers/physical therapist facilitated a 30 minutes physical activity session for participants 	<ul style="list-style-type: none"> • AIs; project participants • VTC Staff • VTC Volunteers 	6. By August 1, 2019, 5% reduction in the mean body mass index (BMI) of project participants as measured by the mean of BMI pre and posts intervention. (CO)	14. By October 2020, 10% reduction in the occurrence of major cardiovascular events among AIs in VTC. (CO)	20. Decreased rate of disability from CHD and improved quality of life in AIs in the BWM area.

Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
<ul style="list-style-type: none"> • VIDT • VTC Staff • Weight Scale • Body Mass Index (BMI) chart • Electronic Medical Record (MR) • Funding • AIs medication lists • VTC Volunteers • Refrigerator magnet • AIs; project participants • VTC Staff • VTC Volunteers • American Heart Association guidelines (AHA). (Riegel et al., 2017) 	<ul style="list-style-type: none"> • DNP student created a list of lifestyle changes from AHA guidelines. (Riegel et al., 2017). • VIDT developed a program to teach self-management of CHD risk factors 	<ul style="list-style-type: none"> • VIDT reconciled medication for participants • Participants educated on the recommended healthy lifestyles changes and techniques by DNP student and VTC staff 	<ul style="list-style-type: none"> • AIs; project participants • VTC Volunteers • VTC Staff 	7. By September 2019, 50% of the VTC staff, Victory Temple Interdisciplinary Team (VIDT) and VTC volunteers evaluated the efficacy of the faith-based training curriculum as measured by an open-ended evaluation questionnaire. (CO)	15. By January 2020, 10% of the participants' increased self-management of CHD through adherence to recommended treatment by VIDT. (CO)	21. Reduced CHD morbidity and mortality rate through participants' self-management of CHD risk factors
Resources/Inputs	Activities	Outputs		Outcomes: Short term	Outcomes: Intermediate	Outcomes: Long term
<ul style="list-style-type: none"> • AIs; project participants • DNP student: Project lead • VTC Volunteers • VTC Staff • Time; DNP student • Technology 	<ul style="list-style-type: none"> • DNP student adapted a questionnaire to evaluate program • DNP students, VTC staff, VIDT and VTC volunteers 	<ul style="list-style-type: none"> • DNP student collected data to evaluate the faith based CHD program 	<ul style="list-style-type: none"> • AIs 	8. By September 1, 2019, 50% of participants' rated the efficacy of the faith-based CHD program as measured by the Heart Disease Fact Questionnaire (HDFQ). (CO)	16. By September 2020, 50% of participants evaluated the faith based CHD program (CO)	22. Continuous evaluation of the faith based CHD program by participants

Appendix E

Heart Disease Fact Questionnaire (HDFQ)

Please Circle Only One Answer

1. A person always knows when they have heart disease:
 - a. True
 - b. False
 - c. I don't know

2. If you have a family history of heart disease you are at risk for developing heart disease:
 - a. True
 - b. False
 - c. I don't know

3. The older a person is, the greater their risk of having heart disease:
 - a. True
 - b. False
 - c. I don't know

4. Smoking is a risk factor for heart disease:
 - a. True
 - b. False
 - c. I don't know

5. High blood pressure is a risk factor for heart disease:
 - a. True
 - b. False
 - c. I don't know

6. A person who stops smoking will lower their risk of developing heart disease:
 - a. True
 - b. False
 - c. I don't know

7. Keeping blood pressure under control will reduce a person's risk for developing heart disease:
 - a. True
 - b. False
 - c. I don't know

8. High cholesterol is a risk factor for developing heart disease:
 - a. True
 - b. False
 - c. I don't know

9. If your "good" cholesterol (HDL) is high you are at risk for heart disease:
 - a. True
 - b. False
 - c. I don't know

10. Eating fatty foods does not affect blood cholesterol levels
 - a. True
 - b. False
 - c. I don't know
11. If your "bad" cholesterol (LDL) is high you are at risk factor for heart disease:
 - a. True
 - b. False
 - c. I don't know
12. Being overweight increases a person's risk for heart disease:
 - a. True
 - b. False
 - c. I don't know
13. Regular physical activity will lower a person's chance of getting heart disease:
 - a. True
 - b. False
 - c. I don't know
14. Only exercising at a gym or in an exercise class will help lower a person's chance of developing heart disease:
 - a. True
 - b. False
 - c. I don't know
15. Walking and gardening are considered exercise that will help lower a person's chance of developing heart disease:
 - a. True
 - b. False
 - c. I don't know
16. Diabetes is a risk factor for developing heart disease:
 - a. True
 - b. False
 - c. I don't know
17. High blood sugar puts a strain on the heart:
 - a. True
 - b. False
 - c. I don't know
18. If your blood sugar is high over several months it can cause your cholesterol level to go up and increase your risk of heart disease:
 - a. True
 - b. False
 - c. I don't know

19. A person who has diabetes can reduce their risk of developing heart disease if they keep their blood sugar levels under control:
 - a. True
 - b. False
 - c. I don't know

20. People with diabetes rarely have high cholesterol:
 - a. True
 - b. False
 - c. I don't know

21. If a person has diabetes, keeping their cholesterol under control will help to lower their chance of developing heart disease:
 - a. True
 - b. False
 - c. I don't know

22. People with diabetes tend to have low HDL (good) cholesterol:
 - a. True
 - b. False
 - c. I don't know

23. A person who has diabetes can reduce their risk of developing heart disease if they keep their blood pressure under control:
 - a. True
 - b. False
 - c. I don't know

24. A person who has diabetes can reduce their risk of developing heart disease if they keep their weight under control:
 - a. True
 - b. False
 - c. I don't know

25. Men with diabetes have a higher risk of heart disease than women with diabetes:
 - a. True
 - b. False
 - c. I don't know

Permission given by authors on sources found. Retrieved from: Wagner, J., Lacey, K., Chyun, D., & Abbott, G. (2005). Development of a questionnaire to measure heart disease risk knowledge in people with diabetes: The heart disease fact questionnaire. *Patient Education and Counseling*, 58(1), 82-87. doi:10.1016/j.pec.2004.07.004

Appendix F

Recruitment Flyer

PARTICIPANTS WANTED!!!

Using Faith-Based Intervention to Increase Awareness, Prevention, and Management of Coronary Heart Disease in African Immigrants

Are you an African Immigrant, over the age of 18, interested in learning about coronary heart disease risk factors and/or have a diagnosis of high blood pressure, diabetes or obesity?

I am conducting a project to evaluate the impact of using a faith-based intervention to increase awareness, prevention and management of coronary heart disease in African Immigrants and I am looking for your input!

Participation involves completing surveys, attending three 50-minute live classes, and participating in one personalized wellness sessions per month for 3 months at the Victory Temple Clinic in Bowie, MD.

There are no foreseeable risks in participation.

