Effectiveness of a Community-Based Healthcare Worker Cancer Prevention and Referral Program in an Uninsured/Underinsured Minority Community

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PART I: DNP PROJECT PROPOSAL

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Abstract

Introduction/Purpose:

Cancer is a leading cause of death in the United States. Healthcare disparities contribute to increased cancer prevalence among vulnerable populations. Strategies to fight cancer, such as use of a community-based healthcare worker (CBHW), is an innovative way to decrease cancer healthcare disparities. The purpose of this project was to evaluate effectiveness of a CBHW cancer prevention and referral program in an uninsured/underinsured minority community.

Methods:

A prospective pre-/post-intervention design was used. Participants attended once weekly 60-minute virtual education sessions conducted by a CBHW. Pre-/post-intervention survey data pertaining to knowledge of cancer prevention (health literacy), the number of due/overdue cancer screenings, and the number of positive cancer screen participants referred and connected to the appropriate cancer care/treatment were compared at the end of an 8-week period.

Results:

Results revealed a statistically significant improvement in participant knowledge of cancer prevention ($p < 0.05$) at the end of the 8-week period, but a statistically significant improvement was not seen in preventative cancer screenings ($p = 0.104$). None of the participants reported a positive cancer screening or the need to be referred to the patient navigator, therefore, zero referrals were made during the 8-week period.

Discussion:

The CBHW intervention led to improved knowledge of cancer prevention, but minimal improvement was seen in preventative cancer screenings among participants.

Keywords: cancer, community-based health worker, uninsured, underinsured, minority communities

Effectiveness of a Community-Based Health Worker Cancer Screening and Referral Program in an Uninsured/Underinsured Minority Community

In the United States, cancer is one of the leading causes of death (American Cancer Society Cancer Action Network [ACS CAN], 2017). Various types of cancers have created a cumbersome burden of cost in the United States (ACS CAN, 2017). In 2014, there was approximately $87.8 billion spent in the fight against cancer with close to $4 billion paid by the patients (ACS CAN, 2017). The patient cost can be decreased by providing better access to care/medical insurance which will aid in the prevention of cancer and early cancer diagnosis (ACS CAN, 2017). Some cancers are preventable while other cancers are not which makes early detection a crucial facet in the battle against cancer (Bellhouse et al., 2018). This project focused on improving cancer prevention in an underinsured/uninsured minority community through the utilization a community-based healthcare worker (CBHW).

Background

During 2014-2018, only six North Carolina Counties out of 100 were below the United States combined types of cancer death rates and/or trends, and Lee County was amongst those counties that had higher cancer death rates and/or trends (National Cancer Institute, 2020). The North Carolina incidence rate of the combined types of cancers is also higher than the United States rate (National Cancer Institute, 2020). In 2017, North Carolina's incidence of various cancer cases was: breast (10,698), prostate (7,432), colorectal (4,291), and cervical (364) (North Carolina Central Cancer Registry, 2017). In 2021, the projected new cases for these same cancers exhibited increased numbers: breast cancer (11,761), prostate (8,055), colorectal (4,900), and cervical (414) (North Carolina Central Cancer Registry, 2021).

Unhealthy Behaviors

High rates of unhealthy behaviors such as smoking, obesity, physical inactivity, and excessive drinking contribute to the prevalence of cancer (Centers for Disease Control [CDC], 2018). Approximately nine out of every 10 lung cancer cases are attributed to smoking tobacco products (CDC, 2019). Excessive alcohol has been associated with the increased chance of the development of mouth, throat, larynx, esophagus, colon and rectum, liver, and breast cancer (CDC, 2019). The elevated percentage rates of unhealthy behaviors of the residents in Lee County, North Carolina include smoking (17%), obesity (33%), physical inactivity (24%), and excessive drinking (17%), which are all considerably higher than the top United States performers (County Health Rankings & Roadmaps, 2020).

Social and Economic Factors

Lee County's social and economic factors are all significantly worse than the United States top performers. Such factors include Lee County's high school graduation rate (89%), some college education (59% - just over half the population), child poverty (23%), and income inequality (4.5%) (County Health Rankings & Roadmaps, 2020). Other metrics considerably worse in Lee County than the United States top performers include the uninsured rate (15%), mammography screening rate (45%), limited access to healthy foods (5%), diabetes prevalence (11%), poor or fair health (19%), and poor physical health days (4.1) (County Health Rankings & Roadmaps, 2020).

Low Health Literacy

Low health literacy is associated with many factors. Factors such as minority status, low socioeconomic status, and underserved status are associated with low health literacy (Health

Resources & Service Administration [HRSA], 2019). Other factors that are associated with low health literacy include low educational skills, cultural barriers, and the use of medical jargon by medical professionals (HRSA, 2019).

Non-Hispanic Blacks

Non-Hispanic blacks have a higher death rate for most cancers in comparison to any other racial/ethnic group in the United States (DeSantis et al., 2019). In North Carolina, non-Hispanic blacks make up 22.2% of the state's population and 20.1% of Lee County's population (United States Census Bureau, 2020). Thus, these vulnerable North Carolina residents are at increased risk of death due to cancer.

Vulnerable Populations

The lack of appropriate cancer prevention education, cancer screenings, and access to healthcare are contributing factors to untreated/late detection of cancers in vulnerable populations (Bellhouse et al., 2018). Vulnerable populations need assistance with understanding the connection of unhealthy behaviors and health status, the management of health conditions, and the correct way to take medications (Kim et al., 2016). Vulnerable populations also need access to available healthcare screenings in the prevention/early detection of various diseases and assistance with navigating the healthcare system (Kim et al., 2016). Strategies such as identifying patients with low health literacy, providing detailed patient medical instructions, and using appropriate teaching methods for this population are imperative to decreasing health disparities (HRSA, 2019).

Community-based Health Workers

Community-based health workers can provide needed assistance to vulnerable populations. The CBHWs are in tune with the community members. They have better insight

into the culture and factors that impact the community's concept of health and the use of healthcare services (Kim et al., 2016). The CBHW are trusted members of their community because they share commonalities such as geographical location, language, life experiences, and ethnicity (Kim et al., 2016). The CBHWs are trained and possess the ability to bridge the gap by providing healthcare information/education to community members, being an advocate between the community members and healthcare professionals, and connecting community members to healthcare resources/access to care in a timely manner (Kim et al., 2016).

