Cardiovascular Disease Intervention Program for African American Adults

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School of Health Management Approval of the Applied Dissertation

Approval Page

This applied dissertation was submitted by Karl Smith. Mr. Smith's committee was composed of the individuals indicated below. The dissertation was submitted to the Dean of the School of Health Management for the final approval in partial fulfillment of the requirements for the degree of Doctor of Health Education at A.T. Still University.

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Abstract

Abstract

The problem addressed in this research was the disproportionate representation of African Americans as cardiovascular disease cases in the United States. Common methods for reaching African Americans do not take advantage of the cultural aspects of the population, specifically community faith-based organizations. This study reviewed best practices of cardiovascular disease prevention programs, and conducted research on alternative means of presenting and teaching cardiovascular disease prevention to African Americans at a faith based organization.

Over eight weeks the researcher implemented an intervention program that compared the degree of satisfaction associated with participation in an online and traditional health education program for cardiovascular disease prevention for African American adults at a faith-based organization in Piedmont, South Carolina. Participants were provided with information about cardiovascular disease, and associated cardiovascular disease prevention techniques.
will you report results here?

Table of Contents

Table of Contents

Chapter 1: Introduction

Cardiovascular disease (CVD) is the number one killer of all Americans; however African Americans are disproportionately affected by cardiovascular disease (Frank & Grubbs, 2008). Opinions vary regarding the cause of this phenomenon; some researchers cite disparities in available medical resources and socioeconomic status (Kaplan & Keil, 1993). Other researchers focus on the demographic traits and biological factors (Jones et al., 2002). . Recognized risk factors include "hypertension, left ventricular hypertrophy, type 2 diabetes mellitus, obesity, cigarette smoking, and physical inactivity" (Clark et al., 2001, p. 98).

. "Cardiovascular disease is the leading cause of death for all major demographic groups in the United States" (Fleming et al., 2000, p. 49). The American Heart Association (2009) notes in their 2009 Heart Disease and Stroke Statistics update that "An average of 2400 Americans die of CVD each day, an average of one death every 37 seconds" (p. 7). This statistic further emphasizes the need for community prevention programs. As with most epidemics of this proportion, prevention programs rooted in a community education platform are the key to decreasing the spread of the illness. The U.S. Department of Health and Human Services (HHS) (2000) publication for their Healthy People 2010 initiative highlights the importance of a community-based intervention program:

> Educational and community-based programs have played an integral role in the attainment of Healthy People 2000 objectives and will continue to contribute to the improvement of health outcomes in the United States by the year 2010. These programs, developed to reach people outside traditional health care settings, are fundamental for health promotion and quality of life (p. 7-3).

The community intervention programs that reach people –WHAT IS YOUR OPERATIONAL DEFINITION FO REACH? provide a cultural connection to the populations served, which makes it easier for the people to relate to programs and services.THIS IS NOT NECESSARILY TRUE.

There have been large, community-based programs that have set precedents for cardiovascular disease prevention program design, such as the North Karelia Project, the Stanford Five-City Project, and the Minnesota Heart Health Program (Brownson et al., 1996). Unfortunately, the demographics of these programs were not representative of the general population, as many minority groups were not included in the studies.

Faith-based organizations offer a cultural bridge into many areas that are highly populated by minorities. Faith-based organizations, are churches, mosques, synagogues, and other places of worship. The purpose of working with a faith-based organization is to open doors to a community that may be wary of outsiders and unapproachable under other circumstances. The church, under the direction of a church leader (clergyperson), may be more receptive than any other community center, school, or place of employment, because church parishioners are already under the guidance of the church leader. Support from this leader will help secure acceptance of and participation in a cardiovascular disease prevention program. The leader acts as an advocate for the program and helps set the pace of participation for other church members. In research conducted by Frank and Grubbs (2008), the researchers found that developing a strong relationship with the pastors of participating churches helped acceptance from their parishioners. Furthermore, the culture of each congregation is more easily understood with the assistance of the church leader (Pratt et al., 1999).

Many smaller, less expensive programs focused on African Americans were developed at a community level and some of these programs were reviewed by Pratt, Hurst, Williams, and Martin (1999). Researchers found that "support of church leaders, presentations in neighborhoods, the combination of heart health screening with in-depth counseling and education, and the relocation of presentation sites to accommodate more people and their time schedule are important for effective programming" (Pratt, Hurst, Williams & Martin, 1999, p. 89). These concepts are the basis for later program designs using the existing ties between faith-based organizations and the African American community to develop dynamic programs to test and counsel participants about cardiovascular disease and create prevention programs accessible to participants.

The power of faith-based organizations in the African American community reaches beyond the spiritual and into the social ideals of the community. As Frank and Grubbs (2008) noted, "for African Americans, churches are a social and cultural gathering site and can serve as a key community gathering center" (p. 96), hence the suggestion by Pratt et al., (1999) that securing support from church leaders is an important consideration when implementing programs designed for this population group.

Cardiovascular disease prevention programs designed for the African American community must not only test participants for cardiovascular disease risk factors, but must to counsel individuals about prevention and treatment of associated risk factors. Health professionals should reinforce the supportive atmosphere of the faith-based organization to allow for a seamless transition from spiritual guidance to health education. Studies reviewed by Frank and Grubbs (2008), encouraged health education professionals to interact with community

members on a spiritual and cultural level to elicit more effective health changes.

Although traditional programs offer many benefits they are limited in the ability to reach potential participants when and where participants are available. Online programs offer more flexibility, and through asynchronous interactions, participants can interact with other participants and the program instructor at a time convenient to the participant. The flexibility of online programs will allow community members to participate in health education programs regardless of their location or available time.

One aspect of a prevention program geared toward African Americans in low socioeconomic communities is to "take into account social/financial barriers" (Frank & Grubbs, 2008, p. 96). Such potential barriers as childcare and transportation prevent interested individuals from participating in cardiovascular disease prevention programs. The flexibility of online programs helps alleviate many of the boundaries preventing community members from participating in health education programs. With advances in technology and program design, researchers have found that online learners "learn as much if not more from online courses as they do in traditional higher education courses" (Swan, 2003, p. 2). Prevention programs such as this will reach more of the population that needs accessible and flexible access to cardiovascular disease prevention services. Johnson et al. (2000) noted that online learning "facilitates the exchange of information and expertise while providing opportunities for all types of learners in distant or disadvantaged locations" (p. 30).

Statement of Problem

Over eight weeks the researcher implemented an intervention program that compared the degree of satisfaction associated with participation in an online and traditional health education

program for cardiovascular disease prevention for African American adults at a faith-based organization in Piedmont, South Carolina.

Sub problems

The study addressed the following sub problems:

1) Does participation in an online intervention program increase the ability of a participant to maintain attendance during a cardiovascular disease intervention program?
2) Does participation in a face to face, traditional, intervention program increase a participant's self efficacy towards their perceived ability to change their cardiovascular disease risk factors? You didn't measure this did you?

Impact of the Problem

African Americans have a higher risk than all other ethnicities for early onset cardiovascular disease. Clark et al. (2001) pointed to the "delays in the identification of treatment" as a major factor in early onset cardiovascular disease (p. 97). Cardiovascular disease prevention programs are often the only source of information for many African Americans. Knowledge of risk factors and treatment, may be the difference between seeking medical attention or dismissing a warning sign and becoming another statistic.

Faith-based organizations offer an opportunity to reach a captive audience who stands to benefit from prevention programs. Frank and Grubbs (2008) supported the use of faith-based organizations as a conduit for health education as they noted that "Providing health services that are faith-based has shown promise in improving the health status of the African American population" (p. 96). The connection between church and community is so tightly associated that research reviewed by Benjamin, Kong, Ofili and Walker (2002) states that "religion constitutes

the African-American identity" (p. 4). This connection cannot be understated and therefore a health education intervention program will be more accepted if it is presented in conjunction with a faith-based organization.

Another benefit of faith-based organizations is the ability to increase the level of trust of participants in the program. African Americans have historically distrusted the medical industry due to medical racism as noted by Gamble (1997). Incidents such as African American grave robbing for medical student dissections in Philadelphia in the 1880s, the Tuskegee Experiment from 1932 to 1972, and the experimental measles vaccination of African American children by the Center for Disease Control in Los Angeles in 1989, have led to the avoidance of the health care industry by African Americans (Gamble, 1997). Working with faith-based organizations, a pillar in the African American community, can help increase the level of trust and the level of attendance of CVD intervention programs.

Successful development and implementation of a prevention program lies in the knowledge attained by the participants. This information provides the individual with information to identify risk factors in themselves and other members of their community. Additionally, the data collected from implementation of this project will allow future community organizations to duplicate the research design and potentially increase the number of individuals who are aware of the risk factors of cardiovascular disease and the knowledge of how to treat it.