For enrollment consideration or more information, please contact Temitope Okpebho at [REDACTED]

Appendix G

Coronary Heart Disease Knowledge Questionnaire

Please circle **only one** answer

1. What is Coronary Heart Disease?
 - a. Chest pain
 - b. A valve problem
 - c. Reduced blood flow to the heart
 - d. Malfunction of the heart

2. Which of the following is the leading cause of death in the United States?
 - a. Heart Disease
 - b. Stroke
 - c. Accident
 - d. Cancer

3. Which of the following risk factor of heart disease is controllable?
 - a. Age
 - b. Gender
 - c. High Blood Pressure
 - d. Family History

4. Which of the following is a signal of a heart attack?
 - a. Shortness of breath
 - b. Slurred speech
 - c. Blurred vision
 - d. Headache

5. Which of the following Coronary Heart Disease risk factor is uncontrollable?
 - a. Diabetes
 - b. High Blood Pressure
 - c. Ethnicity
 - d. Obesity

6. A person can reduce their chances of dying from heart disease through lifestyle changes?
 - a. True
 - b. False

7. If you think someone is having a heart attack, you should immediately?
 - a. Lay the person on their side
 - b. Have the person take deep breathe
 - c. Call 9-1-1
 - d. Have the person drink water

Adapted from ABCD Risk Questionnaire, and Cardiovascular Disease Knowledge Questionnaire. Open Access. No permission required. Adapted from "Development of a questionnaire to evaluate patients' awareness of cardiovascular disease risk in England's national health service health check preventive cardiovascular programme," by Woringer, M., Nielsen, J., Zibarras, L., Evason, J., Kassianos, A., Harris, M., . . . Soljak, M, 2017) *Bmj Open*, 7, p. 9.

Appendix H

Physical Activity and Nutrition Questionnaire

This 7-item survey takes about 10 minutes or less to complete.

Please circle only one answer

1. Coronary heart disease is preventable?
 - a. True
 - b. False
2. To get healthy heart benefit from exercise, you need to get sweaty and out of breath?
 - c. True
 - d. False
3. Small changes in what you eat will not help lower blood sugar or prevent heart disease?
 - a. True
 - b. False
4. The recommended daily serving of fruit and vegetables is 3?
 - a. True
 - b. False
5. People who are physically active on a regular basis can cut their risk of heart disease in half?
 - a. True
 - b. False
6. Eating fish rich in 'Omega 3' can improve your chances of not developing coronary heart disease?
 - a. True
 - b. False
7. Most people could benefit from diets high in carbohydrates and lower in protein?
 - a. True
 - b. False

Adapted from ABCD Risk Questionnaire, and Cardiovascular Disease Knowledge Questionnaire. Open Access. No permission required. Adapted from "Development of a questionnaire to evaluate patients' awareness of cardiovascular disease risk in England's national health service health check preventive cardiovascular programme," by Woringer, M., Nielsen, J., Zibarras, L., Evason, J., Kassianos, A., Harris, M., . . . Soljak, M, 2017) *Bmj Open*, 7, p. 9.

Appendix I

Heart Health Self Efficacy and Self Management

This 7-item survey takes about 10 minutes or less to complete.

Please circle only one answer

How confident are you that you can;

1. See your doctor for regular checkups and to talk about your concerns?
 - a. Not confident
 - b. Somewhat confident
 - c. Confident
 - d. Very confident

2. Take your medicine as prescribed by your doctor?
 - a. Not confident
 - b. Somewhat confident
 - c. Confident
 - d. Very confident

3. Get your prescription filled on time so you don't run out of medicine?
 - c. Not confident
 - d. Somewhat confident
 - e. Confident
 - f. Very confident

4. Ask for help when you feel down or sad?
 - a. Not confident
 - b. Somewhat confident
 - c. Confident
 - d. Very confident

5. Be more active every day?
 - a. Not confident
 - b. Somewhat confident
 - c. Confident
 - d. Very confident

6. Minimize salt intake?
 - a. Not confident
 - b. Somewhat confident
 - c. Confident
 - d. Very confident

7. Reduce the amount of saturated fat (Palm oil, fatty meat)?
 - a. Not confident
 - b. Somewhat confident
 - c. Confident
 - d. Very confident

Adapted from ABCD Risk Questionnaire, and Cardiovascular Disease Knowledge Questionnaire.

Open Access. No permission required. Adapted from "Development of a questionnaire to evaluate patients' awareness of cardiovascular disease risk in England's national health service health check preventive cardiovascular programme," by Woringer, M., Nielsen, J., Zibarras, L., Evason, J., Kassianos, A., Harris, M., . . . Soljak, M, 2017) *Bmj Open*, 7, p. 9.

Appendix J

Victory Staff Evaluation Questionnaire

1. What was your overall impression of the program?
2. What was most successful in the program? Why?
3. What was least successful in the program? Why?
4. What part of the faith-based training was useful? Why?
5. Would you recommend this program to your family and friends? Why or Why not?
6. What suggestions do you have for future programs?
7. What else would you like to share about your experience?

Appendix K

Outcomes Table

Outcome	Data Collection Instrument /Data	Analysis Goal	Analytic Technique
1. By April 1, 2019, all stakeholders approved faith-based training curriculum for volunteers and project participants developed by DNP student as measured by shareholder's written and/or verbal approval.	<p><u>Instrument:</u> Written approval from stakeholders or minutes from the stakeholder's project approval meeting.</p> <p><u>Data:</u> The written approval or minutes from the project approval meeting will include the time, date, meeting attendance and highlights of meeting topics.</p>	To verify that the curriculum developed supports the goals and expectations of stakeholders for VTC staff and volunteers.	N/A
2. By August 1, 2019, DNP student and VTC staff facilitated one educational session per month for the same group of participants on three CHD risk factors as measured by the total number of educational sessions.	<p><u>Instrument:</u> Modified demographic survey questionnaire and census rate.</p> <ul style="list-style-type: none"> • The modified demographic survey questionnaire measures characteristics of project participants. • Census rate measures the number of participants per session <p><u>Data:</u> The demographic survey consist of 5 questions on</p> <ul style="list-style-type: none"> • Age • Gender • Employment • Education 	<p>To define participants attributes.</p> <p>To understand participants behavior and improve the educational sessions</p> <p>To determine the total number of educational sessions conducted</p>	<p>Descriptive statistics to calculate the total sum of trained VTC staff.</p> <p>Descriptive statistics to calculate the total number of educational sessions.</p> <p>Descriptive statistics to</p>