American Cancer Society Guidelines

The following preventative screening guidelines are from the American Cancer Society (ACS CAN, 2017):

- The average risk females should start yearly mammograms between the ages of 40 to 45.
- Females at average risk should have a Pap smear every three years from the ages of 21-29, and females age 30 and older should have a Pap smear and human papillomavirus (HPV) every five years or a Pap smear every three years.
- Prostate cancer screening discussion should start at age 40 and screening starting at age 45 for some high-risk men (e.g., African American men with a close family member who had prostate cancer before age 65).
- The recommended age for colon cancer screening is 45. High-risk persons (e.g., personal/strong family history of colorectal cancer, certain types of polyps, personal history of inflammatory bowel disease, known family history of a hereditary colorectal cancer syndrome, and/or a personal history of radiation to the abdomen or pelvic area to treat a prior cancer) should be screened before age 45.

Problem Statement

Cancer is a leading cause of death in the United States. In North Carolina, Lee County has a higher combined death rate in comparison to the United States. The North Carolina cancer death rate is projected to increase in 2021. To approach the problem of increased cancer rates in North Carolina, this DNP project utilized a CBHW as a potential strategy to improve healthcare disparities (e.g., low health literacy and limited access to healthcare) among a vulnerable minority Lee County population.

Organizational "Gap" Analysis of Project Site

Many of the church members were not aware of the current cancer prevention/screening guidelines and did not fully understand the importance of making healthy lifestyle choices in the prevention/reduction of risks factors for various types of cancers. This project was appropriate for this population because the CBHW provided education on prevention/screening guidelines as well as the importance of making healthy lifestyle choices. According to Bellhouse et al. (2018), the use of the CBHW to deliver cancer prevention information and resources at the appropriate health literacy level, will potentially allow the church members to fully understand the healthcare information and improve their preventative healthcare screening compliance based on screening guidelines from the American Cancer Society. Additionally, implementation of a CBHW program will assist the church members to become more informed and make better healthcare decisions thus, theoretically resulting in a healthier population (Kim et al., 2016).

Review of the Literature

A search was conducted using terms such as cancer, community-based health worker, and chronic diseases. The PubMed database yielded 62 results with search words of community, based health worker AND cancer. The database yielded 72 results with search words of

community, based health worker AND chronic diseases. Only articles that focused on vulnerable and minority communities were included in the literature review. The included articles consisted of systematic reviews and randomized clinical trials. While there were differences and limitations of the studies, all of them support the use of CBHW in the improvement of vulnerable populations' health status.

Systematic Reviews

Bellhouse et al. (2018) and Kim et al. (2016) sought to determine if CBHWs were effective in achieving positive patient outcomes. Bellhouse et al. specifically reviewed the effectiveness of CBHW in the prevention/early detection of cancer. Kim et al. synthesized the cost-effectiveness of CBHW and the patient outcomes in cancer prevention and cardiovascular risk reduction.

Kim and colleagues (2016) found CBHWs to be a cost-effective model in the improvement of cancer prevention/screenings in low-income ethnic minority communities. These researchers reported that a contributing factor of late cancer detection in vulnerable populations was the lack of cancer prevention knowledge which included the completion of preventative cancer screenings. The CBHW services were developed based on the needs and values of the community members (Kim et al., 2016).

Bellhouse and colleagues (2018) revealed several important findings. Such findings included the following: (a) prevention and early detection were key in the fight to reduce the burden of cost, (b) early detection/prevention resulted in increased cancer survival rates, (c) the increased knowledge of cancer prevention improved the ability of the patients' primary care team to provide the most appropriate care in a timely manner, and (d) the use of CBHWs was effective in bridging the gap between members in the community and the healthcare

professionals in the office setting for better healthcare outcomes. In addition, Bellhouse and colleagues found that implementation of CBHW interventions yielded increased participant cancer screenings for breast, cervical, and bowel cancers in ethnic minority groups.

Randomized Clinical Trials

Various randomized clinical trials (RCTs) supported utilization of CBHWs to improve healthcare outcomes in low-income populations. Three RCTs were selected for this literature review. Kangovi et al. (2017) and Nelson et al. (2017) studied the effectiveness of CBHWs in low-income and uninsured/publicly insured participants with chronic diseases such as hypertension and diabetes. The study by Kangovi et al. yielded clinically significant reductions in hemoglobin A1C (HbA1c), weight, and systolic blood pressure with utilization of CBHWs. The Nelson et al. study revealed that implementation of a home-based low-intensity community health worker (CHW) intervention yielded clinically significant improvements for participants with a HbA1c greater than 10%. A comparison of the pre-/post-intervention mean HbA1c levels revealed a 1.23-point reduction. (Nelson et al., 2017). CBHWs in the community setting were not only able to positively impact cancer screening rates but also chronic diseases such as hypertension and diabetes (Nelson et al., 2017).

The third RCT included in this literature review focused on the effects of CBHWs in the Hispanic population. In this study, Thompson et al. (2017evaluated the effectiveness of a community health worker (promotora) intervention to improve cervical cancer screenings among a Latino ethnic group. The results yielded statistically significant improvements for participants who received the video and home-based education delivered by a promotora. A significantly higher number of women in the high-intensity intervention group (a home-based educational session plus video) had a Pap smear (53.4%) as compared those in the low-intensity intervention

group (video delivered to the home of participants) (38.7%; $P < .001$) and those in the usual-care group (34.0%; $P < .01$) at seven months post randomization (Thompson, et al., 2017).

Limits of the Studies

Each study discussed above had at least one limitation. In the Bellhouse et al. (2018) and Kim et. al. (2016) studies, many terms were used to describe CBHWs, and there was a possibility that not all relevant articles in the existing literature were extracted. One limitation of the Kangovi et al. (2017) study was that it took place in a single, urban academic medical center, so the results may not be generalized. The Nelson et al. (2017) study was underpowered due to the treatment effect size in the power calculations which was based on larger intervention effects. The study did not note any effects on secondary outcomes because the small number of participants limited the power of the study to detect changes in secondary outcomes in the group. One limitation of the Thompson et al. (2017) study was that some women may have received their Pap smear outside of the medical facility and the results would not have been captured by the medical record review. Also, the reviewed articles differed in the amount of training hours and supervision that the CBHWs received, the length of the CBHW program, and the number of program participants.

