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The Influence of Family History of Type 2 Diabetes Mellitus on Positive Health Behavior Changes Among African Americans

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Walden University

College of Health Sciences

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Donny D. Ard

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Review Committee
Dr. Naa-Solo Tettey, Committee Chairperson, Public Health Faculty
Dr. Shingairai Feresu, Committee Member, Public Health Faculty
Dr. Michael Brunet, University Reviewer, Public Health Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
2019

Abstract

The Influence of Family History of Type 2 Diabetes Mellitus on Positive Health Behavior Changes Among African Americans

by

Donny D. Ard

MHA, University of Phoenix, 2008

BS Physician Assistant Studies, Touro College School of Health Sciences, 2004

BS Biology, Oakwood University, 2002

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

Walden University

May 2019

Abstract

Type 2 diabetes mellitus (T2DM) is a disease that affects the body's ability to metabolize glucose effectively. The disease is predicted to be prevalent in over 300 million people by the year 2030. African Americans (AA) have the highest prevalence rates in the United States. Lifestyle modification and awareness of risk factors, including family history, are important aspects for prevention of developing T2DM. The purpose of this study was to understand if a family history of T2DM played an influential role in individuals making positive health behavior changes for T2DM prevention. The phenomenological study was grounded in the health belief model. Participants selected for this study were at least 18 years of age, self-identified as AA, self-reported a family history of T2DM, and were not diagnosed with the disease themselves. Transcriptions of 20 face-to-face interviews were stored and organized via a qualitative research software NVivo Version 12 for Mac and later analyzed for data outcome. Participants demonstrated a strong awareness of T2DM with an accurate definition of T2DM and explanation of signs, symptoms, and prevention. Participants recognized family history as a risk factor in only 55% of the responses. However, family history played a major role in prevention in the lives of the participants. The participants reflected on personal barriers to health behavior changes and were encouraged to incorporate better life choices in their own lives. This research offers communities, healthcare providers, and stakeholders a better understanding of the importance of family history as a risk factor to T2DM as programs are developed to mitigate health disparities in the AA community.

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Dedication

This dissertation is dedicated to my loving parents, James and Gloria Ard. Thank you for all you have provided for me during my life. Your hard work in raising me has made me the person I am today. You pushed me to be the best I could be in all that I did. Your tireless work ethic offered me the opportunities I had to learn and seek knowledge to become a better person. Although dad is not here to see this moment, I know he would be so ever proud of me and my family. I can see him beaming with joy and pride. Thank you again for everything.

Acknowledgments

I would like to acknowledge God for He has done so much for me and has blessed me beyond what I deserve. Thank you to my wife, Quanny, who has provided a safe place for me to work during this time. You have taken care of our children and our home. You are awesome, and I do not deserve you. Thank you to my children, Quentin, Dylan, and Logan, for allowing me time to write and study when you wanted to play. Thank you to siblings Jamy, Brandie, and Candie for encouragement and listening. It is greatly appreciated to everyone who listened to me complain as I went through this process. I would like to also acknowledge my chair, Dr. Tettey, and my committee members, Dr. Feresu and Dr. Brunet. Thank you for your patience, advice, wealth of knowledge, and for keeping me focused. Thank you to Pastors Graham, Jacobs, and Kinlock who allowed me to present in front of their congregations to recruit participants. It is finally over, and I would not be here if it were not for each and every one of you who participated in my study and supported me. Thank you! Amen!

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Chapter 1: Introduction to the Study

Diabetes mellitus (DM) is a disease that affects the body's ability to break down effectively sugar for the consumption of energy. There are three types of DM: Type 1, Type 2, and gestational DM. Type 2 DM (T2DM) deals with the cells of the body not responding to the hormone insulin, the body not producing enough insulin, or both (Tanamas et al., 2016). According to the Centers for Disease Control and Prevention (CDC), diabetes affects approximately 29.1 million individuals each year and is the seventh leading cause of mortality in the United States (CDC, 2014). The World Health Organization estimates that T2DM will be prevalent among 366 million people by the year 2030, which is a dramatic increase from the 171 million that was reported globally in 2000 (World Health Organization, 2010 as cited in Hansen, Landstad, Hellzén, & Svebak, 2011).

African Americans are twice as likely to be predisposed to develop diabetes as their European American counterparts (McCloskey & Flenniken, 2010). This disparity has elevated the issue to a national concern. The African American community needs interdisciplinary support from various healthcare and public health sectors to help create change for this health disparity. This research will aim to generate dialogue between the African American communities, healthcare providers, and stakeholders on the topic of T2DM and positive health behavior or the lack thereof. This study will help increase understanding of barriers such as socioeconomic disparities, the lack of healthcare availability, and the deficiency in educational tools needed for prevention. This research will be instrumental in highlighting the African American community’s perception of healthcare overall. With the community's input, healthcare providers and stakeholder can use statements from the community to support the development of community-specific prevention programs.