To increase reliability of the program results, participants with previous experience with CVD intervention programs will be excluded from this CVD educational intervention. The significance of their previous CVD intervention experience would influence their knowledge base and subsequently affect their responses to questions on the pre-test. CVD intervention

program previous participation and associated knowledge can be detrimental to the reliability of the results of the pre and post-test, because it will affect the significance of the knowledge attainment between the pre and post-test of participants.

Evidence of the Problem

Cardiovascular disease is indiscriminate in its effect on the entire population as it remains the number one killer of all ethnicities in the United States (Fleming et al., 2000). However, African Americans are disproportionately represented in cases of CVD (Frank & Grubbs, 2008). There must be a transformation in the health care community in dealing with this ethnic disparity.

Research reviewed by Yancy and Sica (2004) support the claim that treatment of minorities in the healthcare system is unequal, which is a prime factor behind the high rate of affected by cardiovascular disease. The disparities in health care lead to the increased prevalence of CVD in African Americans, as Yancy and Sica (2004) report that "the prevalence of hypertension in African Americans is the highest in the world" (p. 54). The problem exists in a shockingly real way and it will take more than rhetoric to change the present situation.

Overview of the Study Environment

History

The African American community cannot be put into one group. As with the rest of society, African Americans represent all levels of socioeconomic status and geographic locations. The population to be included in the present study will come from parishioners of Flat Rock Missionary Baptist Church in Piedmont, South Carolina. The intervention will occur in the Church recreation center.

Community

Piedmont, South Carolina, is located in Greenville County and has an estimated population of 25,000 people. The community is rural and sparsely populated. Piedmont is prominently located between Clemson University and University of South Carolina's Greenville campus and is a commutable distance away from the city of Greenville.

Flat Rock Missionary Baptist Church is an established presence in the community and most of its members grew up in the Church. The Church has recently hired a new, younger pastor to revive the congregation and bring in new and younger members. Flat Rock Missionary Baptist Church is an ideal location because it has an active congregation that participates in church events and are accustomed to staying after church for activities after the service. The parishioners are also predominantly African American, which fits the population requirements.

Background

The issue of cardiovascular disease in the African American community is one that requires further research by health education professionals, because the problem has only become worst. As the baby boomer generation ages they become more prone to illness and less likely to maintain active lifestyles. Additionally, unhealthy traditions are passed down from the older generation to the younger generations and there is little community leadership to influence the adoption of healthy habits. The problem is the disparities in health education and treatment, this program sets out to address the aspect of health education in order to help decrease the risk factors associated with CVD and African Americans.

Limitations

The study was delimited as follows:

- Participation in the study is limited to those individuals who are members of Flat Rock Missionary Baptist Church in Piedmont, South Carolina.
- Participation in the study is limited to those individuals with home-based internet access.
- Participation in the study is limited to those individuals who have not participated in previous CVD educational intervention programs.

Resources

This study utilized limited resources which included: A computer, Excel software, and the internet. There was no outside funding for the program so resources were selected to provide the greatest benefits with the least expense.

Context

Cardiovascular disease affects African Americans the same way that it affects other sectors of the population. CVD is preventable and is caused by poor lifestyle choices. Research suggesting that the high prevalence of CVD in African Americans is due to genetics is conflicting and debatable, so it will not be discussed in this research, but life choices will be discussed a factor, Yancy and Sica (2004) note that "race cannot be a proxy for genetics or disease" (p. 54). The availability of adequate health services will help decrease the alarming occurrence of CVD in the African American Community.

Researcher's Role in the Environment

The researcher's role was to provide guidance throughout the course. The researcher moderated discussion topics, assigned homework, kept attendance, raised questions, answered questions, collected and assessed data. The researcher did not discuss the participant's progress

with anyone in the program, was not aggressive with participants, did not take advantage of participants, or did not give medical advice to participants.

Organizational Chart

Pastor – Christopher Scott

Purpose of this study

The problem addressed in this research is the disproportionate representation of African Americans in cardiovascular disease cases in the United States. Common methods for reaching African Americans do not take advantage of the cultural aspects of the population, specifically community faith-based organizations. This study reviewed best practices of cardiovascular disease prevention programs, and conducted research on alternative means of presenting and teaching cardiovascular disease prevention to African Americans.

Definition of Terms

The following terms as used in the present study:

- Educational Intervention – A program designed to lead a population away from an adverse result by teaching individuals new skills that address prevention of the adverse result.
- Faith-Based Organization – A place of worship, also known as a church.
- Online Educational Methods – Methods of teaching that take place through the world wide web (internet), are asynchronous and require time to offer students freedom to participate in lessons where and when they are ready to participate.
- Traditional Educational Methods – Methods of teaching that are often presented in a designated facility, have a set start and end time, are face-to-face, and require students

to participate at the time and place designated by program administrators.

Summary

The challenge facing many health educators working with the African American community is two-fold. First, attention must be on the socioeconomic and spiritual attributes of the population. Secondly, trust must be built between the health educator and the community. Faith-based organizations serve as a multifaceted launching point for community health education initiatives because of their established leadership, available participants, and historical community involvement. By working with a faith-based organization, health educators will increase trust, participation, and knowledge retention of the African American population.

The addition of alternative methods of participation should be used when possible to eliminate some barriers that may be faced by potential participants, like time and place of CVD intervention programs. The internet creates an opportunity for community members to participate in intervention programs in a noninvasive format that allows for asynchronous participation, a factor that plays into the socioeconomic barriers of childcare and travel. In this study, I propose to address the needs of the participants as well as the goals of the study by working with faith-based organizations and alternative mediums such as the internet offers greater opportunity to reach those individuals who need health education services.

Chapter 2: Literature Review

This review of literature will assess the relevance and relatedness of the research problem and the reviewed articles based on the following three areas: (a) cardiovascular disease risk factors, (b) cardiovascular disease intervention programs, and (c) online versus traditional education methods. The three areas of interest will set the foundation for future chapters as they relate to comparing the degree of satisfaction associated with participation in an online or traditional cardiovascular disease prevention program for African American adults.

The first section, cardiovascular disease risk factors, will address the association between cardiovascular disease and African Americans as it describes key reasons why African Americans are disproportionately represented in cardiovascular disease statistics. This section will also provide a rationale behind focusing an intervention program on the specific population of African Americans.

The second section, cardiovascular disease intervention programs, will review literature that will offer insight on cardiovascular disease intervention programs currently in existence. Review of current program design and results will assist in the development of an effective intervention program for cardiovascular disease. Additional attention focuses on CVD prevention programs for African Americans. This distinction will allow for a more detailed exploration into the significance of an ethnic specific intervention program.

The third section, online versus tradition education methods, will look at the differences between online and traditional education methods. This section will offer a base of knowledge for the creation and implementation of an online cardiovascular disease prevention program.

Cardiovascular disease prevention comes in many shapes and sizes from public policy

changes to individual responsibility. However, community-based intervention programs are the most widely represented and are most often associated with cardiovascular disease prevention. Through this literature review, the critique of the methodology and effectiveness of traditional community-based programs will help determine the potential effectiveness of an online cardiovascular disease prevention program using similar principles.

Cardiovascular Disease Risk Factors

Cardiovascular disease (CVD) is any disease of the heart including, but not limited to, coronary heart disease (CHD), heart attacks, stroke, and hypertension. "African Americans have the highest overall CHD mortality rate and the highest out-of-hospital coronary death rate of any ethnic group in the United States" (Clark et al., 2001, p. 97); these statistics are steadily increasing as the healthcare disparity increases between racial groups. Out-of-hospital deaths are common in communities where there are fewer medical services or where potential patients do not have health insurance. However, studies have shown that when all variables are accounted for (income, age, and access to care), African Americans still have a higher mortality rate due to cardiovascular disease than their white American counterparts (Clark et al., 2001).

African Americans participate in the healthcare system at a lower rate than white Americans. There are many reasons why African Americans participate less than other ethnicities in the healthcare system.. Some reasons are personal or culturally rooted, like fear or lack of trust, while others are more socially debilitating, like socioeconomic status. Research reviewed by Benjamin, Kong, Ofili, and Walker (2002) brings to light the low percentage of African Americans with insurance coverage as a cause for low participation in the healthcare system. The battle over affordable healthcare continues until this day; even after healthcare

reform in the 1960s ushered in Medicare and Medicaid, African Americans are underrepresented in the healthcare system (Benjamin et al., 2002).