Evidence-based Practice: Verification of Chosen Option

The literature reviewed supports the need for this DNP project. This project involved implementing a cancer prevention/screening and referral program in an uninsured/underinsured minority community in Lee County, North Carolina. The PICO(T) question was: In a group of minority underinsured/uninsured community members, will the implementation of a CBHW program increase knowledge of cancer prevention (health literacy), cancer screening rates, and community access to care resources in an 8-week period of time?

Theoretical Framework or Evidence-based Practice Model

The social cognitive theory explains human behavior as a continuous shared interaction between cognitive, behavioral, and environmental stimuli as people do not function in isolation but rather collectively (Bandura, 2004). The prerequisite for change is the result of people having knowledge of their health risks and health benefits (Bandura, 2004). Low health literacy results in unhealthy lifestyle choices in addition to the lack of understanding how poor health choices impact health status (Bandura, 2004). Most human behavior is learned from observing others which facilitates individuals to develop their own behavioral actions/beliefs (Bandura, 2004). People are more likely to adopt a behavior if the results are positive and of great value to the individual (Bandura, 2004).

The social cognitive theory has been utilized in various training programs which align with the implementation of CBHWs to improve health literacy and preventative cancer screenings for the low-income and uninsured minority communities (Rural Health Information Hub [RHIhub], 2020). Using this theory, the CBHW provides cancer prevention education, screening options, and access to care for the participants. Participants who do not routinely complete preventative cancer screenings could learn/adopt positive cognitive and behavioral beliefs from the other participants and the CBHW.

Objectives, Goals, and Expected Outcomes

The goals of the project were to (a) increase knowledge of cancer prevention (health literacy), (b) increase cancer screening rates, and (c) increase community resources (access to cancer care/treatment) in a group of underinsured/uninsured minority Lee County community members. The objectives were to (a) implement a CBHW program, (b) track pre-/post-intervention measures, and (c) analyze pre-/post measures to determine program effectiveness.

The expected outcomes were (a) increased participant knowledge of cancer prevention (health literacy), (b) increased cancer screening rates, and (c) increased community resources (access to care/treatment) among participants.

Methods (Plan)

Project Design

A prospective pre-/post-intervention design was used to evaluate effectiveness of the CBHW program.

Project Site and Population

Works for Christ Christian Center, a predominantly African American church located in Lee County North Carolina, served as the project site. See Appendix A for the project site approval letter. Prior to the coronavirus (COVID-19) pandemic, the church offered weekly Sunday School sessions, Sunday Morning Worship Services, and Bible Study classes. There were approximately 450 church members of record. On a typical week, approximately 50-100 members attended Sunday School, and 350-400 members attended the Sunday Morning Worship Service. During the pandemic, the majority of the church members were attending services via virtual routes offered by the church pastor. The members' ages ranged from infancy to geriatric with at least half of the members' age ranging between 45-60 years old. Eligible participants were (a) members of the church, (b) attended at least one church service weekly, (c) were between the age of 21 and 75, (d) had the ability to agree to an informed consent, and (e) had the ability to attend the CBHW education sessions virtually via Zoom, a video conferencing service. Participants were excluded if (a) they were not members of the church, (b) did not attend at least one church service weekly, (c) were less than 21 or older than 75 years old, (d) lacked the ability to agree to an informed consent, and (e) lacked the ability to attend the CBHW education

sessions via Zoom. Based on the number of members who attended at least one church service on a weekly basis, the estimated number of participants was 50. The number of participants who would complete the program was estimated at 40.

A possible barrier to the project was the virtual education session format and the lack of internet/smart devices among potential participants. Due to the health threat of the pandemic and resultant public safety prevention measures that were instituted to decrease the spread of the coronavirus, only the virtual format could be used. Another barrier was scheduling the education sessions during a time that was most convenient for the participants and the CBHW. In overcoming this barrier, the CBHW and the participants discussed the best day/time to meet and scheduled the next session at the end of each education session.

Measurement Instruments

Participants completed a *Pre-Intervention Healthy Lifestyle Habits and Cancer Screening Survey* and a *Post-Intervention Healthy Lifestyle Habits and Cancer Screening Survey*. A Likert scale of 1 to 5 was used, with 1 being strongly disagree, 2 being disagree, 3 being neither agree nor disagree, 4 being agree, and 5 being strongly agree for items 1 through 6 on the *Pre-Intervention Healthy Lifestyle Habits and Cancer Screening Survey* and for items 1 through 11 on the *Post-Intervention Healthy Lifestyle Habits and Cancer Screening Survey.* Items 1 through 6 on both of these surveys were identical and pertained to participants' knowledge of cancer prevention/healthy lifestyle habits and cancer screenings. Items 7 through 11 on the post-intervention survey pertained to participants' perception of program effectiveness and satisfaction. The preventive screening portion of the surveys aligned with cancer screenings as recommended by the American Cancer Society for males and females at specific ages and time intervals, which aided in identifying pre- and post-intervention screening rates among

participants. The pre- and post-intervention surveys required approximately 10-15 minutes each to complete. See Appendix B and Appendix C for the pre-/post-intervention surveys, respectively.

Intervention (Do)

The principal investigator (PI) asked key leaders/stakeholders of the church to recommend a volunteer CBHW. The CBHW did not have to be in the healthcare field, but he/she had to at least be an individual who had experienced the effects of cancer to some degree, either personally or with family member(s), and expressed an interest in volunteering for the program.

For participant recruitment purposes, the project was announced during regular morning church services for three consecutive Sundays by the church's pastor. Additionally, the program announcement was posted on the church's bulletin board. Once potential participants were identified, the PI met the participants at the church and explained all aspects of the program to them on an individual basis. The risk, benefits, and notification of no alternative education offerings were discussed with the potential participants. Individuals who voluntarily agreed to participate were given a written informed consent which contained the risks, benefits, and notification of no alternative education offerings (Appendix D). Once the informed consent was signed, the PI gave the participants a written pre-intervention survey to complete.

Once the CBHW had been identified, the Duke Cancer Institute Office of Health Equity provided a trainer to train the CBHW. See Appendix E for the Duke Cancer Institute Office of Health Equity letter of support. The training consisted of four hours of one-on-one training with a focus on cancer prevention and the importance of preventive screenings. Evidence-based guidelines published by the American Cancer Society and the Centers for Disease Control were used. Chronic conditions such as hypertension and diabetes place individuals at risk for cancer

(Tu et al., 2018), so the training also included evidence-based information from the American Heart Association and the Diabetes Association. After the training was completed, the PI introduced the participants to the CBHW.