The study will contribute to positive social change by increasing the awareness of various social justice problems that may adversely impact the ability of African Americans with a family history of T2DM to make positive health behavior changes towards prevention. With the information provided from this research, healthcare providers and stakeholders can formulate an outline on T2DM prevention for policy makers. Policy makers will then be able to partner with lobbyists to create an agenda focused on making healthier foods affordable, providing subsidies to fitness programs for the underserved populations, and establishing grants for organizations to develop additional diabetic prevention programs.

Chapter 1 briefly summarizes the research literature that is related to the scope of T2DM, family history, prevention, and African Americans. In this chapter I explore the gap in the knowledge while formulating the problem statement derived from this gap. I also address the purpose of the study while looking at the theoretical and conceptual framework that I used for this research. The chapter concludes with the assumptions, scope, delimitations, and limitations of this research.

Background of the Study

T2DM is a public health concern. Healthy People 2020, through the goals and objectives for diabetes, recognizes there is a significant health disparity among African Americans diagnosed with T2DM (Gumbs, 2012). As it pertains to race and ethnicity, African Americans are 50%-100% more likely to develop T2DM compared to their European American counterparts (Signorello et al., 2007). Researchers estimate the rate of T2DM to triple by the year 2050 amongst African Americans (Signorello et al., 2007). African Americans are more likely to have disproportionate outcomes as they relate to T2DM and are twice as likely to experience diabetes-related blindness, lower limb amputations, and depression (Brewer-Lowry, Arcury, Bell, & Quandt, 2010; McCloskey & Flenniken, 2010).

There are astronomical expenses associated with the treatment and management of T2DM. Not only are families carrying a financial burden, diabetes is extremely costly and taxing on the U.S. government. In 2012 it was reported that diabetes and related care cost the United States $245 billion (Gumbs, 2012). From this, $176 billion accounted for direct medical costs (e.g., drugs, insulin, other supplies, and medical care), and $69 billion for indirect costs (e.g., work loss, premature death; CDC, 2014). Individuals with diabetes are more likely to spend 2 to 3 times more in medical expenses than those who do not have diabetes (CDC, 2010). Morbidity, mortality, and costs associated with diabetes are more prevalent in the African American population (Rautio et al., 2012).

How the family history of T2DM is influential as a positive behavior change agent for African Americans was the area of interest for this study. There are several gaps in the literature specifically in looking at the impact that knowledge of family history has on preventive measures in T2DM. This study provides a perspective of African Americans who have a family history of T2DM and how knowledge of this affects lifestyle choices. This research has the potential to shed light on specific barriers that may hinder individuals in making lifestyle changes. This study adds to the discipline of T2DM, African Americans, and community health promotion and education.

Problem Statement

The public health system has a strong commitment to planning and implementing preemptive measures for preventable diseases. The system strives to make prevention and awareness important factors in healthcare with the development of various programs. The programs focus on awareness in communities with health disparities. Of the $2.6 trillion spent during the fiscal year of 2010 towards healthcare services and goods, 8.6% was spent towards prevention and wellness, which included research, primary prevention, screening for early detection, and initiatives in public health (Coberley, Rula, & Pope, 2011). T2DM remains the leading cause of death for African Americans. The overall goal of Healthy People 2020 in this regard is to reduce the number of newly diagnosed individuals with T2DM and contribute to reducing the economic burden it has on individuals and their families (Gumbs, 2012). The keys to this reduction in newly diagnosed individuals are within awareness and prevention

Awareness involves understanding the risk factors associated with the disease. The risk factors related to T2DM include obesity, hypertension, heart disease, family history, and ethnicity. Compared with individuals without a family history of T2DM, persons with a family history in any first-degree relative have a 2- to 3-fold increased risk of developing T2DM (Rautio et al., 2012). The way a person internalizes the importance of family history varies by disease. Individuals becoming aware of their family history and assessing their personal relationship to a disease, may result in a positive change in health behavior (McDowell, Occhipinti, & Chambers, 2013). McDowell et al. (2013) found that individuals who were aware of a family history of prostate cancer were more likely to undergo screening as compared to those who did not have a family history. In another study, Madlensky, Flatt, Bardwell, Rock, & Pierce (2005) showed women who had a strong family history of breast cancer were more likely to take more of a dramatic approach to the disease as it pertains to surgical management. At the same time, they did not report more preventive measures as compared to breast cancer survivors who did not have a family history.

A shift in thinking within the African American community, healthcare providers, and stakeholders on the role of positive health behavior and family history as it pertains to improving the overall outcome of T2DM is needed. This research adds to the efforts that focus on awareness in the community by investigating the relationship between family history awareness and health behavior changes towards T2DM in African Americans. Together, communities and healthcare services can work on prevention and management of T2DM.