Historically, many scholars point to the Tuskegee Experiment, which lasted from 1932 to 1972, as the single most important reason for the distrust many African Americans have of the medical industry, but research by Gamble (1997) points to a long history of experimentation and exploitation of African Americans that pre-dates the Tuskegee Experiment as far back as slavery times. In one instance a "Georgian physician Thomas Hamilton conducted a series of brutal experiments on a slave to test remedies for heatstroke," while in Alabama "Dr J. Marion Sims, the so-called father of modern gynecology, used three Alabama slave women to develop an operation to repair vesicovaginal fistulas" (Gamble, 1997, p.1774). Gamble noted that the experiments were done without anesthesia. Gamble (1997) also cites research, post Tuskegee, which illustrates the racial inequalities in treatment of African Americans as compared to their white American counterparts. It is this evidence that prevents African Americans from trusting the healthcare system and seeking treatment for CVD and related ailments.

Aside from the historical fear associated with the American health care system, some African Americans stay out of the health care system because they do not have access to affordable services. Researchers agree that cardiovascular disease is strongly associated with socioeconomic status (Kaplan & Keil, 1993). Socioeconomic status is often not gathered directly; due to the social stigmas and categorization associated with its respective titles, many people will not or cannot identify themselves as being in one group or another, so socioeconomic status is measured through the use of related terms and conditions. Kaplan and Keil have outlined the basic tenants of socioeconomic status in an effort to increase voluntary information

from participants. According to Kaplan and Keil, education tops the list for creating the greatest response from participants; not without its limitations, education is highly related to socioeconomic status. While income is more closely related to socioeconomic status, Kaplan and Keil say, "nonresponse by subjects to income related questions averages 9% to 10%. However many studies have lower rates of response" (p. 1975).

Socioeconomic status is a good measure for comparative study of the prevalence of disease and access to resources, because it is believed to be exclusive of race and yields similar results for both African Americans and Caucasians, though Clark et al. (2001) notes African Americans are affected more so than other ethnicities when their socioeconomic status is low. Studies reviewed by Kaplan and Keil (1993) support statements made by Clark et al., as they note in their article, "for white men and women, those with zero to four years of education had approximately 66% and 44% higher standardized mortality ratios, respectively, than those with five or more years of college. For African American men and women the corresponding ratios were 73% and 78% higher" (p. 1976). This disparity in education, as a representation of socioeconomic status, is seen across different socioeconomic status markers including income, occupation, and employment status; with limited information on community location, there was no significant difference to note for this measurement. As mentioned earlier, an important reason for higher mortality ratios of African Americans is the availability of healthcare services and willingness to have regular visits with medical staff.

Clark et al. (2001) further expounds on the disparities of CVD and African Americans with a list of six risk factors that are higher in African Americans than in whites, which includes (a) hypertension, (b) left ventricular hypertrophy (LVH), (c) type II diabetes, (d) obesity, (e)

cigarette smoking, and (f) physical inactivity. According to Clark et al., hypertension in African Americans starts at a younger age and occurs five times more often than in whites. "Hypertension is the most common cause of left ventricle dysfunction" (p. 99). Recent left ventricle dysfunction studies reviewed by Clark et al. showed African Americans had a higher risk of heart disease and death than whites due to related risk factors and low knowledge of associated risk factors. As noted by Clark et al., "LVH … is a stronger risk factor than hypertension, cigarette smoking, or hypercholesterolernia" (pp. 99-100). A study by Jones et al. (2002) supports Clark et al.'s postulation that LVH is a strong risk factor, as the study notes "LVH was an especially strong risk factor in black women, was statistically significant in black men, and was not significant for white men and women" (p. 2567).

Type II diabetes is another risk factor that is higher for African Americans than for whites, in both its prevalence as a disease and in its ability to increase odds of CVD and CVD-related mortality. "The prevalence of type II diabetes is two to three times higher in African Americans than whites" (Clark et al., 2001, p. 100). This is noteworthy because as Clark et al. note 80% of all diabetes deaths are CVD related.

The risk factors associated with cardiovascular disease are by definition preventable diseases, yet if unchecked or untreated can end in death. Death is more often the outcome in African American communities because this population does not know cardiovascular risk factors and is not properly treated by healthcare professionals.

Cardiovascular Disease Prevention Programs

Addressing cardiovascular disease is a task that many nonprofit organizations and government agencies have attempted to do, with varied success. Some prevention efforts are

geared toward treating one at-risk neighborhood, while others work with entire states. Regardless of the size of the program, the mission has always been the same: inform the community of cardiovascular disease and show people how to prevent themselves from becoming another statistic of cardiovascular disease. In the African American community, cardiovascular disease prevention programs offer many residents an opportunity for healthcare advice to which they might not have ordinarily had access. The task for many programs is to increase participation by accommodating the community as needed to ensure the at-risk population is able to participate.

The American Heart Association has published a guide for cardiovascular disease risk intervention that addresses nine intervention points and associated goals that to be reached for each intervention. The nine intervention points include; smoking cessation, blood pressure control, dietary intake, aspirin, blood lipid management (cholesterol), physical activity, weight management, diabetes management, and chronic arterial fibrillation (Pearson et al., 2002). Cardiovascular disease intervention programs that focus prevention techniques on these points will increase those programs' ability to achieve positive results. The direction that each program takes ultimately depends on the population it is serving. The African American community has been linked to higher rates of physical inactivity, poor diet, high blood pressure, and tobacco use. Researchers have recognized smoking cessation, blood pressure control, dietary intake, and physical activity as the four "modifiable factors" (Brownson et al., 1996, p. 206), all of which are primary risk factors for African Americans. However, these are just points of reference for healthcare providers; they do not provide a guideline for program implementation. Each community and respective demographic will need a different approach to successfully address

the problem of cardiovascular disease. Additionally, early detection and prevention are key, in order to have the greatest impact on a population. Pearson et al. (2002) note, "the challenge for healthcare professionals is to engage greater numbers of patients, at an earlier stage of their disease, in comprehensive cardiovascular risk reduction with the use of interventions that are designed to circumvent or alleviate barriers to participation and adherence, so that many more individuals may realize the benefits that primary prevention can provide" (p. 389).

Larger, more expansive studies like the Minnesota Heart Health Program, the Pawtucket Heart Health Program in Rhode Island and Massachusetts, and the Stanford Five-City Project in California have been well-documented by a number of researchers and have yielded favorable results supporting the use of CVD prevention programs to achieve awareness and prevention of cardiovascular disease (Brownson et al., 1996). These large-scale programs have brought about regional health changes like the momentous smoking ban in California. Most researchers believe this movement began in during research conducted during the Five-City Study that was a national leader in banning cigarettes in restaurants (Winkleby, Taylor, Jatulis, & Fortmmann, 1996). Highly funded and supported programs bring about great change and set industry standards, but, most importantly, they provide a blueprint for future studies and programs that attempt to construct large-scale, collaborative projects (Winkleby et al., 1996).

Smaller, community-based programs have addressed cardiovascular disease through school and policy programs that directly affect the at-risk community (Brownson et al., 1996). However, because of their size and scope, there is not much data on smaller operations; researchers suggest "the need for smaller, more focused studies within high-risk subgroups such as minority and low literacy populations" (Brownson et al., 1996, p. 207). The Missouri

Department of Health and the Center for Disease Control attempted such a study in the Bootheel region of Missouri, which is predominantly low socioeconomic status African Americans. Programs of this stature yield results that suggest "a community-level reduction in cardiovascular disease risk may be achievable through relatively low-cost interventions that combine educational efforts with environmental changes" (Brownson et al., 1996, p. 211).

African Americans are disproportionately overrepresented in statistics of cardiovascular disease mortality and many major studies have all but excluded African Americans by the choice of geographical location. Further, considering the rates of African American mortality are increased when coupled with low socioeconomic status, it makes it more difficult to reach those in need of CVD prevention programs. "Research suggests that low socioeconomic individuals do not respond well to traditional health education programs that provide written information or brochures, lectures or exercise programs at established health care institutions" (Frank & Grubbs, 2008, p. 96). Furthermore, interactions on a personal, social, and spiritual level seem to increase the acceptance and effectiveness of community health education programs among African Americans (Frank & Grubbs, 2008).

Research reviewed by Pratt, Hurst, Williams, & Martin (1999) suggest that recruitment of community leaders such as pastors, community center directors, small business owners, and outspoken neighborhood socialites increases interest and support for community-based CVD prevention programs. The key in African American communities is "support of community leaders, it is necessary to understand the culture of the community before embarking on behavior-change strategies" (Pratt, Hurst, Williams, & Martin, 1999, p. 89). Whereas mass communication via television and radio were successful forms of communication in larger

studies like the Five-City project, resources would be better used to form partnerships with church pastors to work with the African American community.