	<ul style="list-style-type: none"> • The year of immigration <p>Participants Census rate</p>	To aggregate participants census rate per educational session	calculate the total number of participants per educational session
3. By August 1, 2019, 10% increased level of CHD awareness by participants per monthly faith-based educational topic as measured by pre and post questionnaire.	<p><u>Instrument:</u> Survey adapted from the Heart Disease Fact Questionnaire (HDFQ), The Attitude and Belief about Cardiovascular Disease (ABCD) risk questionnaire and Cardiovascular Knowledge Questionnaire (CKQ).</p> <p>HDFQ, ABCD and CKQ are multiple-choice questionnaires that measure participant's knowledge of the major risk factors of developing CHD. These questionnaires evaluate the knowledge of CHD risk factors.</p> <p>For this project, the questionnaires will be edited to 7 questions that measure knowledge of CHD and knowledge of CHD risk factors based on the educational topics</p>	<p>To compare the pretest and posttest CHD knowledge</p> <p>To determine participants knowledge improvement</p> <p>To verify that the developed CHD education supports the goals and expectations of stakeholders for project participants.</p> <p>To authenticate that participants are aware of the faith-based CHD</p>	<p>Descriptive statistics to calculate the aggregate number of correct answers to each question in the pretest and compare with the aggregate number of correct answers to each questions posttest.</p> <p>For graphical representation, data will be represented with a histogram to compare pretest and posttest to determine increased rate of participants' knowledge.</p>

<p>4. By August 1, 2019, 5% reduction in the mean blood pressure of all project participants as measured by mean blood pressure pre and post intervention.</p>	<p><u>Instrument:</u> An automated sphygmomanometer. A device that measures blood pressure using blood flow sounds also known as korotkoff sounds to calculate the systolic and diastolic blood pressure.</p> <p><u>Data:</u> Baseline blood pressure of participants. Blood pressure readings of participants at every clinic visit during the project.</p>	<p>To generate quantitative data to evaluate the impact of the project on participants blood pressure.</p> <p>To compare participants blood pressure measurements pre and post intervention</p>	<p>Blood pressure data will be collected from the first day of project implementation and compared to the average blood pressure during the intervention.</p> <p>Data will be represented with a bar chart for visual graphics. The bar chart will compare the pre intervention measurement to the post intervention measurement.</p>
<p>5. By August 1, 2019, 5% reduction in the mean blood glucose of all project participants as measured by blood glucose level pre and posts intervention.</p>	<p><u>Instrument:</u> An automated glucometer. A glucometer to measure blood glucose.</p> <p>Blood glucose measurement is collected at every intervention. The mean of all the blood glucose measurement is compared to the baseline mean.</p> <p><u>Data:</u> Baseline blood glucose of participants and blood glucose readings of participants at every clinic visit during the project.</p>	<p>To generate quantitative data to evaluate the impact of the project on participants blood glucose level.</p> <p>To compare participants blood glucose measurements pre and</p>	<p>Blood glucose data will be collected from the first day of project implementation and compared to the average blood glucose reading during the</p>

		post intervention	intervention. Data will be represented with a bar chart for visual graphics. The bar chart will compare the pre intervention measurement to the post intervention measurement.
6. By August 1, 2019, 5% reduction in the mean BMI of project participants as measured by mean of BMI pre and posts intervention.	<p><u>Instrument:</u> A weighing scale to measure body weight. Weight measurement is collected at every intervention with AIs. The mean of all the weight is compared to the baseline mean weight.</p> <p><u>Data:</u> Baseline body weight of participants and participants' body weight at every clinic visit during the project.</p>	<p>To generate quantitative data to evaluate the impact of the project on participants body weight</p> <p>To compare participants body weight measurements pre and post intervention</p>	<p>Data will be collected from the first day of project implementation and compared to the average body weight during the intervention.</p> <p>Average body weight will be converted to BMI</p> <p>The average baseline BMI of all the participants will be compared to the</p>

			<p>average BMI of all participants during the project.</p> <p>Data will be represented with a bar chart for visual graphics. The bar chart will compare the pre intervention measurement to the post intervention measurement.</p>
<p>7. By September 2019, 80% of the VTC staff, VIDT and VTC volunteers evaluated the efficacy of the faith-based training curriculum as excellent as measured by evaluation questionnaire.</p>	<p><u>Instrument:</u> Open-ended questionnaire developed by DNP students with input from the stakeholders. Open-ended questionnaire provides a deeper depth and insights.</p> <p><u>Data:</u> Qualitative data on the effectiveness of the program. For example, what worked and what did not work? What would you like to change?</p>	<p>To identify strengths and limitations of the project</p> <p>To identify factors to improve the quality of project</p> <p>To identify strategies for similar future interventions and project continuation</p>	<p>A summary of responses by category will be created using data collected from the open-ended questions.</p> <p>Responses will be presented in a table format with visual illustration.</p>
<p>8. By September 1, 2019, 50% of</p>	<p><u>Instrument:</u> Modified HDFQ questionnaire. The modified HDFQ questionnaire as ten questions</p>	<p>To evaluate the efficacy of</p>	<p>Descriptive statistics to</p>

<p>participants' rated the efficacy of the faith based CHD program as measured evaluation questionnaire.</p>	<p>adapted from the 25 original questions. There are four multiple-choice answers to each question with one possible correct answer. Research as shows that the modified HDFQ is as effective in data collection as the original scale with significant reliability and validity (Ttan, Zimmerman, & Kupzyk, 2016).</p> <p><u>Data:</u> Quantitative data on the effectiveness of the program. Pre and post questions are the same. The pretest will be administered before any intervention and the posttest will be administered at the end of the intervention</p>	<p>the project</p> <p>To determine the difference or change in the level post intervention</p>	<p>calculate the aggregate number of correct answers to each question in the pretest and compare with the aggregate number of correct answers to each questions posttest.</p> <p>For graphical representation, data will be represented with a histogram to compare pretest and posttest to determine increased rate of participants' knowledge.</p>
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Appendix L

Memorandum of Understanding

Memorandum of Understanding

Between

Temitope Okpebho, Doctor of Nursing Practice (DNP) student

Boise State University

And

Victory Temple Clinic

This Memorandum of Understanding (MOU) outlines the terms and understanding between Temitope Okpebho, a DNP student at Boise State University, and Victory Temple Clinic to apply a faith based intervention to raise awareness, increase prevention, and the management of coronary heart disease in African Immigrants.

Background

Coronary heart disease (CHD) is the leading cause of death for women and men in the United States. The three most common chronic conditions or risk factors that contribute to the high mortality rate are hypertension, diabetes mellitus and obesity. Compared to other race and ethnic groups in the United States, African Immigrants (AIs) are more likely to have two or more of the coronary heart disease risk factors and be unaware of their condition leading to stroke, heart attack and/or death. A significant number of AIs are unaware of their cardiovascular risk factors and do not have access to information that increases awareness or promotes healthy lifestyles. Evidence-based research showed that the implementation of faith-based intervention could reduce the risk factors of CHD in the AIs community.

Purpose

The purpose of the project is to implement the American Heart Association (AHA) cardiovascular prevention guidelines using a culturally sensitive faith-based intervention to assess risks and manage CHD risk factors among AIs in the United States. The AHA guidelines promote assessment, discussion and education of CHD risk factors, and a personalized CHD treatment. The DNP student will develop an educational curriculum, implement the curriculum and perform a pre and post evaluation to assess the efficacy of the intervention.