Purpose of the Study

The goal of this research was to understand the relationship between African American awareness of a family history of diabetes and how that knowledge affected positive health behavior changes. With an understanding of how positive health behavior changes may be associated with the awareness of a family history of T2DM in African Americans, preventive measures can be developed and implemented that are tailored specifically to African Americans with a family history of T2DM.

Research Questions

RQ1-Does knowledge and understanding of a family history of diabetes promote positive health behavior changes in African Americans?

RQ2-For individuals who have not made any changes toward prevention, what are the barriers that have prevented change in their lifestyles?

Theoretical Foundation

The theoretical framework for this research was the health belief model (HBM). The HBM explores the mindsets of individuals and their willingness to make healthy choices. The HBM provides insight on barriers associated with persons who may refuse to involve themselves in any positive changes toward their health (Huff & Kline, 2008). The HBM for this study assisted in examining African Americans with a family history of diabetes and the influence it has had on positive health behavior changes. The HBM has been used in prior studies as it relates to chronic and preventable diseases. Wdowik, Kendall, Harris, and Auld (2001) applied the HBM to understand the attitudes of students who managed their diabetes in a college setting while looking at the barriers they had in establishing safer management skills. Further information on the HBM and its significance to this study are detailed in Chapter 2.

Conceptual Framework

The conceptual framework for this research was centered on a phenomenological design. Phenomenology is a broad discipline and method of inquiry in philosophy. German philosophers Edmund Husserl and Martin Heidegger were primarily responsible for its conception. Phenomenology is based on the premise that reality consists of objects and events ("phenomena") as they are perceived or understood in the human consciousness and not of anything independent of human consciousness (Inman & Kornegay, 2004). As described by Mapp (2008), phenomenology aspires to construct insight into ‘lived experience’ from the perception of those individuals involved in a particular experience or “phenomenon” (Poth & Carolan, 2013).

Poth and Carolan (2013) used qualitative research with a phenomenological emphasis when they explored pregnant women’s knowledge about the prevention of gestational diabetes mellitus (GDM). In their research, Poth and Carolan (2013) used the state of being pregnant as the experience while using interviews to explore the women’s knowledge of GDM prevention. Inman and Kornegay (2004) also conducted a phenomenological study that explored the lived experiences of male alcoholics who also were diagnosed with diabetes. These two studies examined individuals’ experience to understand a condition better. The concept and the rationale of phenomenology are described in Chapter 2.

Nature of the Study

A qualitative approach with an emphasis on the HBM and phenomenology was the research design for this study. A qualitative study design enables the researcher to gather data and information from participants by allowing them to express their thoughts and concerns through focus groups and interviews (Patton, 2002). This study was centered on recruiting African Americans who self-report a known family history of diabetes but themselves are not diagnosed with the disease. The participants composed a convenience sample of interested African American men and women over the age of 18.

Participants were recruited from an inclusion questionnaire that was given to various church congregations in Maryland after receiving permission from the church's pastor allowing dialogue and recruitment from these various churches. Data was collected from face-to-face interviews, transcribed, and analyzed through NVivo.

Definitions

Family history: The family structure and relationships within the family, including information about diseases in family members (McDowell et al., 2013).

Risk factors: Any attribute, characteristic, or exposure of an individual that increases the likelihood of developing a disease or injury (Gumbs, 2012).

Type 2 diabetes mellitus: One of the two major types of diabetes, the type in which the beta cells of the pancreas produce insulin, but the body is unable to use it effectively because the cells of the body are resistant to the action of insulin (Signorello et al., 2007).

African American: An American having African and mainly black African ancestors (Ammerman et al., 2003).

Lifestyle modification: Involves altering long-term habits, typically of eating or physical activity, and maintaining the new behavior for months or years (Coberley et al., 2011).

Prevention: The action of stopping something from happening or arising (Nilsen, Bakke, & Gallefoss, 2011).

Positive health behavior changes: A broad range of activities and approaches that focus on the individual, community, and environmental influences on behavior (Lippke, Nigg, & Maddock, 2012).

Assumptions

There were several assumptions about this research. One assumption was that individuals were aware they have a family history of T2DM. A second assumption was that these individuals were mindful of the fact that a family history of T2DM puts them at risk of developing T2DM. A third assumption involved individuals who are aware that they have a family history are essentially interested in making positive health behavior changes. These three assumptions all play an intricate part in this research. Each assumption is a derivate of the purpose of the study and the research questions.