A good bridge to the African American community is through the church. The church in the African American community is not only a place of worship, but it also serves as a community center, a place for congregation, and often a place for community outreach (Frank & Grubbs, 2008). Through missionary services, many churches represent the local nonprofit community development organization, and through various events and services the church offers researchers a highly capable recruiting post to assist in reaching the intended audience. Understanding these cultural differences may help increase program acceptance and decrease boundaries to knowledge attainment.

Online versus Traditional Education Methods

Being able to offer services that do not place a burden on participants regarding transportation, child care, and other financial and location constraints is just as important as providing culturally sensitive programs. The use of an online training environment may provide an alternative to traditional face-to-face training programs. Creating dynamic programs will help increase the reach and effectiveness of cardiovascular disease prevention programs relating to the at-risk population.

Alternative communication outlets are used in health education programs to reach various populations. Research conducted by Walker (2000) utilized telephonic recordings to reach elderly participants in research on hypertension management. Walker (2000) found that participants averaged a 75% success rate on a knowledge test given after a 6-week intervention program. Favorable results with this format offer hope to expand research into other areas of

communication such as the internet.

Advancements in web technology have made it possible for people in remote locations to take classes from institutions around the world. In some cases, the only distance between most people is a Wi-Fi connection or an Ethernet cord. Aside from the obvious benefit of decreasing the disparities created by geographic locations, online learning environments also account for alternative learning styles, as noted by Johnson, Aragon, Shaik, and Palma-Rivas (2000) "[The online learning environment] facilitates the exchange of information and expertise while providing opportunities for all types of learners in distant or disadvantaged locations" (p.30). Conversely, Johnson et al. note that traditional learning does not provide as dynamic a learning environment and usually is more passive. This passive learning phenomenon is seen in the interactions of students with teachers and with each other. Swan (2003) calls this type of learning "Vicarious Interaction," where student learning takes place when a question is posed to one student and that student answers the questions and interacts with the instructor; during this time, the other students learn about the topic vicariously through the chosen student (p. 21). Vicarious learning in traditional classrooms is commonplace, because of either time constraints or fear of saying the wrong thing in front of the class. In an online learning environment, every student has an opportunity to weigh in on a topic because classroom interaction is asynchronous so time is not an issue; also, during this time students have an opportunity to research the question and prepare an answer they think would be suitable for the discussion.

There are concerns about online learning environments, such as "technology will denigrate higher education and destroy the special relationships instructors have with their students and students have with each other" (Rovai & Barnum, 2003, p. 57); however, these

concerns are not supported by the research in this field. Swan (2003) stated that "students learn as much if not more from online courses as they do in traditional higher education courses" (p. 3). Additional research in this field has found that "online students are more active in the learning process and participate in the course assignments discussing information more often than the traditional classroom student" (Coma del Corral, Guevara, Luquin, Pena, & Mateos Otero, 2006, p. 65). This is promising information for the implementation of an online learning environment for a CVD prevention program for African Americans, because one aspect that increases success of a CVD prevention program is follow-up, as noted by Pratt, Hurst, Williams, and Martin (1999).

An equally troubling concern of an online CVD prevention program is the availability of internet access by all participants. Brodie et al. (2000) found disparities in the use of the internet to find healthcare information by all major demographic categories, including income, education, race, and age. Although Brodie et al. found differences between ethnic groups the differences were not significant when compared to people in the same income and educational groups. Additionally, Brodie et al. noted that "once people gain access to the internet, its use at home to get health information is similar across income, education, race, and age" (p.262). With the advent of new technology such as Web TV, handheld WiFi devices, and internet access on mobile phones, the digital divide has more recently been measured by "penetration lag," which is the time it takes for a certain group to get access to new technology, as opposed to actual gaps in availability between different groups (Brodie et al., 2000, p.263).

Summary

Studies have concluded cardiovascular disease is the biggest cause of death for all ethnic

groups, but African Americans are disproportionately represented in mortality statistics. The need for creation of CVD prevention programs specifically for this demographic has been supported in research. The problem is the urgency of implementation of CVD programs because as fewer people have access to health care and the unemployment percentage increases, lower socioeconomic status people become more susceptible to CVD.

African Americans pose a unique set of circumstances for health care providers as they consider ways to reach and teach this population. Creating strong relationships with community leaders seems to be the best way to understand the cultural dynamics of each neighborhood. The research suggests that understanding the culture will help create a CVD program tailored to that demographic and help increase acceptance of the prevention program. Cardiovascular disease programs are often viewed with skepticism because of the lack of knowledge of previous programs and their success rates. The problem is individual knowledge of the reasoning behind research on the topic of cardiovascular disease. Since the disease is so rampant in the African American community, there is not an individual sense of urgency to deal with the treatment or prevention of the disease. Its prevalence has to be explained and addressed in detail with the community and backed by community leaders in order for there to be full acceptance of the program and participation of the at-risk demographic. Furthermore, programs must be far-reaching and accessible when and where participants are available.

Studies have shown that online learning programs offer the opportunity to provide educational programming that reaches many, at varying times and places. Online learning programs give participants a chance to learn at their own pace and still receive constant feedback, creating a more open learning environment that will be conducive to program

acceptance and knowledge retention. The ability of the participant to control his or her level of involvement without pressure, coercion, or outside influence creates a feeling of self-actualization, as students depend on their own skills and abilities to bring them through an online program. Creating these new skills as self-motivators can bring about positive change in an individual as he or she attempts to accomplish other goals in life.

The development of a cardiovascular disease prevention program in an online format, based on its definition alone, will provide access to at-risk individuals who are in underprivileged areas with limited resources. Programs geared toward this population will benefit from previous research suggestions, and should be targeted through the channels of community leaders and faith-based institutions that are the foundation of many African American communities. The advent of affordable computers and internet access further increases the odds that the population will have better access to an online program than access to a traditional program. Previous research in this field has created valuable insight into best practices for addressing CVD intervention programming. Future research should address participant accessibility to CVD intervention programming through utilizing new media such as online programming.

Chapter 3: Methodology

The previous chapters explained the background and set the stage for further research into cardiovascular disease prevention among African Americans. This chapter discusses the research methodology, sample population, instrumentation, data collection, and data analysis, curriculum/intervention, evaluation methods and standard operating procedures for this study. Cardiovascular disease is a topic of interest on a local and national level. In the printed publication created by the U.S. Department of Health and Human Services (DHHS) (2010), heart disease is listed as a priority topic for Healthy People 2020. On the DHHS (n.d.) Healthy People 2020 website, utilizing the site's health disparity tool, it is noted that starting at the age of 35 and older cardiovascular disease is the number one killer of African American men and women.

The DHHS (2010) has outlined some recommendations to address the health disparity of cardiovascular disease including the need to implement both "Education and Community-Based Programs" and "Health Communication and Health Information Technology" (p. 4). Cardiovascular disease is a wide reaching illness that affects diverse segments of the population, so cardiovascular disease intervention should be just as wide reaching and diverse. On its website the DHHS (n.d.) recognizes the important role that community-based programs play in "preventing disease and injury, improving health and enhancing quality of life," a statement that is supported by the goal of Healthy People 2020, to "increase the quality, availability, and effectiveness of education and community-based programs." It is also noted by the Department of Health and Human Services (n.d.), on its website, that creating health education programs in already existing social structures "maximizes impact and reduces the time and resources necessary for program development." Utilizing a faith-based organization as the platform of a

health intervention program is ideal because “in African American communities, the church is considered the most important social institution” (DeHaven, Hunter, Wilder, Walton & Berry, 2004, p. 1034).

The dissemination of information is just as important as the information itself in order for it to reach the desired populations. Among some of the reasons why the DHHS (n.d.) supports the growth of information technology in the health education field are “increasing health literacy skills and providing new opportunities to connect with culturally diverse and hard-to-reach populations” which coincidentally are factors that plague the African American community.

Proposal

Purpose of the Study

The problem addressed in this research is the available resources and mediums used to present health education topics to African Americans. Common methods for reaching African Americans do not take advantage of the cultural aspects of the population, specifically, community faith-based organizations. This study reviews best practices of cardiovascular disease prevention programs, and conduct research on alternative means of presenting and teaching cardiovascular disease prevention to African Americans.

Over eight weeks the researcher implemented an intervention program that compared the degree of satisfaction associated with participation in an online and traditional health education program for cardiovascular disease prevention for African American adults at a faith-based organization in Piedmont, South Carolina.

Sub problems

The study addressed the following sub problems:

1) Does participation in an online intervention program increase the ability of a participant to maintain attendance during a cardiovascular disease intervention program?
2) Does participation in a face to face, traditional, intervention program increase a participant's self efficacy towards their perceived ability to change their cardiovascular disease risk factors?

Goals of the Study

The goal of this program is to develop an understanding of how participants view their involvement in a cardiovascular disease intervention program in two distinct modalities. The program was delivered in a traditional face-to-face and an online format. Both formats were identical in content but varied in delivery due to the constraints of each format.