Intended Project Outcomes

The goal of the intervention is to

- Provide faith-based CHD training to Victory Temple Clinic staff and volunteers
- Provide faith-based CHD education to African Immigrants
- Increase awareness of CHD risk factors among African Immigrants
- Decrease blood pressure in African Immigrants
- Decrease blood glucose levels in African Immigrants
- Decrease body weight in African Immigrants
- Assess the efficiency of the faith-based intervention

Duration

The project will start at Victory Temple clinic in May 2019 and end in May 2020.

Reporting

The DNP Scholarly Project will include a final report, an abstract, an oral presentation of the report and potential publication. The DNP student will submit a Final Project Report for publication in ScholarWorks. ScholarWorks is a collection of services designed to capture and showcase all scholarly output by the Boise State University community, including doctoral dissertations and doctoral project reports.

No personal identifiers will be included and all data will be reported in aggregate form. The author welcomes any comments or suggestions from Victory Temple Clinic, but reserves the right to publish findings and analysis according to professional standards and principles of academic freedom. For any work of a scholarly nature, the author agrees to follow the Victory Temple Clinic preferences in how it is to be named (or not) in the work.

Victory Temple Clinic agrees to be referred to by name in the abstract DNP student's final report, abstract, professional presentations, and professional publications. No restrictions in discussion of project details were identified

Student Contact Information

[REDACTED]
[REDACTED]
[REDACTED]



Date: 03/26/2019

Temitope Okpebho, Boise State University DNP student



Date: 03/26/2019

Dr. [REDACTED], MD, Medical Co coordinator, Victory Temple Clinic

Appendix M
Expense Report

Source of Expense	Expense Description	Dollar Value	Type of Cost	Description of Cost	Estimated Volume	Expense per Unit
	Faith-Based CHD Intervention for African Immigrants	Cost \$	Fixed or Variable			
Education materials	Colored pamphlets: \$0.42/colored page	\$63	Fixed	Cost of printing pamphlets for 50 participants for 3 months	50 copies/month	\$0.42/participant/month
	Refrigerator magnet	\$40	Fixed	Cost of making educational refrigerator magnets for 50 participants	50 Units	\$0.80/participant
	Total requested	\$103				
Room rental	Hall rental: \$200/day/month	\$600	Fixed	Cost to rent a large room for 1 day/month for 3 months	1day/month for 3 months	\$200 /month
Medical room rental	Medical consulting room rent: \$500/week	\$6,000	Fixed	Cost to rent a consulting room equipped with medical supply	4 weeks/month for 3 months	\$2000 / month
	Total requested	\$6,600				
Medical equipment	Sphygmomanometer: \$28/meter	\$56	Fixed	Cost to purchase medical equipment for the scholarly project educational session	2	\$28/meter
	Glucometer: \$80/ meter	\$160	Fixed		2	\$80/meter
	Weighing scale: \$11/ scale	\$22	Fixed		2	\$11/meter
	Total requested	\$238				

Technology	Projector rental once a month at \$79/month	\$237	Fixed	Cost to rent projector for 1 day/month for 3 months	Monthly rental rate	\$79 / month
	Communications- Internet subscription at \$50/month	\$150	Fixed	3 months Internet subscription	Monthly subscription rate	\$50 / month
	Cell phone subscription at \$30/month	\$90	Fixed	Cost of cell phone for follow up with participants for 3 months	Monthly subscription rate/month	\$30 / month
	Total requested	\$477				
Personnel	1 project manager; \$30/hour Time spent designing program and facilitating educational sessions for participants	\$180	Variable	Cost of project manager salary/hr 6 hours (2 hours per month for 3 months)	Wages	\$30 / hour
	3 VTC staff: \$18/hour Time spent administering coronary heart disease risk factor scale and data collection	\$648	Variable	Salary of 3 VTC staff/hr (2 hours per month for 3 months)	Wages	\$18/ hour
	2 Project assistants: \$15/hour	\$180	Variable	Wages for project assistant/hr	Wages	\$15 / hour
	1 interpreter/transcriptionist: \$30/hour Time spent transcribing and interpreting from English to three African languages (Yoruba, Swahili, TWI and Igbo)	\$180	Variable	Wages for interpreter/transcriptionist /hr	Wages	\$30/ hour
	Total requested	\$1,188				
	Grand Total Request	\$8,606.00				

Appendix N
Three-Year Budget

Two-Three Year Budget (Appendix F)							
Revenues		Budget Year 1		Budget Year 2		Budget Year 3	Rationale
In-Kind Donations		\$8,606.00		0		0	Donation calculated based on the in-kind donation from the expenses. Donation from VTC staff (time, and medical equipment), DNP student (time and technology subscription), and RCCG Victory temple church (facility and medical room).
Donation Year 2		0		\$8,568.90		0	
Donation Year 3		0		0		\$8,773.89	
Total		\$8,606.00		\$8,568.90		\$8,773.89	
Expenses		Year 1		Year 1		Year 1	Rationale
Medical Equipment		\$238.00		\$0		\$0	One time purchase of medical equipment to collect participant's biophysical data. Such as blood pressure, blood glucose and body mass index. In-kind donation from stakeholders.
Material and Education supplies		\$103.00		\$104.96		\$106.95	Based on consumers report, Accounted for 1.9% increase per year in materials and supply for educational sessions is accounted for in the table. Increase applies to Year 2 and year 3.

Technology		\$477.00		\$477.00		\$477.00	Unchanged technology subscription for cell phones and internet subscriptions due to biennial contract. In-kind donation from DNP student.
Personnel Salaries		\$1,188.00		\$1,188.00		\$1,188.00	Salaries remain the same and this is an in-kind donation from VTC staff. Salary ranges from \$15/hr to \$30/hr.
Facility Rental		\$6,600.00		\$6,798.94		\$7,001.94	Based on the Bureau of Labor Statistics inflation rate for building rentals is 3% per year. Chart accounts for 3% increase in cost of facility rental due to inflation for year 2 and 3. In-kind donation from RCCG Victory temple church.
Total		\$8,606.00		\$8,568.90		\$8,773.89	
Operating Income		\$0		\$0		\$0	

Appendix O
Statement of Operations

Statement of Operations	
Using Faith Based Intervention to Increase Awareness, Prevention, and Management of Coronary Heart Disease in African Immigrants	
Revenues	
In-kind donations	
VTC Church; Facility use	\$6,600.00
VTC Clinic: Salaries, medical equipment and education training supplies	\$1,188.00
DNP Student: Technology subscription	\$477.00
<i>Total</i>	\$8,606.00
Expenses	
Medical Equipment	\$238.00
Education Training	\$103.00
Technology	\$477.00
Personnel Salaries	\$1,188.00
Facility Rental	\$6,600.00
<i>Total</i>	\$8,606.00
Operating Income	
	\$0

Appendix Q

IRB Approval Letter



Date: May 01, 2019

To: Temitope Okpebho **cc:** Pam Gehrke

From: Social & Behavioral Institutional Review Board (SB-IRB)
c/o Office of Research Compliance (ORC)

Subject: SB-IRB Notification of Approval - Original - 186-SB19-097
A Faith-Based Quality Improvement Project to Increase Awareness, Prevention, and Management of Coronary Heart Disease in African Immigrants

The Boise State University IRB has approved your protocol submission. Your protocol is in compliance with this institution's Federal Wide Assurance (#0000097) and the DHHS Regulations for the Protection of Human Subjects (45 CFR 46).