The CBHW provided a 60-minute education session via Zoom to participants on a weekly basis over an 8-week time period. While the sessions focused on cancer prevention and the importance of preventative screenings, the CBHW was able to discuss chronic conditions (e.g., hypertension and diabetes), as appropriate. During the sessions, the group was allowed to share positive healthcare experiences, beliefs, and desired goals. It was anticipated that the participants who were not current on preventative screenings would acquire new information and adopt healthier lifestyle behaviors they learned in the sessions. The CBHW encouraged the participants to self-report positive screenings and request a referral to the Duke Cancer Institute Office of Health Equity patient navigator.

The CBHW was able to connect the participants with due/overdue cancer screenings to appropriate healthcare agencies, such as the Lee County health department and other local facilities, in accordance with their pre- and post-intervention preventive cancer screening assessment results. The CBHW was responsible for reporting positive screenings to the patient navigator (if requested by the participant) and the PI. The patient navigator was available to assist the participants with navigating the healthcare system to ensure that cancer care/treatment was accessible/available.

The PI was responsible for implementing the program, administering pre-/post-intervention surveys, and tracking/analyzing measures to determine outcomes.

Data Collection Procedures/Sources

Pre- and post-intervention data was collected on (a) knowledge of cancer prevention

(health literacy), (2) the number of due/overdue cancer screenings, and (3) the number of positive cancer screen participants who were referred and successfully connected to appropriate cancer care/treatment by the Duke Cancer Institute Office of Health Equity Patient Navigator.

Data sources included the pre- and post-intervention surveys, participant self-reported positive screenings received by the CBHW and subsequently reported to the PI and patient navigator. The pre-/post-intervention survey data and any positive cancer screenings were collected by the PI. The pre-intervention results were collected via written format. The post-intervention results were collected electronically via Qualtrics, a cloud-based survey tool, due to the pandemic. The PI collected/maintained the pre-/post-intervention surveys for tracking the participants who requested a referral to the patient navigator pre-intervention and post-intervention.

Data Analysis (Check)

The pre-intervention surveys were manually entered into a Microsoft Excel spreadsheet using unique letter code identifiers for each participant. The post-intervention surveys were captured in Qualtrics and imported into a Microsoft Excel spreadsheet using the same unique letter code identifiers. The pre- and post-intervention survey results were imported into a SPSS software package. The quantitative data was evaluated using logical and analytical reasoning to carefully examine each component of the data. The pre- and post-intervention data was compared to determine the success of the desired goals of the project. The data was evaluated for trends over time by comparing the collected data at one point in time (pre-intervention) against the data that was collected at a different point in time (post-intervention). The data was also evaluated for expected and unexpected results. See Appendix F for additional details of the project goals.

Goal 1: Increased knowledge of cancer prevention (health literacy) was determined by comparing pre-/post-intervention survey results for Part I (items 1 through 6). These items assessed the participants' knowledge of cancer prevention and healthy lifestyle habits. Higher post-intervention mean scores for these items indicated increased knowledge of cancer prevention. The desired goal was to increase cancer prevention knowledge by at least 10%.

Goal 2: Increased cancer screening rates was assessed by comparing pre-/post-intervention cancer screening survey results for Part II (items 1 through 5). These items pertained to recommended cancer prevention screenings. Higher post-intervention mean scores for these items indicated increased cancer screening rates. The desired goal was to increase cancer screening rates by at least 5%.

Goal 3: Increased community resources (access to care/treatment) occurred by having the CBHW to give all of the participants' desired/requested referrals to the patient navigator. Access to care/treatment was determined by the number of participant desired/requested referrals for the patient navigator and the number of those referrals connected to a healthcare agency. The goal was that 100% of participants who desired/requested a patient navigator referral were successfully connected to a healthcare agency for cancer care/treatment.

Act

The project was assessed for areas of improvement. One area of improvement is restructuring of the pre- and post-intervention survey Part II cancer screening questions 2 and 3 because they were reportedly confusing to some participants. A second improvement identified was the need to use Qualtrics to capture pre- and post-intervention survey results because this online survey tool is user friendly and makes data managing easier. The findings of the project

were positive and were shared with the church leadership. The pastor and participants were appreciative of the information that was shared during the project.

Cost-Benefit Analysis/Budget

The cost of the project was minimal. The mean cost of a CBHW in North Carolina was $18.34/hours (U.S. Bureau of Labor Statistics, 2019). The project CBHW was a volunteer church member who led the education sessions free of charge. The typical mean hourly pay rate for health educators was $27.56 (U.S. Bureau of Labor Statistics, 2019). The trainer/educator received usual employment wages from the Duke Cancer Institute Office of Health Equality (no cost to the project). The mean hourly rate for patient navigators/community and social service specialists was $21.06 (U.S. Bureau of Labor Statistics, 2019). The patient navigator received usual employment wages from the Duke Cancer Institute Office of Health Equality (no cost to the project). Further, free educational material from the American Cancer Society, Centers for Disease Control, American Heart Association, and Diabetes Association was used for training the CBHW and the project participants. This project ultimately served as a community outreach program for the Duke Cancer Institute Office of Health Equality. The Cost-Benefit Analysis/Budget Table is shown in Appendix G.

Timeline

As outlined in Appendix H, the project proposal was approved in July 2020. The Institutional Review Board (IRB) approval was obtained in September 2020. The program was announced in the church for three consecutive Sundays beginning the second Sunday in September 2020. The CBHW was identified and trained by the middle of September. The program participants were identified during the first week in October 2020. Participant consent,

pre-intervention data collection, and the first CBHW led education session was conducted on October 7, 2020.

The education sessions continued until November 30, 2020, which was the end of the 8-week time period. At that time, the post-intervention data was collected. The data was analyzed in January 2021. The project outcomes (anonymous aggregate data only) were then disseminated via a power point presentation to key stakeholders, including the Duke Cancer Institute Office of Health Equity, project site (church) leaders, and the participants (community members).