Objectives of the Study

The primary objective of this study was to determine whether African Americans would have a preference of presentation modalities when partaking in a cardiovascular disease intervention program. The objective as described will help add insight to the development of future cardiovascular disease programs that are created for an African American population.

Sample

There were a total of 34 participants randomly divided into the two groups, with 17 placed into the face-to-face group and 17 placed into the online group. Participants were African American adults between the ages of 33 and 78. Participants were all members of Flat Rock Missionary Baptist Church in Piedmont, SC.

It was required that all participants have home internet access. This allowed participants in the overall population to be randomly assigned to a treatment group without fear that an

individual will be assigned to the online group and not have home internet access. Both groups received the same pre and post tests as well as underwent the same intervention programs, with the major difference being the medium of interaction.

Individuals were assigned to groups by randomly assignment during the pretest. Numbers were generated using the "RAND" function in Microsoft Excel. To generate a random order for the numbered pre-test, the formula used was "RAND()*33". Since zero was an available number in the formula, the number 200 was added to each number to allow for 0 to be represented as 200 and 33 to be represented as 233. The pretests were numbered according to the generated order and distributed to participants. All participants with even numbers were assigned to the face-to-face group, while participants with odd numbers were assigned to the online group.

Instrumentation

The evaluation tools used in this study were the pre and post test, weekly homework assignments, open discussions and the attendance sheet. The pre test (see Appendix A) serves three purposes in this intervention program: it offers the participants the opportunity to get a glimpse at the types of topics that we will discuss during the program. The pre test also gives the researcher a chance to see what level skill levels the participants are coming in with. Lastly, the pre test offers data on the participants self efficacy regarding their ability to live a healthy lifestyle.

The pre test was 20 questions and all questions were scored on a Likert scale with the first 10 questions using the following scale: 1= Strongly Disagree, 2= Disagree, 3 = Neither Agree nor Disagree, 4= Agree and 5= Strongly Agree; and the next ten questions using the

following scale: 1= Never, 2= Occasionally, 3= Seldom, 4= Frequently and 5= Always. At the top of the pre-test was a number that was used to identify the participant and group assignment during analysis. The participant will also give their age, which will be matched with their number.

The post-test (see Appendix B) allowed participants to reflect on their experience in the course and it allows for a comparison of the self efficacy data retrieved from the pre-test. The post test also included 10 additional questions to assess participant satisfaction. .

The last 10 questions were on a separate page and were geared toward measuring participant satisfaction with their respective course; these questions used the following scale: 1= Strongly Disagree, 2= Disagree, 3 = Neither Agree nor Disagree, 4= Agree and 5= Strongly Agree. This scale was utilized because the questions in this area required the participants to express how they felt about the course, so it was more logical to measure them on agreeability as opposed to frequency of actions, as in the Never to Always scale.

Every week participants will be given weekly homework assignments to complete and discuss during the beginning of the next class. The homework assignments will allow for the students to apply what they have learned in their everyday life. The homework assignments are created to be non-intrusive to the lifestyles of the students but allow for an immediate reinforcement of the topics discussed during the class. In the face-to-face class environment the weekly homework may be the only connection that the participant has with the class until the next week, while in the online asynchronous environment, participants will be able to interact with the instructor and their classmates throughout the week, so the homework will be less of an influential task. The homework assignments were outlined in the syllabus and did not require the

participants to purchase any additional items, but instead helped them become more resourceful and utilize items that they already had in their home. Additionally, the homework assignments offer a bridge for topics from week to week.

The open discussion will be used to gauge the level of competency and comfort that the participants have with the material. During the open discussion section of the program, the participants will have the opportunity to solidify their understanding of cardiovascular disease. The discussion format is designed to allow conversations to be directed by the instructor but allows for open dialogue between the participants.

The attendance of each participant in the face to face format was tracked on a weekly basis. Similarly, participation in the online program was also tracked on a weekly basis. Face-face attendance and online participation will be used to measure the subproblems in this study.

Data Collection

Participants were all members of Flat Rock Missionary Baptist Church. Participants were invited to participate through various announcements during church service. Individuals that volunteered for the study were not coerced or forced to participate and did so by choice. The individuals who volunteered for the study received no monetary incentive to participate and were informed that they would be participating in a study on cardiovascular disease.

The first day of the program, participants were given consent forms and all questions and concerns were addressed regarding what participation would entail. There were no incentives offered to participants, nor were participants paid to participate. After consent forms were signed, participants were randomly assigned participant numbers and assigned to a participation

group. Consent forms, all identifying information and questionnaires are stored on an Excel spreadsheet and will not be seen by anyone but the researcher. Information collected during this research will only be used by the researcher for the purpose outlined in this research.

Access to the online program is password protected and only accessible by invite only. The researcher sent out invitations directly to the participants, and any outside request to join the program must be approved by the researcher. Information shared in the online classroom will only be used by the researcher for the purposes outlined in this research.

The pre test will be administered on the first day of the program after the completion of the consent form and question answer period. The post test will be administered during the last day of the program. The face-to-face group will take both the pre and post test at the intervention facility, while the online group will take the pre test on the first day with the face-to-face group and will take the post test on the last day of the program but will have the option to complete their post test online or at the faith-based institution with their face-to-face counterparts.

Data Analysis

Data analysis will be done using Microsoft Excel statistical analysis functions. The variability in data will be assessed using the standard deviation, and the standard error THIS DOESN'T MAKE ANY SENSE. will be utilized to assess the relationship between the sample data and the population. The results of each group's pre test will be summed and the mean of the group scores will be compared against the mean of their post test to measure the level of satisfaction that each group received from their treatment modality. The results from the post test satisfaction questions will be summed for each group and compared for further analysis of

the level of satisfaction that each group received from their treatment modality.

IRB Approval and Ethical Considerations

This study received IRB approval and was considered in the exempt category by the IRB of A.T. Still University's School of Health Management on October 7, 2010. All participants will be over the age of 18 and will sign an informed consent form, accepting responsibility for any risk associated with participation in the study. Prior to signing the informed consent form, participants will be made aware of the risks and benefits of participating in the study. Participants will not be paid or rewarded for participating in the study, other than the reward of increasing their knowledge of cardiovascular disease prevention techniques.

Role of the Researcher

The role of the researcher will be to design an effective health education program that will engage participants to reflect on their own risk factors and how to address them correctly. The researcher will provide guidance and direction to participants and serve as a mentor during the process, while leading discussions, and evaluating assignments. The researcher will not provide medical advice to any participant during the course of the study.

Budget

The researcher will not apply for aid of any type during this program. Items will be purchased as needed, but will be kept to a minimum. The researcher's personal computer and respective software will be used during this study. The only items that would be purchased will be paper that will be used to print the pre and post questionnaires and pens that will be used by the participants to complete the questionnaires.

Timeline

10/31/2010 – Participants will be welcomed to program. The basics of the study will be explained to participants, along with the risks and benefits associated with participation in the study. Pre-test will be administered to the participants

11/7/2010 to 12/12/2010 – Participants will participate in either the face-to-face program or the online program.

12/19/2010 – All participants will return to the face-to-face meeting location for a program debrief. Post-test will be administered to the participants.

Curriculum/Intervention

This study compared the satisfaction attained from cardiovascular disease prevention of two groups of participants that have received separate intervention treatments. Each group consisted of participants randomly assigned to either be in the face-to-face or online group. The groups will partake in a pre test that assesses the participants' understanding of cardiovascular disease prior to taking part in the intervention, and a post test that will assess the participants' understanding of cardiovascular disease after the intervention. The pre and post measured the inner group change in modality satisfaction to be compared to the other group for analysis and interpretation. The attendance and participation of each group will also be factors used to compare the level of satisfaction participants had for each presentation modality. The results will also provide insight into the participants' satisfaction level of being in either group.

Theoretical Framework

The Health Belief Model (HBM) will be the guide the development of the frame work behind the curriculum. The HBM "suggests that a person must feel susceptible to the disease in order to change his or her behaviors" (Winham and Jones, 2011, p.1). Although a change in

behavior is not measured in this project, participants will be informed of their risk factors and susceptibility to CVD in an attempt to affect future behavior change outside of the confines of the research project. Additionally, all six factors of the HBM will be addressed including perceived susceptibility, perceived severity, perceived benefits, perceived barriers, self efficacy, and cues to action. Self efficacy is also addressed as a sub problem and is measured in the pre and post questionnaires.