Scope and Delimitations

The primary focus of this research was to understand if the knowledge of a family history of T2DM plays a role in positive health behavior changes in African Americans. Research participants in this at-risk community were given a chance to express their thoughts and concerns as it pertained to T2DM through a face-to-face interview process. Through various research questions, participants had an opportunity to express their decisions on why they have chosen to be proactive in making positive health behavior changes.

Another focus of this study was to provide an opportunity for individuals to explain why they have not made positive behavior changes towards the prevention of T2DM. Individuals were able to express specific barriers that were preventing them from improving their health. Additionally, this research identified if individuals were aware they were at risk in developing T2DM considering they have a family history of T2DM. These aspects of the study were chosen for several reasons. The first reason was to provide the community with tools to improve its health by increasing awareness of the disease. An individual who is not aware that a family history puts them at risk may never change their mindset or make strides towards change. Another reason was to acknowledge and give recognition to those who are making positive health behavior changes. Their stories can be motivation for others.

Limitations

One limitation of this research dealt with the convenience sample size. The number of eligible African Americans selected for this research decreased the positive validity outcome for the research. The sample size also limited the conclusions of the study to only those involved and not all African Americans. This study had a component of self-reporting for the inclusion criteria questionnaire. This self-reporting presented challenges to the validity of the study through the dependability of the research.

Although there are many populations and ethnic groups affected by T2DM, African Americans are of the highest of any population with the disease. This fact along with focusing on just African American communities presented limitations of potential bias and of generalizability. Further limitations of this study included focusing only on African Americans who had not been diagnosed with T2DM but were aware that they had a family history of the disease. Added to this were the criteria for the qualifying age range chosen.

Significance

A key factor in the prevention and management of chronic diseases is lifestyle modification (Koch, 2002). Lifestyle modification includes increasing a person's physical activity, reducing abdominal fat, eating a proper diet, and getting an adequate amount of rest each night. The importance of lifestyle changes in the management of T2DM is highlighted throughout the literature. Making lifestyle modifications are encouraged even more so than medications alone (Hewitt, Smeeth, Chaturvedi, Bulpitt, & Fletcher, 2011). The benefit of having a proper diet along with exercise that involves at least 30 minutes of cardio related activities can help maintain a proper weight, reduce the need for insulin medication, and achieve glycemic control (Sanghani, Parchwani, Palandurkar, Shah, & Dhanani, 2013).

A second factor in the prevention and management of chronic diseases is understanding the risk factors associated with the disease. There is evidence that individuals should pay attention to specific risk factors, such as family history, that are linked to chronic illnesses (Cho et al., 2012). Researchers have found that getting people to understand the role of family history as a risk factor for chronic diseases can play a major role in the prevention. In a recent study, Sud, Roy, Emerson, and Hennessy (2013) identified the need for stronger and more convincing preventive measures with individuals who have a family history of cardiovascular disease. Also, Andersson, Sjöberg, Ohrvik, and Leppert (2009) determined with their study that family history as a risk factor for cardiovascular disease was downplayed in the minds of those who were at highest risk and that there was even more of a lack of health behavior changes with this selected group.

Understanding risk factors linked to chronic diseases is paramount to subsequently identifying at-risk individuals. Concerning risk factors, family history is equally significant as other risk factors associated with T2DM such as age, obesity, smoking, and gender (Hansen et al., 2011). This research illustrated how individuals considered the importance and consequences a family history of T2DM on their health. This study also looked at how individuals used that knowledge of a family history to make positive changes in their health behaviors. For individuals who do not engage in effective change, this research will provide the reasoning and insight on why positive health behavior changes are ignored despite the consequences of T2DM.

Summary

Millions of individuals are living with T2DM. Prevention of this disease has been an important task to help reduce rates, especially in the African American communities. Prevention tools have been developed through research to help with the reduction of the prevalence of the disease in a defined population. Studies have shown that diet and exercise play important roles in the prevention of the disease (Nilsen, Bakke, & Gallefoss, 2011). There are many risk factors associated with T2DM. Family history is just as important a risk factor as obesity, high blood pressure, or having high levels of cholesterol when speaking about developing T2DM. This research was focused on African Americans who had not been diagnosed with the T2DM but were aware that they had a family history of it. The goal was to see what influence knowledge of family history of T2DM played in individuals making positive health behavior change.

Chapter 2: Literature Review

Introduction

Statistics show that every 10 seconds at least two people develop diabetes and at least one succumbs to diabetic related issues (George & Thomas, 2010). T2DM is a disease that has been heavily targeted by the public health sector due to it overwhelming prevalence, especially in the African American community. As mentioned earlier, the prevalence of the disease is estimated to double by the year 2030 with African Americans representing a majority of this increase (Koch, 2002). Studies have shown that lifestyle modifications, which include a proper diet and increased physical activity, can help in the prevention of the disease. Studies have also shown that family history is an important risk factor to consider as it pertains to T2DM (Cho et al., 2012). With family history and prevention as the key factors, the purpose of this research was to understand the relationship between individuals who know they have a family history of diabetes and how that knowledge affects positive health behavior changes amongst African Americans.