Ethical Considerations/Protection of Human Subjects

The University of Alabama (UA) IRB approval was obtained prior to project implementation. All participants were protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). Survey data was collected from participants. Participants could skip any question(s) that made them feel uncomfortable, and they were allowed to stop the survey at any time. To withdraw from the project, the participant could simply notify the CBHW or PI and not attend any further sessions. If a participant wanted to withdraw after the project was over, that individual's data was excluded from the study and destroyed. There was no payment for participating in the project.

The risk of participation in the project was minimal and no greater than receiving the usual care without utilization of the CBHW program. The potential risk of participating in the project included the inconvenience of attending screenings not in the local area, the inconvenience of attending more doctor's appointments for follow-up care if a cancer screen was positive, and the overall time required to participate in the project. The benefits of the project included improved knowledge, completion of recommended cancer screenings, detection of positive cancer screenings, and access to treatment.

Unique identification letters for coding were assigned to participants when completing the informed consent and pre-intervention survey. The letter code was placed at the top of the participants' pre-intervention survey. Only, the PI had access to participants' names with their corresponding letter identifier pre-intervention survey. The participants' names and their corresponding letter identifier was needed to assess for a change in the participants' pre-and post-survey answers. The participants' names and letter identifier pre-intervention surveys were stored in a locked file cabinet which was located in a locked room belonging to the PI. When the study was completed, and the data was analyzed, the participants' name and corresponding letter identifier pre-intervention surveys were destroyed. No participant names were used in any data reports. The HIPAA secure UA Box (cloud storage) was used to store electronic files containing participant de-identified data/information. The data will be kept for three years.

Results

During the recruitment phase of the project, 21 African American church members volunteered to participate in the project. All of the volunteers completed the informed consent, but only 15 completed the pre-/post-intervention survey and completed the education sessions. The participant group consisted of five males (33.3%) and 10 females (66.7%) with a minimum age of 25 and a maximum age of 68.

The pre- and post-intervention surveys were grouped into Part I knowledge items and Part II cancer screening items. The participants' cancer prevention knowledge and healthy lifestyle habits collectively ($p < 0.05$) exhibited a statistically significant improvement. However, changes in the collective cancer screenings were not statistically significant ($p = .104$). (See Table 1.)

Table 1

Pre-/Post-Intervention Participant Knowledge and Cancer Screening Significance

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre-/Post-Intervention Participant Knowledge	-5.00000	2.53546	.65465	-6.40409	-3.59591	-7.638	14	.000
Pair 2	Pre-/Post-Intervention Participant Cancer Screening	.53333	1.18723	.30654	-.12413	1.19080	1.740	14	.104

Part I consisted of six items pertaining to knowledge of cancer prevention and healthy lifestyle habits. Additional items regarding participants' perception of the program were contained on the post-intervention survey. Before beginning the program, slightly over half (9, 60%) of the participants felt knowledgeable about cancer health topics. Upon completion of the program, all participants felt knowledgeable of cancer health topics with almost all of them (13, 86.7%) strongly feeling knowledgeable about cancer health topics (health literacy). The results showed that all participants were motivated to make lifestyle changes after the intervention. The participants' physical activity and nutritional health and their knowledge of the importance of making healthy lifestyle choices improved as well. At post-intervention only one participant (6.7%) still neither agreed/disagreed to planning to get preventative cancer screenings. Table 2 displays results of the pre-/post-intervention subsets of cancer knowledge, nutrition, and physical activity. All of these subsets revealed a statistically significant improvement ($p < 0.05$).

Table 2

Pre-/Post-Intervention Knowledge Subset Significance

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre-Intervention Knowledgeable about Cancer topics Post-Intervention Knowledgeable about Cancer topics	-1.467	.915	.236	-1.974	-.960	-6.205	14	.000
Pair 2	Pre-Intervention Motivated to make lifestyle changes Post-Intervention Motivated to make lifestyle changes	-.867	.834	.215	-1.328	-.405	-4.026	14	.001
Pair 3	Pre-Intervention Attention to what I eat Post-Intervention Attention to what I eat	-.667	.724	.187	-1.067	-.266	-3.568	14	.003

Pair 4	Pre-Intervention Physically active Post-Intervention Physically active	-.533	.915	.236	-1.040	-.026	-2.256	14	.041
Pair 5	Pre-Intervention Importance of making healthy lifestyle choices Post-Intervention Importance of making healthy lifestyle choices	-.733	.884	.228	-1.223	-.244	-3.214	14	.006
Pair 6	Pre-Intervention Plan to get cancer screenings Post-Intervention Plan to get cancer screenings	-.733	.704	.182	-1.123	-.344	-4.036	14	.001

Part II consisted of five questions pertaining to preventive cancer screening compliance. Results of the screening data are as follows: One participant who was eligible for a mammogram at pre-intervention had received one by post intervention. Three participants who were eligible for a Pap smear had not received one prior to the intervention, but two of them had received it by post intervention. Eight participants who were eligible for a Pap smear and HPV test had completed these screenings by post intervention. Two participants who were eligible for the

prostate screening had already completed it at pre-intervention. Finally, two participants were eligible for a colonoscopy, but neither of them had one by post intervention. Table 3 displays pre-/post-intervention results of the mammogram, Pap smear, and PAP/HPV screenings.

Table 3

Pre-/Post-Intervention Cancer Screening Subset Significance

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	Pre-Intervention During the past year have you had a mammogram to screen for breast cancer Post-Intervention - During the past year have you had a mammogram to screen for breast cancer	.067	.258	.067	-.076	.210	1.000	14	.334
Pair 2	Pre-Intervention During the past 3 years have you had a PAP Post-Intervention - During the past 3 years have you had a PAP	.133	.352	.091	-.062	.328	1.468	14	.164

Pair 3	Pre-Intervention During the past 3 years have you had a PAP and HPV Post-Intervention - During the past 3 years have you had a PAP and HPV	.200	.414	.107	-.029	.429	1.871	14	.082

On the post-intervention survey, participants' perception of program effectiveness and satisfaction of the program was measured. All of the participants either strongly agreed (13; 86.7%) or agreed (2; 13.3%) that the instruction received was effective, the instructor answered the questions effectively, and they enjoyed the project. All of the participants (100%) strongly agreed the instructor was knowledgeable about the cancer topics and the information was useful. In addition, all of the participants either strongly agreed (14; 93.3%) or agreed (1; 6.7%) that, overall, the program was effective.