The curriculum consisted of an 8-week course that addressed cardiovascular disease prevention by utilizing exercise science and nutrition principles outlined by the Centers for Disease Control and Prevention (n.d.) and the American Heart Association (n.d.). As a prerequisite of the course it was mandated that all participants have home internet access. This allowed random assignment to groups. . Both groups discussed the same topics on a weekly basis, with the traditional class meeting once per week, while the online class will meet asynchronously throughout the week. Week 1 was used for course introduction and pre-testing, while Week Eight was used for debriefing and post-testing. There were four main outcomes addressed in the course to increase the cardiovascular disease knowledge of the participants.

Teaching Philosophy

This study will adopt the Empowerment Model that was endorsed by Funnell et al. (1991). Funnell et al. (1991) states that "the goal of empowering patients is to promote autonomous self-regulation so that the individuals potential for health and wellness is maximized" (p. 38). Increased health should not begin or end with this course, this course is a catalyst for continued increased health and wellbeing, and therefore participants will develop the necessary skills to continue their healthy journey far beyond the completion of this course.

Empowering participants will begin with allowing them to do take home activities that will let them see the class work in action in their own homes. Through the weekly handouts, class assignments and home assignments, participants will have a portfolio filled with resources to help them feel confident in maintaining a healthy lifestyle when the course is complete.

Teaching Strategy

The strategy that the researcher will implement will be to conduct the class as a discussion forum. The chairs will be set-up in a circle to allow everyone to be seen and feel on the same level. The researcher will not separate himself from the group and stand in the front of the class to give a lecture, but will instead sit with the group to allow participants to feel that they are all on the same level.

The discussion style will allow participants to talk freely and openly about topics. After a topic is brought up a brief intro will take place and the floor will be open for discussion, the researcher will act as a moderator and be available to steer the conversation in the right direction and ensure that the conversations stay on topic.

Delivery Format and Learning Environment

The program will be administered over two presentation modalities or delivery formats. The first is a traditional face-to-face format that will meet at the host facility, Flat Rock Missionary Baptist Church. The second delivery format will be online and will be accessible where ever the participant accesses the internet.

The two groups will differ primarily in their presentation modality, but interaction will be similar, excluding face-to-face interactions, which will not be present in the online format. Similarly, there will be aspects of the online course that will be absent in the face-to-face course,

like flexibility in interaction times. There will be similarities in the two formats, including homework, handouts/printouts, and visual presentations.

The study will utilize the church format as a tool to help participants associate with the material a little easier. The program incorporates faith-based ideas into the health education curriculum and this can be noted under the instructional activities heading. The significance of utilizing faith-based ideas is to incorporate familiar ideals into health topics. With faith being the guiding force behind many of the beliefs of the participants, Bible verses that discuss nutrition and fitness principles open the lines of communication around topics of cardiovascular health and wellbeing.

Course Description

This course is designed to increase cardiovascular disease risk factor prevention knowledge in participants, through the dissemination of health education information and participation in health promotion activities.

Course Expectations

At the conclusion of this course the participants will be able to identify their CVD risk factors. Participants will be able to identify resources to assist them decrease their risk factors. Participants will o monitor their health and distinguish between healthy and unhealthy habits related to decrease their CVD potential risk.

Learning Goals

The ultimate goal of the CVD prevention program is to provide participants with the knowledge of how to decrease their CVD risk factors. The resources provided to participants during the program are easily accessible, and will blend seamlessly into the participant's

lifestyle, because they will be identified by the participants during the 8-week course.

Learning Objective

The objective of this program is to help participants gain a better more and complete understanding of CVD prevention techniques. The course will raise the knowledge level of participants during the 8-week course through implementing newly learned CVD prevention techniques on their environment. With a delicate combination of theory and practice, participants will complete the program better prepared to decrease their CVD risk factors.

Learning Outcomes

In outcome number one, participants decreased their CVD risk factors through prevention of unhealthy activities; in this outcome participants learned common diseases associated with CVD. In outcome number two, participants decreased their CVD risk factors by following healthy nutrition guidelines; this outcome will help participants comprehend daily nutrition requirements and identify appropriate individual daily meal requirements. In outcome number three, participants will decrease their CVD risk factors through incorporating exercise techniques; through this outcome participants will learn daily activity requirements and identify appropriate individual daily activity requirements. In the fourth outcome, participants will decrease their CVD risk factors through treatment of CVD associated disease; in this outcome participants will identify treatment options for CVD associated diseases.

Audience Description

The audience will be African American adult men and women. These participants will not have advanced knowledge of CVD or its associated risk factors or prevention techniques. The participants in this study will all be members of Flat Rock Missionary Baptist Church, so

they will be familiar with scriptures in the bible and will be accustomed to using the bible and religion to address certain social issues.

Societal Factors

The participants will all be African American and members of a predominantly African American church. The researcher has also built a strong professional and personal relationship with the pastor of the church. The researcher, who is also African American, will be introduced to the congregation by the pastor as a close personal friend. This personal endorsement by the pastor will help the researcher be more readily accepted by the congregation.

Syllabus

The course syllabus outlines the course outcomes, objectives, instructional activities and student assessments for the 8-week program. As mentioned in previous sections in this chapter, the information covered in both the face-to-face and online formats is identical, so the above course syllabus will be used for both formats.

The schedule below represents the eight-week program that participants will go through in order to increase their knowledge of cardiovascular disease.

Table 1: Program Schedule

Week	Outcomes	Objectives	Instructional Activities	Student Assessments
1		Comprehend purpose of the course	**Activity 1**: Explain course expectations and outcomes to participants. **Handouts**: Syllabus Handout	Pre Program Assessment
2	Participants will increase their CVD	Identify CVD risk factors	**Activity 1**: Instructor led "CVD Risk Factors" presentation. *Proverbs 4:23* discussion.	**Discussion**: Why is nutrit important to CVD preventio

	risk factors knowledge through prevention of unhealthy activities		**Handouts**: What causes CVD? - handout, for self-study **Homework**: Participants will identify which unhealthy activities they participate in that will increase their risk for CVD	**Assessment**: Assess particip understanding of the import healthy nutrition for CVD prevention, through group discussion.
3	Participants will increase their CVD risk factors knowledge by following healthy nutrition guidelines	Comprehend how food can affect CVD	**Activity 1:** Instructor led "Cholesterol & Blood Pressure" presentation. *1 Corinthians 10:31* discussion. **Handouts:** Cholesterol & Blood Pressure handouts **Homework:** Participants will get their blood pressure checked by their doctor/at pharmacy/or fire station	**Discussion:** How can foll nutritional guidelines help i prevention? **Assessment:** Assess particip understanding of the import following nutrition guidelin CVD prevention, through gr discussion.
4		Identify appropriate individual daily nutrition requirements	**Activity 1:** Instructor led " Micro/Macro Nutrients, Processed Food & Calorie Intake" presentation. *Isaiah 55:2* discussion. **Handouts:** Nutrition Label, Food Pyramid Handout & Sample meal plan handouts **Homework:** Participants will design a healthy one day meal plan, consisting of 3 meals and	

			two snacks	
5	Participants will increase their CVD risk factors knowledge through incorporating exercise techniques	Comprehend daily activity requirements	**Activity 1:** Instructor led "Importance of exercise" presentation. *1 Corinthians 6:19-20* discussion. **Handouts:** Physical Activity Requirement handout **Homework:** Participants will identify ways to incorporate fitness into their day	**Discussion:** What is the p of exercise in CVD preventi **Assessment:** Assess particip understanding of the import exercise for CVD preventio through group discussion.
6		Identify appropriate individual daily activity requirements	**Activity 1:** Instructor led "Cardio and Resistance training" presentation. *Romans 12:1* discussion. **Handouts:** Sample workout handout **Homework:** Participants will create a workout	
7	Participants will increase their CVD risk factors knowledge through treatment of CVD associated disease	Identify treatment options for CVD associated diseases	**Activity 1**: Instructor led "How to treat CVD associated disease" presentation. *2 Corinthians 7:1* discussion. **Handouts:** CVD treatment handout for self-study	**Discussion:** What is the p of CVD prevention? **Assessment:** Assess particip understanding of the import CVD prevention, through gr discussion.
8		Comprehend purpose of the	**Activity 1**: Debrief participants	Post Program Assessment

		course	**Activity 2**: Question and Answer period	

Method of Evaluation

Participant Assessments

Both the instructional activities and assessments offer participants an opportunity to create a universal understanding of the information. Through group discussions and take home activities participants are able to examine how their lives can be positively affected by incorporating healthier habits into their daily routines. Participants are encouraged to interact with each other during class time and ask questions from the instructor to clarify topics.

Evaluation Instrument One

The first tool will be the pre-test and post-test. The pre-test and post-test, will be used to compare the level of information able to be relayed during the respective courses. Participant's responses to these tests will give the researcher a better idea as to whether the information was relayed effectively during the 8 week course.