Protocol Number: 186-SB19-097	Received: 4/30/2019	Review: Expedited
Expires: 4/30/2020	Approved: 5/1/2019	Category: 5, 7

Your approved protocol is effective until 4/30/2020. To remain open, your protocol must be renewed on an annual basis and cannot be renewed beyond 4/30/2022. For the activities to continue beyond 4/30/2022, a new protocol application must be submitted.

ORC will notify you of the protocol's upcoming expiration roughly 30 days prior to 4/30/2020. You, as the PI, have the primary responsibility to ensure any forms are submitted in a timely manner for the approved activities to continue. If the protocol is not renewed before 4/30/2020, the protocol will be closed. If you wish to continue the activities after the protocol is closed, you must submit a new protocol application for SB-IRB review and approval.

You must notify the SB-IRB of any changes to your approved protocol and the committee must review and approve these changes prior to their commencement. You should also notify the committee if your activities are complete or discontinued.

Current forms are available on the ORC website at <http://goo.gl/D2FYTV>

Please direct any questions or concerns to ORC at 426-5401 or humansubjects@boisestate.edu.

Thank you and good luck with your research.

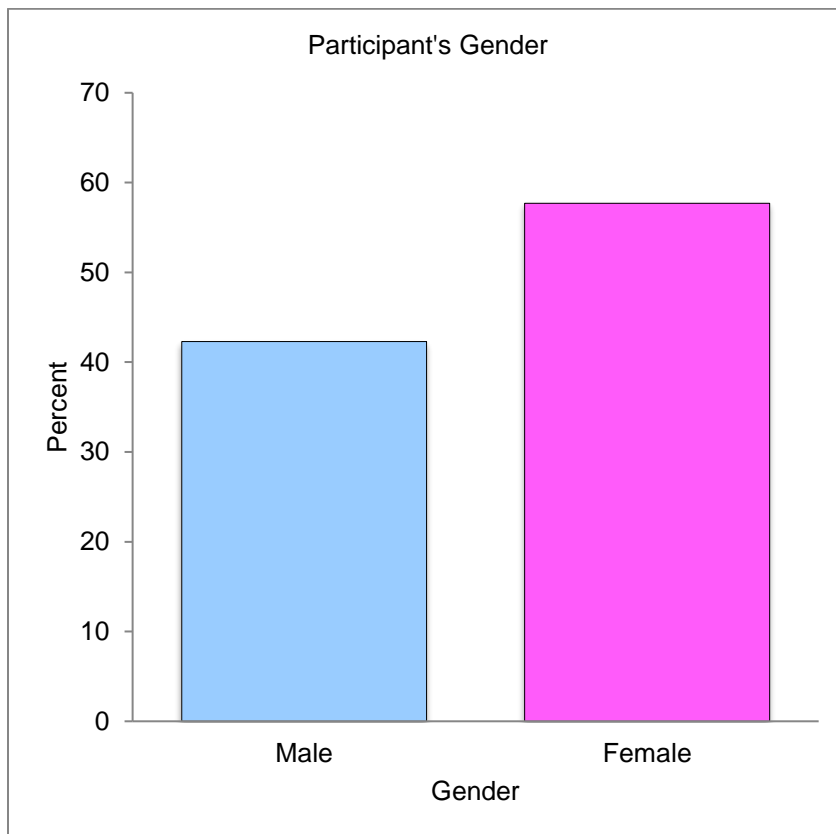
1910 University Drive Boise, Idaho 83725-1139
Phone (208) 426-5401 orc@boisestate.edu