Interpretation/Discussion

The CBHW project focused on topics such as breast, cervical, prostate, lung, and colorectal cancer, and nutrition and physical activity. In order to build upon the participants' knowledge base, the topics were presented in the order of lowest area of knowledge/cancer preventative screening compliance to the highest areas reported on the pre-intervention survey data. Every week the CBHW continued to build on the previously taught healthcare information in an effort to create a strong healthy lifestyle and cancer prevention knowledge foundation. The CBHW program led to statistically significant improvements in participant cancer prevention

knowledge and healthy lifestyle habits ($p < 0.05$). Consistent with the current body of literature, results of this project emphasize the importance of using CBHW to provide education in the improvement of health literacy.

In reviewing goal 1of increased knowledge of cancer prevention (health literacy) by at least 10%, the goal was met as all of the knowledge items on the post-intervention survey revealed significant improvement in comparison to the pre-intervention survey data. Goal 2 of increased cancer screening rates by at least 5% was not met in all of the preventative cancer screenings as noted in the colonoscopy screening post-intervention survey data which yielded zero percent improvement. Also, no change was noted in the prostate screening post-intervention survey data as the only two eligible participants had completed the screening pre-intervention. Goal 3 of increased community resources was unmeasurable as none of the participants self-reported a positive cancer screening and none of the participants desired/requested a referral to the patient navigator.

The CBHW project was hugely successful in the improvement of participant cancer prevention knowledge. However, it was minimally successful with increasing cancer screening compliance amongst participants. Overall the project was beneficial because the knowledge base of all participants did increase which is needed for making healthy lifestyle changes in the prevention of cancer. A large percentage of the participants strongly agreed that the program was effective which is reflective in their increased preventative cancer knowledge.

There were several limitations in this project. The first limitation was the small sample size of 15 participants. This small sample size was not a large enough representation of the targeted population group, thus causing the impact of the CBHW project to yield less significant data for the preventative cancer screening results. The second limitation was the implementation

of an all virtual format for the education sessions due to the pandemic. Utilizing a virtual format excluded potential participants who did not have access to technology to attend the virtual education sessions. Thus, face-to-face sessions may have yielded increased participation. Plus, the social cognitive aspect of in-person learning may have created a greater degree of improvement in cancer knowledge/preventative screening compliance as people function collectively in response to their continuous shared interactions with each other. The third limitation was most medical facilities were performing limited medical procedures during the course of the project which resulted in most preventative screenings being placed on hold unless absolutely necessary. The limited face-to-face care and preventative screenings may have negatively impacted the ability of some participants to complete preventative cancer screenings. Despite the limited face-to-face care, minimal improvements in preventative cancer screenings were observed.

The CBHW program is easily sustainable and will not result in a financial burden. The church's pastor is very supportive of educating the congregation and encourages the promotion of health and wellness. Additionally, the pastor of the church is in agreement with offering the CBHW program on a bi-annual basis with the class dates being added to the church's annual calendar of events. The CBHW is a member of the church and volunteered to continue to conduct the education sessions. The Duke Cancer Institute Office of Health Equality is a resource to all CBHWs of all counties, and they have quarterly follow-up meetings/trainings with the CBHWs to ensure they are aware of and are teaching the most up-to-date cancer prevention information. The CBHW will continue to utilize the pre-/post-intervention surveys for ongoing evaluation of the program.

Conclusion

In conclusion, cancer is a disease that strikes many Americans and results in significant healthcare cost. Some cancers are preventable/treatable with early detection. Many minority underserved/uninsured communities suffer from low health literacy, low cancer screening compliance, and lack of access to care.

Results of this project support the use of CBHWs to provide education to improve health literacy among minority populations. More research with larger sample sizes are needed to yield more significant data to support the utilization of CBHWs in the improvement of cancer screening compliance rates and access to care which could ultimately lighten the burden of care on the United States.

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Appendix A

Project Site Approval Letter

Works For Christ Christian Center

Dr. Lewis & Dr. Alice Hooker Pastors

June 10, 2020

Dr. Robin Lawson
The University of Alabama
Capstone College of Nursing
650 University Boulevard East
Tuscaloosa, Alabama 35401

Dear Dr. Lawson,
I grant Juanita Sparks permission to conduct her scholarly project at Works for Christ Christian Center.

I, Dr. Alice Hooker, possess full authority to grant approval for the scholarly project to be conducted at Works for Christ Christian Center.

The church currently does not have an Institutional Review Board office/process.

Sincerely,

Dr. Alice Hooker

Pastor Dr. Alice Hooker

1395 Firetower Rd.
Sanford, NC 27330
(919)-776-0072
(919)-776-9242 (Fax Number)
www.worksforchrist.org

Appendix B

Community-Based Health Worker Cancer Screening and Referral Program

Pre-Intervention Survey

Name: _____ Age: _____
First Middle Last

Cell Number: _____ Home/Alternate Number: _____
County of Residence: _____ Email Address: _____

Race: ___ Asian ___American Indian or Alaska Native
___ Black/African American ___ Native Hawaiian or Other Pacific Islander American
___ White ___ More than one race
___ Unknown

Ethnicity: ___ Hispanic/Latino ___ Non-Hispanic/Latino

Part I: Knowledge of Cancer Prevention and Healthy Lifestyle Habits

Please rate the following items that pertain to your knowledge of cancer screenings and healthy lifestyle habits.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I feel knowledgeable about cancer topics.	1	2	3	4	5
2. I feel motivated to make lifestyle changes.	1	2	3	4	5
3. I pay attention to what I eat.	1	2	3	4	5
4. I am physically activity.	1	2	3	4	5
5. I realize the importance of making health lifestyle choices.	1	2	3	4	5
6. I plan to get cancer screenings.	1	2	3	4	5

Comment(s):_____
_____

Part II: Pre-Intervention Preventive Cancer Screening Assessment

Please select the correct answer to the following questions regarding cancer screenings.