Evaluation Instrument Two

The second tool will be the attendance sheet for the face-to-face course and the participation log from the online course. The attendance sheet will help the researcher compare how satisfied the participant was with the competing presentation modalities.

Standard Operating Procedures (SOP) and Policies

Assumptions

- Participants in this study will be members of Flat Rock Missionary Baptist Church in Piedmont, South Carolina.
- Participants in this study will have home based internet access.

- Participants in this study would not have participated in previous CVD educational intervention programs.

Maintaining Best Practices

The standard operation procedures (SOPs) created during this program will help develop an easy to follow format for duplication and expansion of this area of research. I have identified five SOPs that can be utilized in order to successfully conduct similar research on cardiovascular disease and African Americans in the future.

1. Foster a strong relationship with the faith-based organizations leader, because this person will add validity to your presence at the organization.
2. Acknowledge the varying levels of expertise and comfort with technology and provide all participants with a beginners' tutorial of the online format, in order to eliminate or decrease the digital divide.
3. Take advantage of the cultural aspects of the population by tying in religious components into the health education material in order to relate the information to familiar topics.
4. Keep participants engaged by creating take home assignments that keep the topics fresh throughout the time while they are away from class.
5. Create multiple types of assessment for participants, in order to accommodate various learning styles of the participants.

Recommendations for Future Research

Future research in this area should further investigate participant's perceptions of CVD prevention program mediums. Working with a population as diverse as the African American community my population does not fully encapsulate every characteristic within the

demographic. Future comparisons could be location (rural vs. urban), education level of participants, previous experience with a computer class, the age of participant's, the participant's gender, and religious influence in program.

The location of the populations could be compared. This would require the comparison on different groups of participants located in at different facilities. Education level can play a role in the way that the participant views and understands the information presented in the class. Depending on the education level the participant may not feel comfortable participating in certain presentation mediums. Previous experience with a computer class would certainly affect the participant's acceptance of the online component of the course. The age of participant's would offer interesting commentary as this would add to the conversation of age and technology. Similar to the age of a participant, gender would also be an area that would yield intriguing results about biological characteristics and how they play a role in participant preference in presentation mediums. The religious factor can also be manipulated to see if participants are influenced by religious tones incorporated into the presentations.

Chapter 4: Discussion

Cardiovascular disease results in increased healthcare costs, decreased work productivity, and unnecessary loss of life. Cardiovascular disease is a burden on our societal infrastructure. This dissertation addressed health education alternatives to help decrease the burden of cardiovascular disease on the African American community. Face-to-face interaction is the traditional method of providing health education services to communities. Face-to-face interactions offer the opportunity to increase the social interactions necessary to offer support to participants. White and Dorman (2001) noted that participation in social support groups "enhance quality of life, improve decision making and increase survival time" (693). However, research has also shown that there are also benefits of working in online groups such as, asynchronous communication.

Researchers have noted that "with asynchronous communication, participants in online groups have access 24 hours a day, 7 days a week" (White & Dorman, 2001, p. 694). This convenient feature of online groups brings about an opportunity to reach members of society that are often unable to attend face to face meetings due to "mobility problems, speech and hearing difficulties or care-giving responsibilities" (White & Dorman, 2001, p. 694).

Statement of Problem

The problem addressed in this research was the disproportionate representation of African Americans as cardiovascular disease cases in the United States. Common methods for reaching African Americans do not take advantage of the cultural aspects of the population, specifically community faith-based organizations. This study reviewed best practices of cardiovascular disease prevention programs, and conducted research on alternative means of

presenting and teaching cardiovascular disease prevention to African Americans at a faith based organization.

Over eight weeks the researcher implemented an intervention program that compared the degree of satisfaction associated with participation in an online and traditional health education program for cardiovascular disease prevention for African American adults at a faith-based organization in Piedmont, South Carolina.

Sub problems

The study addressed the following sub problems:

1) Does participation in an online intervention program increase the ability of a participant to maintain attendance during a cardiovascular disease intervention program?
2) Does participation in a face to face, traditional, intervention program increase a participant's self efficacy towards their perceived ability to change their cardiovascular disease risk factors?

Results

There were 34 participants in this study, all of which participated in both the pre and post tests. One hundred percent of the population were members of Flat Rock Missionary Baptist Church in Piedmont, SC, and resided in the general area of Piedmont, SC. Participants were randomly separated into either the face to face or online group.

Participants were not compensated for their involvement in the study nor were they penalized for not participating. The lack of incentive was instrumental in evaluating the first sub problem associated with participant attendance. Attendance at face to face and online classrooms was voluntary and completely at the will of the participants. During this research

project participant attendance, in both the face to face and online intervention programs, was tracked. Participation in the face to face program was directly related to attendance at the weekly meeting, while participation in the online program was measured by a single post during a seven day week which constituted attendance for that week. Participants were not rated on the content or quality of their participation, but rather the quantity of their participation.

The face to face program maintained 75% attendance, while the online group maintained 72% participation throughout the course of the study. The face to face group had an average attendance of six days per person, with a maximum attendance of eight days (two people), a minimum attendance of four days (two people) and the most common attendance rate was six days (seven people). The remaining six participants had attendance rates of five days (three people) and seven days (three people).

The online group average attendance rate was 5.76 days, with a maximum attendance rate of eight days (two people), a minimum attendance rate of four days (one person), the most common attendance rate was five days (seven people). The online group had six people that maintained attendance for six days and one person that had seven days of consistent attendance.

Week 1 - Discussed the program and all study participants took pretest. Week 1 saw 100% attendance with seventeen individuals in the face to face group and seventeen individuals in the online group.

Week 2 - Showed a decrease in both face to face and online group attendance, with 65% percent attendance in face to face and 65% in online attendance.

Week 3 - Attendance showed a marked increased in face to face attendance with 88%, while there was only a minimal increase in online attendance to 71%.

Week 4 - Attendance decreased in face to face to 71% and 53% in online attendance.

Week 5 - Attendance in the face to face group showed a steady decline in week 5 as the attendance percentage was at 52% while participation in the online group rose slightly to 59%.

Week 6 - Both groups increased attendance in week 6 to 65% and 76% for the face to face and online groups, respectively.

Week 7 - Saw a decline in attendance in the face to face group to 59% as well as a decrease in the online group to 53%.

Week 8 - Similar to week 1, week 8 attendance peaked at 100%, as all participants were onsite to take their post test and get debriefed on the program. The sudden dramatic increase of week 8 attendance could be accounted for by the personal plea from the church pastor, during church service the week before and the week of the final class, to members of the program to attend the final class to complete the program.

The second sub problem discussed self efficacy of the participants as it relates to their perceived ability to change their CVD risk factors. Results were compared from the pre and post test to measure participant self efficacy.

There were seventeen questions on the pre test (2, 3, 4, 7 ,8 ,9 ,10 ,11 ,12 ,13 ,14 ,15 ,16 ,17 ,18 , 19 and 20) and seventeen questions on the post test (2, 3, 4, 7 ,8 ,9 ,10 ,11 ,12 ,13 ,14 ,15 ,16 ,17 ,18 , 19 and 20) that measured self efficacy. Participants rated the question on a scale of 1 to 5, with a score of 5 being preferable and related to a high degree of self efficacy. The questions were split with the first 10 questions using the following Likert scale 1 (strongly disagree), 2 (disagree), 3 (neither agree nor disagree), 4 (agree), 5 (strongly agree); and the next ten questions used the following Likert scale 1 (never), 2 (occasionally), 3 (seldom), 4

(frequently), 5 (always).

Average pre test scores for face to face participants on self efficacy rated questions were 2.88; the online participants had an average score of 2.90 on the same group of questions. Pre test scores were compared to the post test scores of the 3.87 and 4.08 for the face to face group and the online group respectively. The results indicate that both groups made positive increases in their answers to efficacy rated questions, with the face-to-face group showing a positive change of .99 and the online groups showing a positive change of 1.18.

Overall satisfaction of the program was measured with the satisfaction supplement section of the questionnaire. There were 10 questions in this section, with 3 questions measuring the availability of the program (28, 29 and 30), 3 questions measuring the usefulness of the program (22, 25 and 27) and 4 questions measuring how understandable the program was (21, 23, 24 and 26). The combined responses to this group of questions were used to measure participant satisfaction with the program and their respective medium. Participants used a 5 point likert scale, with 5 being the highest score and representing a favorable satisfaction rating. The likert scale utilized the following rating system, 1 (strongly disagree), 2 (disagree), 3 (neither agree nor disagree), 4 (agree) and 5 (strongly agree).

Results from the satisfaction survey showed high levels of satisfaction, with the program, in both groups. The face to face group average satisfaction rating was 4.61 while the average satisfaction rating for the online group was 4.64. These results mirrored the negligible difference of comparative scores through out all measurement criteria.