This letter is an electronic communication from Boise State University

Appendix S
Demographic Data -Gender

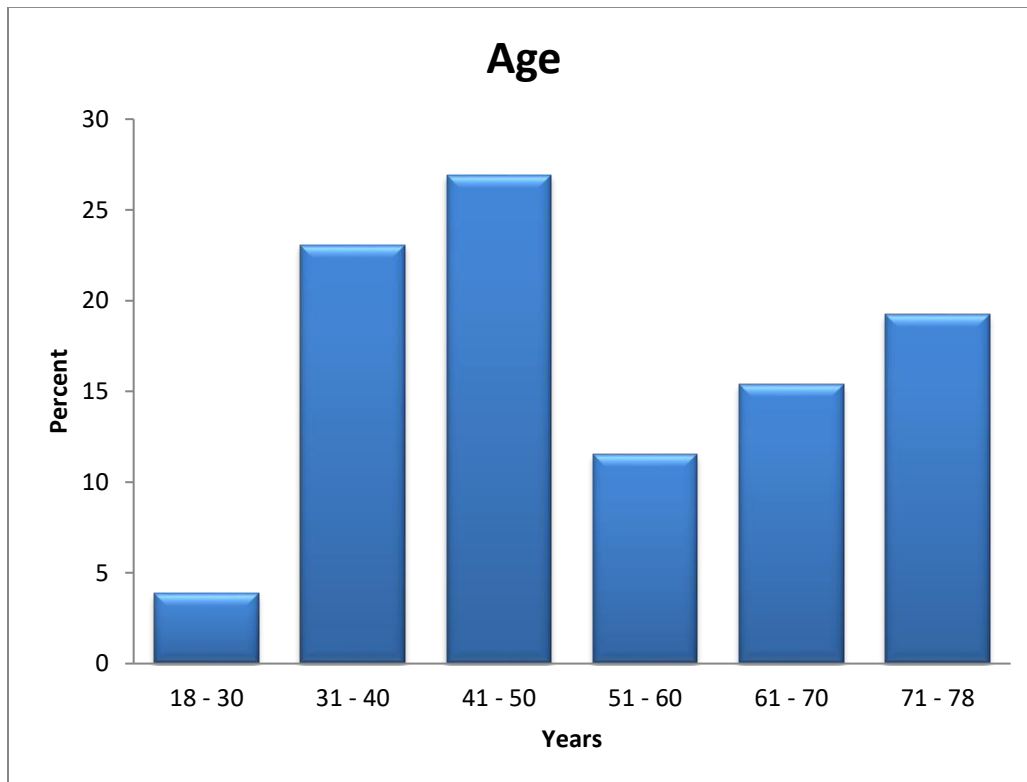
Demographic Data

Gender	<i>Frequency</i>	<i>Percent</i>
Male	11	42%
Female	15	58%
	26	100%



Appendix T
Demographic Data - Age

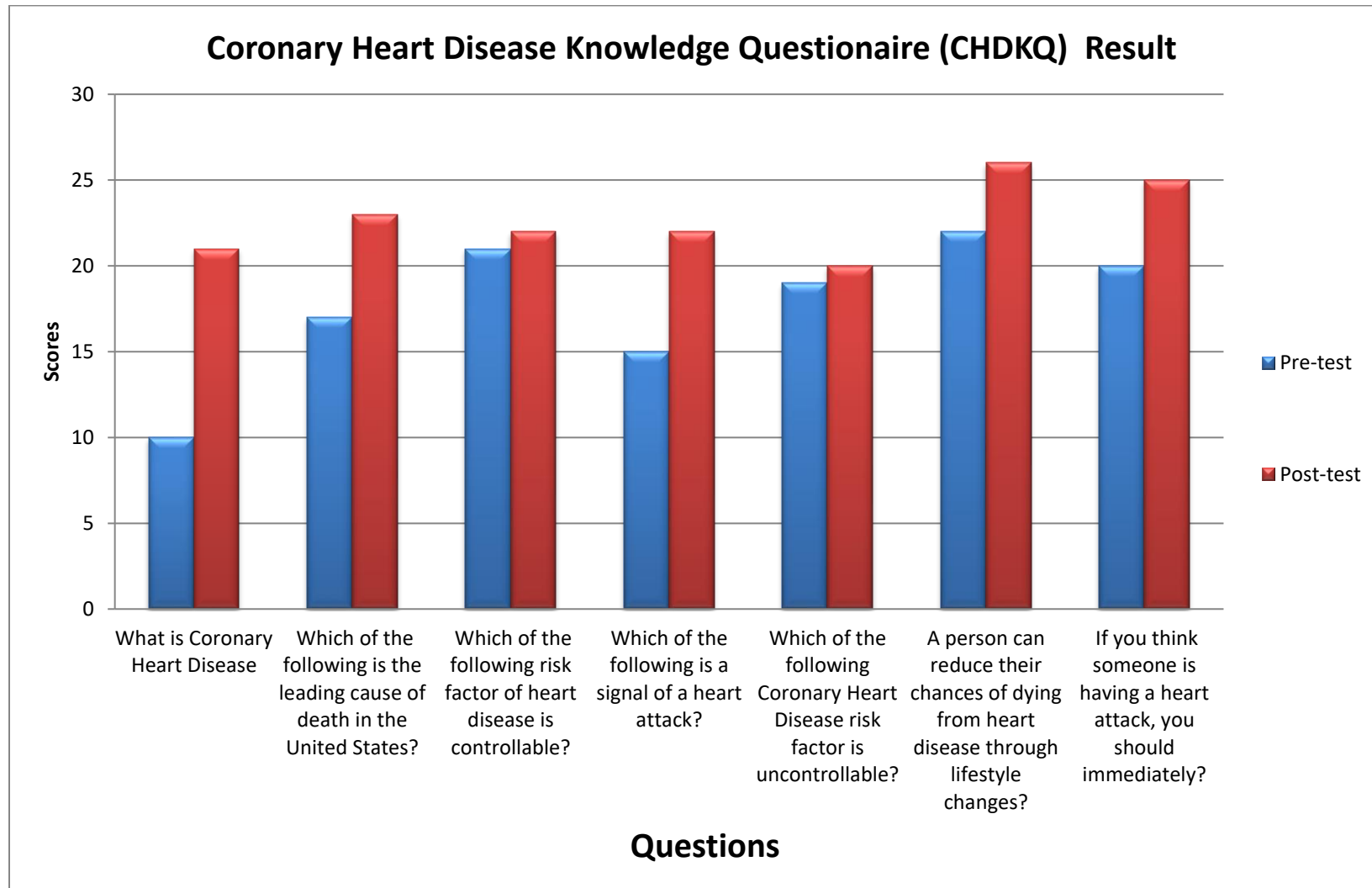
Age	<i>Frequency</i>	<i>Percent</i>
18 – 30 years	1	3.8
31 – 40 years	6	23.1
41 – 50 years	7	26.9
51 – 60 years	3	11.5
61 – 70 years	4	15.4
71 – 78 years	5	19.2
	26	100.0