Chapter 2 focuses on several areas of literature that were relevant to this research while detailing the search strategies that were used. The HBM was the theoretical foundation for this research, and in this chapter I present its utilization. I present past studies that have used the HBM as a theoretical foundation in support of using it for this research. In Chapter 2 I also explore the conceptual framework of phenomenology as to the design for this research study. In addition, I examine literature that addresses various approaches to dealing with T2DM in the African American community. The literature review details different strategies about lifestyle modifications that were used to get individuals involved with their health for the prevention of diabetes. In this chapter I also look at the importance of family history as a risk factor within T2DM. Most importantly, in this chapter I show that there is a gap in the literature that supports the purpose of this study.

Literature Search Strategies

The research strategies consisted of a review of several research library databases that included MEDLINE with Full Text, CINAHL Plus with Full Text, Academic Search Complete, ProQuest Health and Medical Complete, PubMed, and ScienceDirect. The terms that were used in the searches included a combination of *diabetes and African Americans, African Americans and depression, financial impact and diabetes, social justice and health disparities, health disparities and African Americans, diabetes and depression, diabetes and education,* and *diabetes and lifestyle changes.* I gathered information from data collected by the American Diabetes Association, the CDC annual reports, and public health departments with programs tailored for diabetes education and awareness.

Theoretical Foundation

The HBM is a theory developed by social psychologists to understand the under-utilization of preventative screenings and aid in the development of techniques and approaches that could be implemented to improve utilization of health services and the health of populations (Janz, Champion, & Strecher, 2002). The HBM was originally conceptualized in the 1950s by Irwin Rosenstock (as cited in Hayden, 2014) to describe a model of disease prevention and not a model of disease treatment (Glanz, Rimer, & Viswanath, 2008). During the 1950s, healthcare in the United States was moving from a reactive, treatment-based system to a more proactive prevention-centered approach. One such example was the utilization of chest x-rays for the early diagnosis of tuberculosis. Despite this increase in the availability of technology and preventative care, people were not participating in the preventative screenings available as much as the public health educators had hoped (Hayden, 2014).

The HBM is the most commonly used theory in health education and promotion (Glanz et al., 2008). The underlying concept of the HBM is that health behavior is determined by personal beliefs or perceptions about a disease and the strategies available to decrease its occurrence (Glanz et al., 2008). The model has been applied to a broad range of health behaviors including breast cancer screening/mammograms (Russell, Perkins, Zollinger, & Champion, 2006), smoking prevention and cessation (Rahnavard, 2011) and mental health behaviors such as depression and substance abuse screening (Henshaw & Freedman-Doan, 2009).

The HBM suggests that health-related decision making is determined by perceptions about (a) the person’s susceptibility to the illness, (b) severity of the illness, (c) perceived benefits of treatment, (d) perceived barriers to seeking care, and (e) cues to action (Glanz et al., 2008; Hayden, 2014). The HBM provides researchers the ability to focus on some or all the constructs within the HBM (Hayden, 2014). In a pilot program for diabetes education, researchers developed a culturally tailored Malaysian Diabetes Educational Module (MY-DEMO) based on the constructs of the HBM. The MY-

DEMO program initially measured only the cues to action, perceived benefits, and perceived severity (Ahmad, Ramadas, Kia Fatt, & Md Zain, 2014). In a similar study design, Koch (2002) measured all the constructs of the HBM by examining the role of exercise in the African American woman with T2DM.

Constructs

Perceived susceptibility is an individual’s beliefs about how predisposed they are for being diagnosed with a specific disease. It is the level to which individuals believe they are prone to be diagnosed with T2DM or how likely they believe this will happen to them at some point in their lifetime. Some people may take into consideration their family history of T2DM when deciding on their personal susceptibility.

Perceived severity is the individual's views on how grave or severe a diagnosis of T2DM would be to them. The combination of perceived susceptibility and perceived severity equates to perceived threat (Janz et al., 2002). HBM suggests that an individual is most likely to engage in action to avoid a potential health risk if they believe that contracting a disease or being diagnosed would negatively impact their existence (Hayden, 2014; Janz et al., 2002).

Perceived benefits refer to whether an action is expected to reduce the risk of acquiring the condition or the consequences of the situation. Therefore, individuals weigh both benefits and barriers that help them decide whether to act. In the case of prevention programs for T2DM, individuals would be more likely to decide to use services for the following: (a) they perceived themselves as susceptible to T2DM, (b) they believed this disease would have serious consequences, and (c) they believed the benefits of using services outweighed barriers to doing so (Heideman et al., 2012).