Females Only			
	Yes	No	Not applicable for my age
1. The recommended age for breast cancer screening for females is 40-45. During the past year, have you had a mammogram to screen for breast cancer?			
2. A Pap smear is a test to screen the cervix of females for cancer, starting at age 21-29. During the past 3 years, have you had a pap smear/test to screen for cervical cancer?			
3. At age 30 and older a PAP and HPV test should be started. PAP and HPV test is every five years or a PAP every three years. During the past 3 years, have you had a PAP or have you had a PAP and HPV in the last 5 years?			
Males Only			
	Yes	No	Not applicable for my age
4. Prostate cancer screening discussion should start at age 40 and screening starting at age 45 for some high-risk men (African American men with a close family member who had prostate cancer before age 65). Have you been screened for prostate cancer?			
Males and Females			
	Yes	No	Not applicable for my age
5. The recommended age for colon cancer screening is 45. High-risk persons (personal /strong family history of colorectal cancer /certain types of polyps, personal history of inflammatory bowel disease, known family history of a hereditary colorectal cancer syndrome, and /or a personal history of radiation to the abdomen or pelvic area to treat a prior cancer) should be screened before age 45. Have you had a colonoscopy to screen for colon cancer?			

Would you like to be referred for cancer screening(s)? ___ Yes ___ No
What type of cancer screening(s) do you desire? _____
If your cancer screening is positive, do you want to be referred to the patient navigator to help guide you through the healthcare system to receive cancer care/treatment? __ Yes __ No
Comment(s): _____
_____

Appendix C

Community-Based Health Worker Cancer Screening and Referral Program

Name: _____
First Middle Last

Part I: Post-Intervention Knowledge of Cancer Prevention and Healthy Lifestyle Habits

Please rate the following items that pertain to your knowledge of cancer screenings and healthy lifestyle habits and your perception of the program effectiveness and satisfaction.

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
1. I feel knowledgeable about cancer health topics.	1	2	3	4	5
2. I feel motivated to make lifestyle changes.	1	2	3	4	5
3. I pay attention to what I eat.	1	2	3	4	5
4. I am physical activity.	1	2	3	4	5
5. I realize the importance of making healthy lifestyle choices.	1	2	3	4	5
6. I plan to get cancer screenings.	1	2	3	4	5
7. The instruction I received was effective.	1	2	3	4	5
8. I felt the instructor answered my questions effectively.	1	2	3	4	5
9. I felt the instructor was knowledgeable about the cancer topics. The health information I obtained was useful.	1	2	3	4	5
10. Overall, the program was effective.	1	2	3	4	5
11. I enjoyed the project	1	2	3	4	5

Comment(s):_____
_____

Part II: Post-Intervention Cancer Prevention Screening Assessment

Please select the correct answer to the following questions regarding cancer screenings.

Females Only			
	Yes	No	Not applicable for my age
1. The recommended age for breast cancer screening for females is 40-45. During the past year, have you had a mammogram to screen for breast cancer?			
2. A Pap smear is a test to screen the cervix of females for cancer, starting at age 21-29. During the past 3 years, have you had a pap smear/test to screen for cervical cancer?			
3. At age 30 and older a PAP and HPV test should be started. PAP and HPV test is every five years or a PAP every three years. During the past 3 years, have you had a PAP or have you had a PAP and HPV in the last 5 years?			
Males Only			
	Yes	No	Not applicable for my age
4. Prostate cancer screening discussion should start at age 40 and screening starting at age 45 for some high-risk men (African American men with a close family member who had prostate cancer before age 65). Have you been screened for prostate cancer?			
Males and Females			
	Yes	No	Not applicable for my age
5. The recommended age for colon cancer screening is 45. High-risk persons (personal /strong family history of colorectal cancer /certain types of polyps, personal history of inflammatory bowel disease, known family history of a hereditary colorectal cancer syndrome, and /or a personal history of radiation to the abdomen or pelvic area to treat a prior cancer) should be screened before age 45. Have you had a colonoscopy to screen for colon cancer?			

Would you like to be referred for cancer screening(s)? ___ Yes ___ No
What type of cancer screening(s) referral do you desire? _____
If cancer screening is positive, do you want to be referred to the patient navigator to help guide you through the healthcare system to receive care/treatment? __ Yes ___No
Comment(s):_____
_____

Appendix D

Informed Consent

Project Title: Effectiveness of a Community-Based Healthcare Worker Cancer Prevention and Referral Program in an Uninsured/Underinsured Minority Community

Informed Consent

Please read this informed consent carefully before you decide to participate in the study.

Consent Form Key Information:

- Complete a written informed consent
- Complete pre- and post-intervention surveys
- Cancer education by a trained community-based healthcare worker (CBHW)
- Access to local cancer screening opportunities
- Access to a patient navigator

Purpose of the research study: The purpose of the study is to help determine if using a community-based healthcare worker will improve cancer prevention knowledge, cancer screenings, and access to cancer care/treatment.

What you will do in the study: Information about participants' cancer knowledge and cancer screening status will be gather by having the participants to complete a pre-intervention survey. Participants will attend a 60-minute educational session via face-to-face and/or virtual method (Zoom) once weekly over an 8-week time period. The educational sessions will be facilitated by the community-based healthcare worker (CBHW). While the sessions will focus on cancer education/knowledge, the importance of preventative screenings, and access to care, the CBHW will be able to discuss chronic conditions because chronic diseases are risk factors for cancer (e.g., hypertension and diabetes). During the sessions, the group will be allowed to share positive healthcare experiences, beliefs, and desired goals. The participants will have opportunities to complete cancer screenings (PAP, Mammogram, Colorectal, and Prostate) at local county/community facilities. The CBHW will encourage participants to self-report positive cancer screenings for referral to the patient navigator. The patient navigator will provide assistance to the participants with navigating the healthcare system for cancer care/treatment. At the end of the project, participants will complete post-intervention surveys which will be used to determine the effectiveness of using a CBHW. Participants can skip any question(s) that makes them uncomfortable and can stop the survey at any time.

Time required: The study will require the attendance of face-to-face/virtual method (Zoom) educational sessions which will take about 60-minutes of your time once weekly for 8-weeks. The pre- and post-intervention survey will require about 10-15 minutes each.

Risks: The risk of participation in this project is minimal. The potential risks of participating in the project include the inconvenience of attending cancer screenings that are not in the local area, the inconvenience of attending more doctor's appointments for follow-up care if your cancer screen is positive, and the time required for you to participate in the face-to-face/virtual (Zoom) education sessions.

Project Title: Effectiveness of a Community-Based Healthcare Worker Cancer Prevention and Referral Program in an Uninsured/Underinsured Minority Community

Benefits: The anticipated benefits of your participation in this project includes improved cancer prevention knowledge, completion of recommended cancer screenings, and detection of positive cancer screenings with access to treatment.