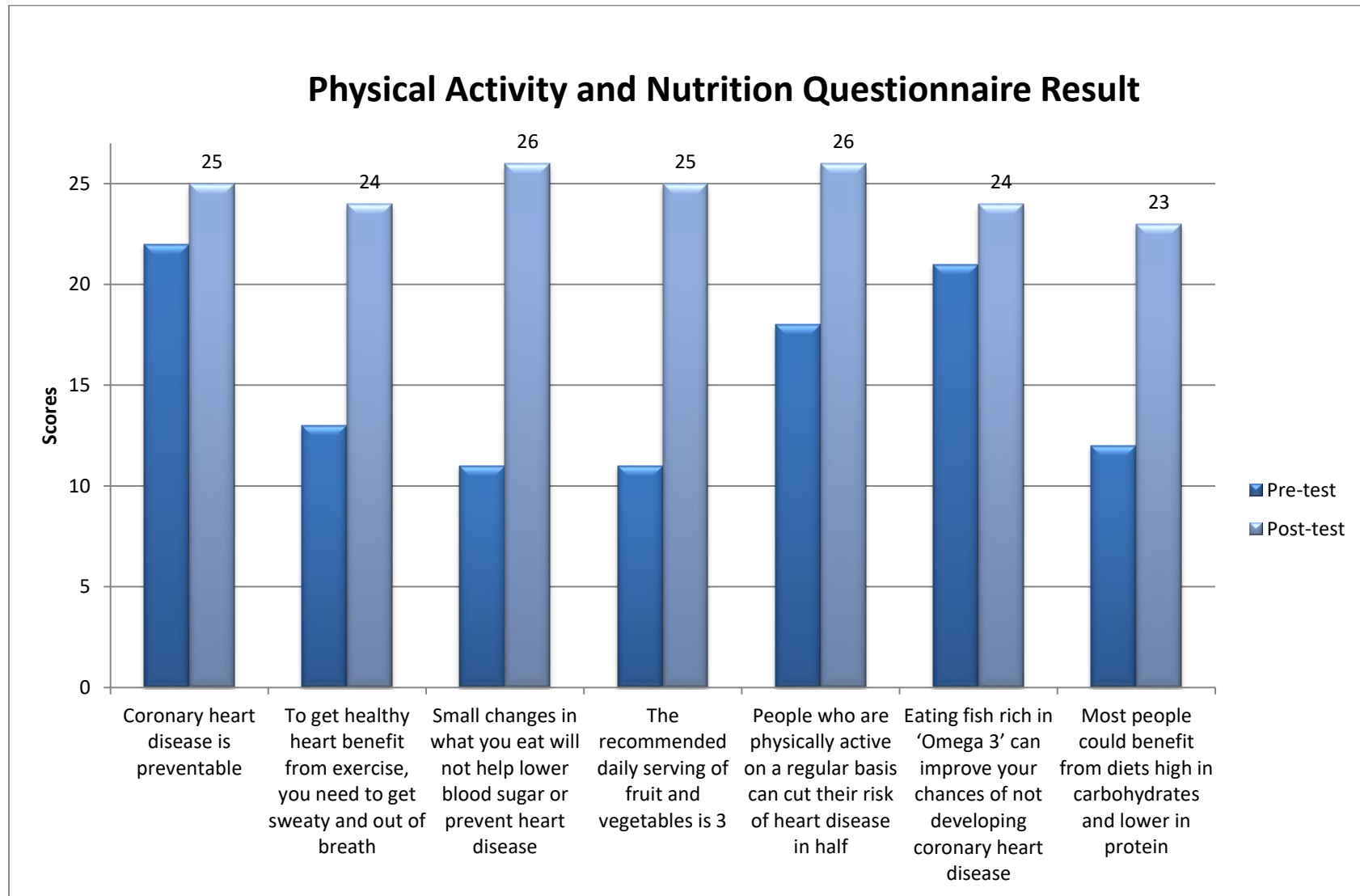
Appendix U
Demographics -Others

	<i>Frequency</i>	<i>Percent</i>
<i>Employment</i>		
Employed	22	88%
Unemployed	3	12%
Total	25	100%
<i>Education</i>		
No Education	0	0.0
Elementary School	0	0.0
High School	7	27%
College and above	19	73%
Total	26	100%
<i>Years Lived in the US</i>		
0 to 5	9	35%
6 to 10	5	19%
11 to 15	3	12%
16 and over	9	35%
	26	100%