Perceived barriers are the potential negative consequences of taking a healthy action (Janz et al., 2002). For many African Americans, history has dictated the actions of individuals seeking care from healthcare providers. Most African Americans have become hesitant of healthcare institutions mainly because of a history of exploitation for medical experimentation and demonstration. The Tuskegee syphillis experiment, one of the most notorious events in America's history, has been responsible for creating many perceived barriers to health services among African Americans (Harter, Stephens, & Japp, 2000).

Cues to action are events, people, or things that move an individual to change their behavior. A person might feel the need to seek a prevention program from a local hospital if a family member were to have an amputation of a limb due to the consequences of T2DM. Cues to action can serve as a trigger for someone to make a healthier choice. Cues to action have been measured in diabetes prevention and management studies. Wdowik et al. (2001), using a five-item Likert scale, used “When I feel I have low blood sugar, I test it” as the cue to action in their study that focused on college students with diabetes and their perception of self-management.

Limitations

One of the reasons the HBM has made such a valuable contribution to the field of public health is that it was designed to help identify faulty beliefs and determine individual barriers to appropriate participation programs intended to prevent disease

(Henshaw & Freedman-Doan, 2009). By identifying and understanding these barriers, health educators might be better equipped to design programs that address inaccurate beliefs and maladaptive attitudes (Henshaw & Freedman-Doan, 2009; Janz et al., 2002).

The HBM is mainly used to predict health-promoting behaviors. It has also been used to examine sick role behaviors, for example, adherence to medical advice (Heideman et al., 2012). Studies on the application of the HBM to individual diabetic prevention behaviors and the role of family history as a risk factor have been sparse. The majority of research pertaining to diabetes and the HBM has been focused on medication compliance and self-management of the disease (Ahmad et al., 2014; Wdowik et al., 2001).

Conceptual Framework

Research methods have been described as strategies that aid in the pursuit of knowledge. These plans have outlined the road maps to help researchers lead to relevant knowledge. These methods offer a unique layout that helps researchers gain knowledge that is valid by eliminating a researcher's distorted view that may be influenced by personal ideologies and personal characteristics. The phenomenological research design employs a different vantage point from other research methods.

Although there are several versions of phenomenology, it was first launched in the first half of the 20th century by German philosopher Edmund Husserl (Mapp, 2008). Others philosophers such as Martin Heidegger, Jean-Paul Sartre, and Maurice Merleau-Ponty would follow with each giving a unique outlook on phenomenology (Matua & Van Der Wal, 2015). The overall philosophy of phenomenology centers on a first-person point of view of lived experiences (Mapp, 2008). Phenomenology, as first described by its founder, is the study of structures of consciousness as experienced from the first-person point of view.

A phenomenological research design is well documented in past research as it pertains to all realms of diabetic research. A phenomenological research design was used by Jagiello and Azulay Chertok (2015) as they explored the lived experiences of women and early breastfeeding after GDM. With breastfeeding being a complete form of nutrition for infants during the early developmental stages of life, it is recommended especially for newborns of women who were diagnosed with GDM. Per past research, breastfeeding rates were lower in this studied group of women (Jagiello & Azulay Chertok, 2015). Using focus groups and interviews, Jagiello and Azulay Chertok (2015) elicited the lived experience of women and early breastfeeding after GDM. Their study provided a platform for women with GDM not only to express their feelings about breastfeeding, but it also allowed them to speak about their emotional stress of having GDM (Jagiello & Azulay Chertok, 2015).

Diabetes prevention, particularly with pregnancy, has increasingly become a topic of discussion. There is a growing rate of women who are being diagnosed with GDM (Ferrara, 2007). To understand the knowledge of at-risk women and the role of lifestyle and diet in the prevention of GDM, Poth and Carolan (2013) used a phenomenological research design. This study took a purposive sample of six women who spoke openly about their thoughts and understanding of GDM. Their interviews offered important themes that translated to the lack of knowledge some women had about GDM and prevention (Poth & Carolan, 2013).

Phenomenological research design affords an opportunity for persons to convey their experiences in a research study. Phenomenology and the HBM within this study will provide a chance for individuals who are living with a family history of T2DM to communicate their concerns and thoughts about the disease. Pairing the two methodologies will add insight into the ideas and behaviors of individuals who are living with this family history. The interviews will allow for individuals to articulate their stories on why they may or may not choose to participate in positive health behavior changes. The theoretical and conceptual framework will help understand if the knowledge of family of T2DM plays a role in positive health behavior changes.