Confidentiality: The information that you give in the study will be handled confidentially. Unique identification letters for coding will be assigned to participants when completing the informed consent. Only the principal investigator (PI) will have access to the list of participants with their corresponding letter identifier. The list of participants and their corresponding letter identifier is needed to assess for a change in the participants' pre- and post-survey answers. The list of participants and letter identifiers will be stored in a locked file cabinet which will be located in a locked room belonging to the PI. When the study is completed, and the data has been analyzed, the list of participants and letter identifiers will be destroyed. Your name will not be used in any report. The secure UA Box will be used to store electronic files containing participant de-identified data/information. The data will be kept for three years.

Voluntary participation: Your participation in the study is completely voluntary.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty.

How to withdraw from the study: If you want to withdraw from the study, notify the CBHW/PI and leave the room. If you would like to withdraw after the project is over, your data/surveys will be excluded from the study and destroyed.

Compensation/Reimbursement: You will receive no payment for participating in the study. There are no alternatives for the study.

If you have questions about the study or need to report a study related issue please contact:
Name of Principal Investigator: Juanita Sparks
Title: DNP Candidate Student
Department Name: Capstone College of Nursing
Telephone: 919-770-9289
Email address: jjsparks@crimson.ua.edu

Faculty Advisor's Name: Dr. Robin Lawson
Department Name: Capstone College of Nursing
Telephone: 251-463-4706
Email address: rmlawson@ua.edu

If you have questions about your rights as a participant in a research study, would like to make suggestions or file complaints and concerns about the research study, please contact: Carpantato Myle, the University of Alabama Research Compliance Officer at (205)-348-8461 or toll-free at 1-877-820-3066. You may also ask questions, make suggestions, or file complaints and concerns through the IRB Outreach Website at http://ovpred.ua.edu/research-

compliance/prco/. You may email the Office for Research Compliance at rscompliance@research.ua.edu.

Agreement:

☐ I agree to participate in the research study described above.

☐ I do not agree to participate in the research study described above.

_____

Signature of Research Participant Date

_____

Print Name of Research Participant

_____

Signature of Investigator or other Person Obtaining Consent Date

_____

Print Name of Investigator or other Person Obtaining Consent

Appendix E

Duke Cancer Institute Office of Health Equity Letter of Support

June 11, 2020

Juanita Sparks, MSN, RN
DNP Student
University of Alabama
Tuscaloosa, Alabama 35487

Subject: IRB Requirement

Project: "Effectiveness of a Community-Based Health Worker Cancer Screening and Referral Program in an Uninsured/Underinsured Minority Community"

Dear Juanita,

As your Clinical Preceptor, I am informing you that your project titled "Effectiveness of a Community-Based Health Worker Cancer Screening and Referral Program in an Uninsured/Underinsured Minority Community" does not meet the definition of research. Your project is evaluating the implementation of a program that is evidence-based. Therefore, your project is not required to be submitted to the Institutional Review Board (IRB) for a determination. I have attached a copy of Duke University's policy that clearing indicates this for your reference.

Duke Cancer Institute is a National Cancer Institute (NCI)-designated Comprehensive Cancer Center. Our catchment area covers all 100 counties in the state of North Carolina, as well as parts of Virginia and South Carolina. We have multiple programs that operate within and outside of our catchment area as our reach extends globally.

I am looking forward to working with you as this project will greatly benefit the participants and help aide important efforts to reduce the burden of health disparities in the United States, a burden that falls disproportionately on people of color.

Sincerely,

[redacted]

Angelo Moore, PhD, MSN, RN, NE-BC
Program Manager
Office of Health Equity
Duke Cancer Institute

BOX DUMC 2714, Durham, NC 27710
DEL 2424 Erwin Road, Suite 602 Durham, NC 27705
TEL 919.668.7946
FAX 919.681.4785
URL http://dukecancerinstitute.org/office-health-equity-ohe

Appendix F

Goals of Project

Specific	Measurable	Assignable	Realistic	Time Specific
Increase cancer prevention knowledge by at least by 10%	Pre-/post-intervention survey results will be compared	Principal Investigator (PI)	Participants will receive prevention education at the level that is understandable to the group	By the end of the project
Increase cancer screening rate by at least 5%	Pre-/post-intervention preventive cancer screening numbers will be compared	PI will track the pre-/post-intervention preventive cancer screening assessments for compliance of recommended preventive cancer screenings	Opportunities for cancer screenings will be available to all participants who desire screening	By the end of the project
100% of self-reported positive screened participants who request a patient navigator referral are successfully connected to a healthcare agency for cancer care/treatment	All self-reported positive cancer screened participants who desire a patient navigator referral for cancer care /treatment will receive a referral	Community-based healthcare worker (CBHW) will refer the self-reported positive screened participants to the patient navigator for connection to a healthcare agency. The PI will note the referrals on the pre-/post-intervention surveys	Self-reported positive cancer screen participants can easily be referred to the patient navigator	By the end of the project

Appendix G

Cost-Benefit Analysis/Budget

Resource Category	Cost per Hour/Item	Total Cost to Project
Community-Based Healthcare Worker (CBHW)	$18.34 mean hourly rate x 8 hours = $146.72 (1hr/week education session x 8 weeks) (volunteer church member)	$0
Cancer Institute CBHW Trainer	$27.56/hour x 5 hours = $137.80 (4 hours of training and 1 hour of follow-up/review of training material)	$0
Cancer Institute Patient Navigator	$28.21/hour x 8 hours = $225.68 (available for referrals 1hr/week x 8 weeks)	$0
Educational Material	Free cancer prevention information and cancer screening guidelines were retrieved from the America Cancer Society and the Centers for Disease Control. The information was presented electronically. Educational material was emailed to participants upon request.	$0

Appendix H

Timeline of Events

Month/Year	Event
July 26, 2020	Project Proposal Approval
September 3, 2020	IRB Approval
September 6, 13, 20, 2020 (3 consecutive Sundays)	Project announced in the church
September 6-10, 2020 September 12, 2020 October 7, 2020	Participants and CBHW will be identified CBHW trained Participant consent, pre-intervention data collection, and the 1st CBHW led education session will be conducted
November 30, 2020	End of project Post-project data collection
January 2021	Analysis of data/outcomes
February 2021	Dissemination of information