Appendix V

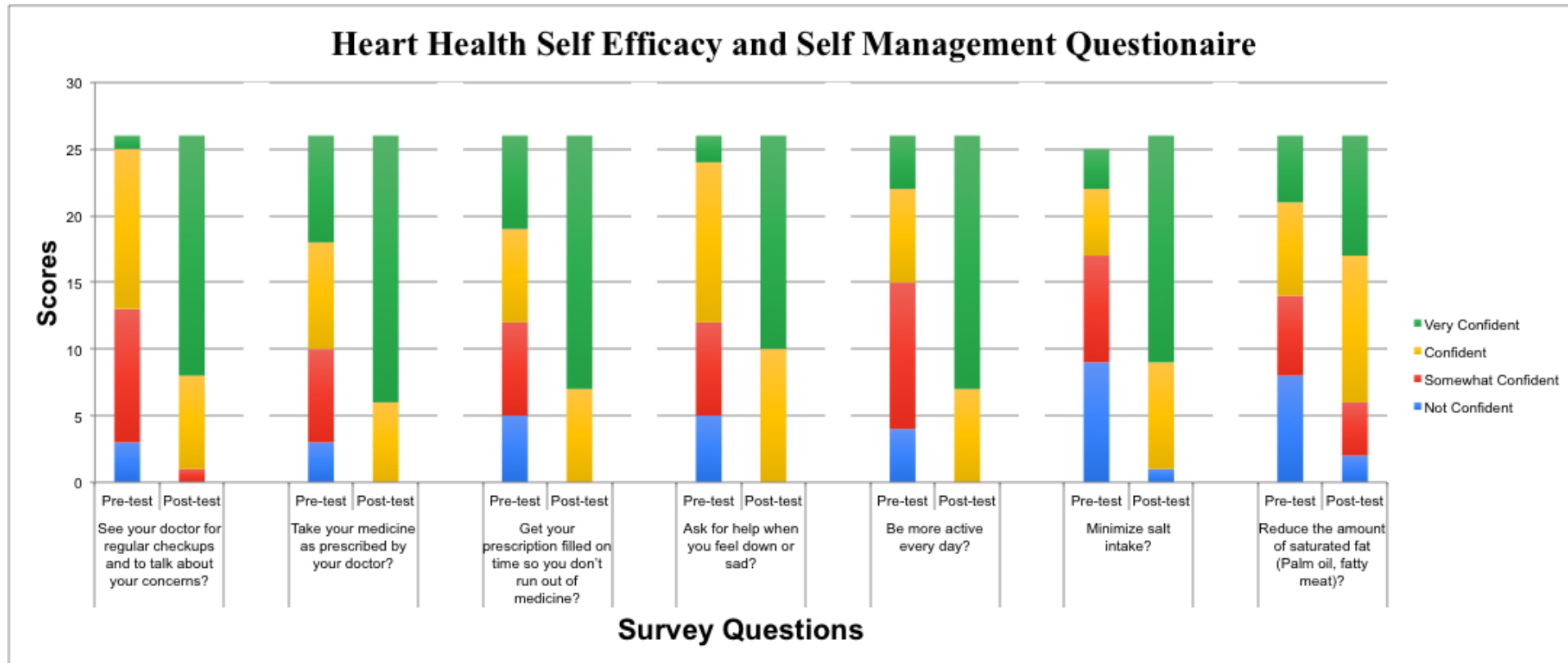


Appendix W

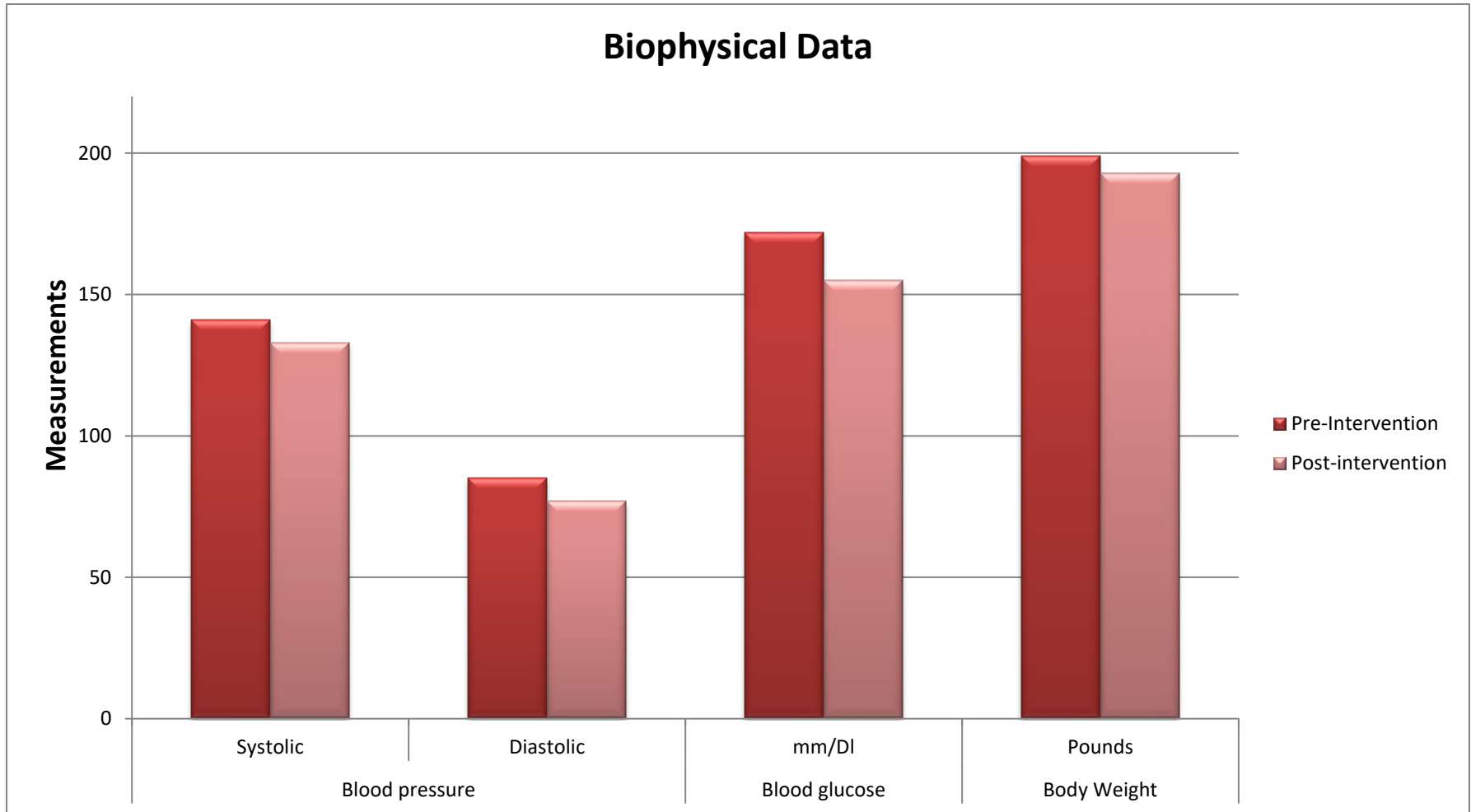


Appendix X

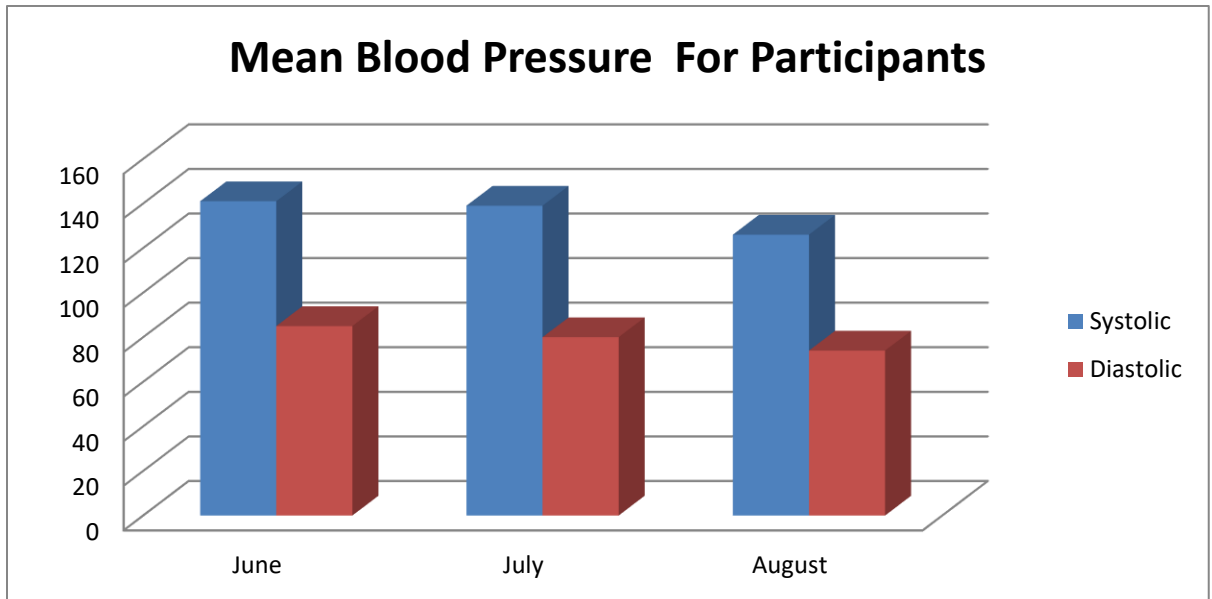
Heart Health Self Efficacy and Self Management Questionnaire Result (HH SE SM)



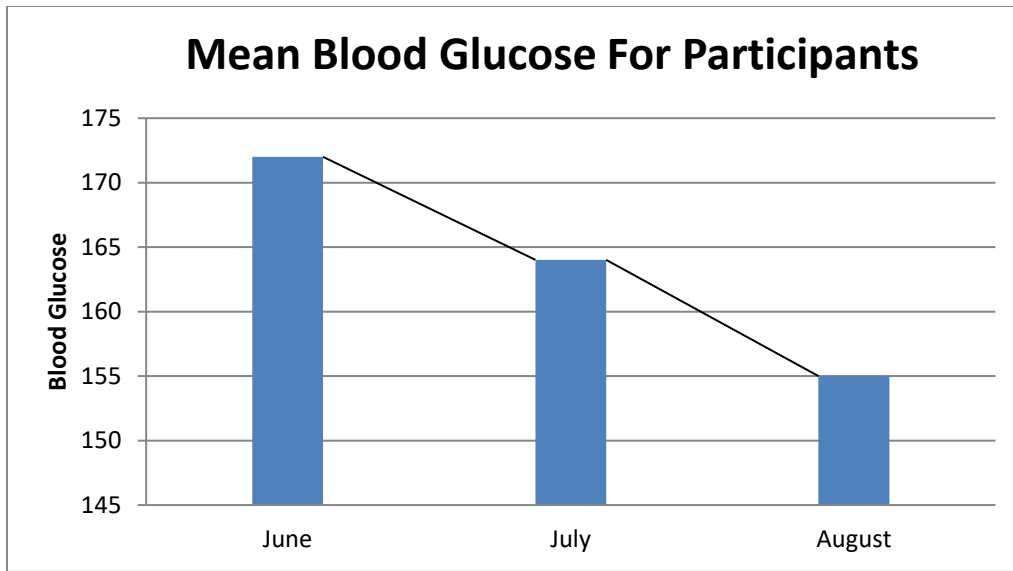
Appendix Y



Appendix Z



Appendix AA



Appendix AB