Literature Review

Diabetes within African Americans

T2DM within the United States has overwhelming statistics within the healthcare world. Steinhardt, Brown, Dubois, Harrison Jr., Lehrer, and Jaggars (2015) reported there are over 29 million Americans with T2DM. This statistic represents 9.3% of the total population. In 2012 there were over 86 million individuals who were pre-diabetic. Pre-diabetes is defined as having certain blood levels that are significantly elevated enough to cause concern but not make the diagnosis of diabetes. Pre-diabetic blood levels that are monitored include blood sugar levels from a fasting and oral glucose tolerance test (fasting--100-125; oral--140-199) and levels of a Hemoglobin A1C (pre-diabetes—5.7%-6.4%) (Steinhardt et al., 2015). African Americans are disproportionately affected at 13.2% of those who are living with T2DM. This is compared to only 7.6% of European Americans (Steinhardt et al., 2015). Risk factors associated with the disease, such as obesity and being overweight, increase the probability of getting T2DM. African Americans are predisposed to being obese and overweight at 49% and 27% respectively (Steinhardt et al., 2015).

T2DM, the sixth leading cause of death in the US, has been described as a psychologically and behaviorally demanding chronic disease (Steinhardt, Dubois, Brown, Harrison Jr., Dolphin, Park, & Lehrer, 2015). Depression is one of the most mental health comorbidities associated with T2DM (Groh & Moran, 2016). T2DM doubles the odds of developing depression (Steinhardt et al., 2015). Although prevalence rates are lower in African Americans than Caucasians, African Americans are more likely to suffer and experience symptoms of the illness longer (Bryant, Haynes, Kim Yeary, Greer-Williams, & Hartwig, 2014). Emotional and depressive symptoms are a result of the demands one has from the financial, physical, and mental burdens associated with living with a chronic disease such as T2DM (Jones, Clay, Ovalle, Cherrington, & Crowe, 2016). Depression plays a critical role in decision making towards positive health behavior changes, which can lead to an increase in vulnerability to complications from the disease. Many of these complications are preventable if an individual is engaged in a proper diet and exercise regimen (Groh et al., 2016).

T2DM not only affects the mind but can also have a physical manifestation and other health related comorbidities that are just as alarming. T2DM is a risk factor for developing, heart disease, strokes, vascular complications, neuropathy, blindness, and renal failure. The physical complications from diabetes include wounds and major limb amputations. All these comorbidities reduce life expectancy and have a higher mortality rate. African Americans are twice as likely to suffer and die from complications related to T2DM than Caucasians (Moussa, Sherrod, & Choi, 2013).

Public Health and Healthcare Implications

Financial impact. In 2012 there were a total of 1.7 million new reported cases of individuals diagnosed with T2DM (Steinhardt et al., 2015). With the US already spending $245 billion annually for diabetic related illnesses (Steinhardt et al., 2015), there is a critical demand for a reduction in the number of newly and already diagnosed individuals with T2DM. Individuals with diabetes are more likely to spend 2.3 times more on healthcare expenses than individuals who do not have diabetes (Jones et al., 2016). Furthermore, there is a significant disparity when African Americans are spending an immense majority of this money that is linked to T2DM due to higher prevalence rates (Steinhardt et al., 2015).

The United States is not the only country suffering from the financial impact diabetes has on its healthcare system. Internationally there is also a push to reduce the financial burden the management of diabetes is having on the system and families affected by the disease. A common disease in Greece, T2DM affects an estimated 7.6% and 5.9% of the men and women within the overall population respectively (Athanasakis, Ollandezos, Angeli, Gregoriou, Geitona, & Kyriopoulos, 2010). Athanasakis et al. (2010) conducted a study to estimate the average cost of care per patient who was diagnosed with T2DM in Greece. The research involved the estimation of cost for individual to see their physicians, getting required medications and lab work, and hospital visit due to complications from T2DM. Through their research, they estimated that no matter the regulation of blood glucose levels, patients spent an average of 1297.30€ (or $1,480) towards their care for the management of T2DM. Given there are over 790,000 individuals with T2DM in Greece, this equated to over 1 billion Euros or 5.2% of the budgeted healthcare expenditure that is allocated annually for the care and management of individuals who are diagnosed with T2DM (Athanasakis et al., 2010).

Social jjustice. Social justice and health disparities are more related and interconnected than previously thought (Krieger, 2015). Social justice, as it pertains to health disparities, involves the minimization of social and economic conditions that have a direct correlation to adverse effects on the health of individuals and communities (Dilworth-Anderson, Pierre, & Hilliard, 2012). There are several factors relevant to social injustice that may lead to an increased rate of disease, disability, injury, or even death. Dilworth-Anderson et al. (2012) describe some of these factors to include poverty, inadequate education, lack of health insurance coverage, and limited availability of medical care.