Although comparative results from the within group pre and post were favorable and satisfaction survey showed positive results between groups the t-tests and associated p-values

were not as positive. Both the pre and post test for the face to face and online group yielded a *p*-value of 1.00, which means that the results are not statistically significant. While the t-test for the comparison of the satisfaction survey was 0.7427 and yielded a *p*-value of 0.4631 which was not statistically significant.

Implications of Findings

This research project required a high level of interaction with community members to increase participant-researcher trust, participant attendance and participant satisfaction. Below we discuss the standard operating procedures that were introduced in chapter 3.

1. Foster a strong relationship with the faith-based organizations leader, because this person will add validity to your presence at the organization.

Members of the community must trust the researcher to use the information collected for research purposes only, to provide up to date information on cardiovascular disease, to answer questions truthfully and in a timely manner.

In standard operation procedure number one the emphasis is on creating a strong relationship with the faith based organization leader. This individual has already built a strong rapport with the members of the faith based organization; using this already existing connection is advantageous as it will allow the researcher to decrease the time needed to gain the trust of the population.

The positive connection between the researcher and the faith based organization leader can benefit the research project because the faith based organization leader will speak positively of the research program to their followers. Additionally, the positive association between the researcher and the faith based organization leader will allow the potential participants to view the

program positively without a spoken endorsement. Ultimately this positive association between the two individuals has increased the validity of the program, which affected initial and continued participation in the research program.

The connection between the faith based organization leader and the researcher was seen in the 100% week 8 attendance and post test participation. During the week before the last week and the day of the last class a personal appeal was made by the pastor to ensure that all participants in the study were in attendance on the last day of the program.

2. Acknowledge the varying levels of expertise and comfort with technology and provide all participants with a beginners' tutorial of the online format, in order to eliminate or decrease the digital divide.

The use of technology was a key component in this research project. Half of the participants went through a technological component that required use of a personal computer. The digital divide has decreased over the years but there are still individuals in our society that are uncomfortable with using technology. All steps must be taken to eliminate the digital divide as a restrictive factor.

The second standard operating procedure addresses the need to have all participants have a minimal level of comfort with using technology. The creation of a tutorial of the online classroom will help increase the comfort level of participants in the online group. Participants in the online groups will come into the program with their own level of knowledge and expertise of how to navigate the internet and operate with online tools. By creating an online tutorial the researcher allows for participants to decrease the digital divide and create a similar user experience with the online aspect of the research project.

3. Take advantage of the cultural aspects of the population by tying in religious components into the health education material in order to relate the information to familiar topics.

Working with a faith based organization offers the unique opportunity to connect to the participant's strong belief in religious ideologies. The benefit of utilizing this information is that the participants are familiar with the information and will be more inclined to understand the health education topics when associated with the religious teachings.

4. Keep participants engaged by creating take home assignments that keep the topics fresh throughout the time while they are away from class.

A crucial aspect of the participant experience was level of engagement. If participants do not feel engaged they will lose interest in the program and they will not reach the level of topic understanding desired by the researcher. In both the online and face to face programs, there were follow-up activities to support the lecture topics while the participants were at home.

The supporting activities were to be done at home and included task such as creating a healthy meal plan and identifying unhealthy activities that they perform during the week. These activities reinforced the lecture and discussion topics while helping the participants create a better understanding of the material by become immersed in the topics. The degree to which these activities affect the participants will be tracked in their degree of self efficacy change as measured in the pre and post tests.

5. Create multiple types of assessment for participants, in order to accommodate various learning styles of the participants.

In order to create a rewarding experience for all participants, the various learning styles

of visual, auditory and kinesthetic should be taken into account for course and assessment development. Visual learning was accounted for in handout and pre and post test. Auditory learning was accounted for in the group discussion format. Kinesthetic learning was addressed in homework assignments that required the implementation and manipulation of lecture topics.

Recommendations for Further Research

Further research in this area should investigate the following three factors:

1. How the relationship between the pastor and the research, as perceived by the congregation may affect participation levels of the population.
2. How religion plays an affect on the self efficacy of participants before and after the program.
3. How the frequency of interactions between the participants and the researcher in a face to face group would affect satisfaction of group members.

Summary

The research conducted in this study provided insight on the satisfaction level of African American participants of a face to face intervention group and an online intervention group. The sub problems in this study discussed self efficacy and participant attendance.

The groups participated in intervention programs that were similar in their content but unique in their delivery format. Participants were guided through the eight week program by the researcher. During the program participants were introduced to nutrition and fitness protocols to address cardiovascular disease prevention.

Measurement of satisfaction and self efficacy were conducted utilizing the pre and post test, while attendance was measured using the attendance sheet, for face to face participants, and

one post per week constituted participation in the online group. The results compiled from each group showed negligible separation of scores, which could be a by-product of the relationship between the church leader and the researcher or the religious messages intertwined with the material; these topics could be addressed in further research.

Overall participants were very satisfied with their interactions with the researcher and the relevance of the material. Participants in both groups also showed an increase in self efficacy as displayed in the scores of the pre and post tests. The third factor of attendance was relatively similar between groups and showed consistent interest in the program regardless of the medium being used.

This research attempted to address cardiovascular disease prevention in the African American community through a traditional face to face and an online medium. Although this research was not able to support a definitive edge for either educational medium, the results do offer hope for the use of alternative media when educating the African American community about health related topics. Alternative mediums offer an opportunity to reach populations that are often not able to participate in traditional health education programs. Creating programs that are more cost effective, convenient and engaging will help address the needs of more of the whole affected population and not just the few that are able to access the resources.

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Appendix

Appendix A

Pre test

Pre-test – Cardiovascular Disease Intervention Program for African American Adults

For questions 1-10 please use the following scale to answer each question:

1 Strongly Agree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

___1- Maintaining a healthy lifestyle is important to me
___2- I know the difference between cardio and resistance exercise
___3- I know my individual calorie requirements
___4- I am able to calculate my max heart rate
___5- My friends would consider me to be healthy
___6- I find food labels hard to understand
___7- I know how to identify foods high in cholesterol
___8- I know how to increase my HDL numbers
___9- I know what exercises will help me manage my cardiovascular health
___10- I know the difference between micro and macro nutrients

For questions 11-20 please use the following scale to answer each question:

1 Never	2 Occasionally	3 Seldom	4 Frequently	5 Always

___11- I make half of the grains I consume whole grain
___12- I participate in 30 minutes of physical activity for 30 minutes a day
___13- I eat lean protein products
___14- I read food labels on products before purchasing them
___15- I consume the appropriate amount of water throughout the day
___16- People come to me for advice about being healthy
___17- I create a daily meal plan to help me meet my calorie requirements
___18- I do not add salt to my food after it is prepared
___19- I prefer fried food over baked foods
___20- I have a serving of vegetables with each meal

Appendix

Appendix B

Post test

Post-test – Cardiovascular Disease Intervention Program for African American Adults

For questions 1-10 please use the following scale to answer each question:

1 Strongly Agree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

___1- Maintaining a healthy lifestyle is important to me
___2- It is important for me to exercise to maintain a healthy cardiovascular system
___3- I know how to effectively manage my daily caloric intake
___4- I know how to check my heart rate during exercise
___5- My friends would consider me to be healthy
___6- Food labels are a great guide to help purchase healthy foods
___7- I avoid foods that are high in cholesterol
___8- I know how to decrease my LDL numbers
___9- When I exercise I am conscious of what I need to do to meet my daily requirement
___10- I know the difference between micro and macro nutrients

For questions 11-20 please use the following scale to answer each question:

1 Never	2 Occasionally	3 Seldom	4 Frequently	5 Always

___11- I make half my grains whole grain
___12- I participate in 30 minutes of physical activity for 30 minutes a day
___13- I shop for lean meat products
___14- I use food labels to help me manage my nutrient intake
___15- I consume the appropriate amount of water throughout the day
___16- I offer advice to my friends and family about healthy activities
___17- I create a daily meal plan to help me meet my caloric requirements
___18- I do not add salt to my food after it is prepared
___19- I bake my fish and poultry products
___20- I have a serving of vegetables with each meal

For questions 21-30 please use the following scale to answer each question:

1 Strongly Agree	2 Disagree	3 Neither Agree nor Disagree	4 Agree	5 Strongly Agree

___21- I found the material easy to understand
___22- The instructor was knowledgeable on the topics discussed
___23- The instructor helped me understand the material discussed in class
___24- I believe that the course material was easy to understand

___25- I believe that the information discussed in class was useful
___26- I found the format of the class easy to follow
___27- I believe that the course material can be applied in my everyday life
___28- The course length was appropriate for the topics discussed
___29- I believe my questions were answered timely and appropriately
___30- My instructor was accessible to address any of the concerns