Health disparities are defined as variations in management and treatment made available to constituents of different racial or ethnic groups that are not substantiated by the underlying health conditions or treatment preferences of patients (Dilworth-Anderson et al., 2012). Several examples of health disparities within the US include higher infant mortality rates among African Americans when compared to European Americans; fewer insured individuals within the Latino and African American communities; and a higher prevalence rate of T2DM within African Americans and Latinos when compared to European Americans (Krieger, 2015).

Diabetes Prevention

Education, awareness, and lifestyle changes.

T2DM and its onset continue to present a challenge to public health. There are several risk factors, of which some are modifiable, that are associated with T2DM. Risk factors related to T2DM include obesity, high blood pressure, high cholesterol, heart disease, and having a family history of the disease. There is a significant focus on the research that shows how a change in weight and eating a proper diet helps delay or even prevents the onset of T2DM (Amuta, Barry, & McKyer, 2015). There are prevention programs that have focused on diet and exercise for diabetes prevention and management. The Diabetes Prevention Program (DPP) was developed to assist in this critical challenge with a focus on certain risk factors. The DPP had proven to be effective in already at-risk individuals when modest weight reduction was achieved through diet and physical activities (Samuel-Hodge, Johnson, Braxton, & Lackey, 2014). The program, through follow-up research, also proved to be just as effective in African Americans when compared to other ethnic groups (Samuel-Hodge et al., 2014).

Through research, there is a link between the poor management of T2DM and knowledge of the disease secondary to an overall result of a lower general literacy, lower socioeconomic status, and lack of access to proper diabetic care and information (Moussa et al., 2013). The DPP research followed up by Samuel-Hodge et al. (2014) also found that further research for programs geared towards prevention needs to have a representation of African Americans in a lower socioeconomic status. Education and awareness of T2DM are key factors in helping individuals and communities understand the importance of the disease. Education usually focuses on making individuals aware of the disease and the risk factors that are associated with T2DM. Many programs have been developed that have this focus in mind.

Summary and Conclusion

T2DM will be considered a global epidemic by the year 2030 (Steinhardt et al., 2015). Numerous people have this chronic disease and even more who are pre-diabetic. African Americans are disproportionately diagnosed with the disease than other ethnicities and races. Research also shows that there are billions of dollars spent here and worldwide just on the management of the disease. Public health facilities are increasing education and awareness because of the social and economic consequences seen by T2DM. Research has helped providers target individuals who have modifiable risk factors and are linked to the development of T2DM. Research has shown that when individuals change their eating habits, take in a proper diet, and engage in regular exercise they reduce the risk factor associated with T2DM and their overall risk of being diagnosed with the disease. These lifestyle changes also have been shown to help with management of the disease for individuals who have already been diagnosed with T2DM.

There is a gap in the literature that focuses on the risk factors that are non-modifiable such as family history. There becomes a sense of self-responsibility for individuals who know they have a family history of the disease to help prevent the disease. There is also a responsibility of the providers to help recognize the persons who have a family history and encourage them to make positive health behavior changes. This research will explore the gap in the literature by focusing on the individual who knows that have a family history of the disease and determines if that impacts positive health behavior changes. Chapter 3 will focus on how the research will be conducted. The chapter will examine the role of the researcher, the methodology, and issues with trustworthiness.

Chapter 3: Research Method

Introduction

The African American community is affected by an increase in prevalence rates of T2DM. With a relatively small representation of the total population, this community has the highest rate of individuals with T2DM (George & Thomas, 2010). There is a gap in the research that expands on the idea of how a family history of T2DM impacts positive health behavior changes. This research was conducted in the African American community to understand if there is an impact from an individual knowing they have a family history of T2DM and if that influences positive health behavior changes. This chapter is focused on the research design rationale while considering the role of the researcher, the methodology, and issues concerning trustworthiness.

Research Design Rationale

To fully understand the influence the knowledge of family history of T2DM has on an individual to engage in positive health behavior changes, I used a qualitative research method. This research method is favored because it allows for interaction with the participants via face-to-face interviews. Focus groups and interviews have been used in prior research that focused on diabetes and some other lived experience. Jagiello and Azulay Chertok (2015) illustrated this concept when they looked at women's experiences with early breastfeeding after GDM. Prompting questions were used to initiate conversation in the focus groups and the interviews; detailed accounts from the participants were recorded and analyzed for the research (Jagiello & Azulay Chertok, 2015).

A qualitative research design has also been used when researchers attempted to gauge the knowledge and concepts related to a particular disease. Ranasinghe et al. (2015) utilized open-ended questions with a focus group of Sri Lankan adults to evaluate their overall knowledge and perception of the benefits a proper diet and physical activity has on T2DM. Open-ended questions in qualitative research provide the opportunity for participants to give a verbatim statement on their experiences (Huff & Kline, 2008).

For this research I used a qualitative research method to help answer the following research questions:

RQ1: Does the knowledge and understanding of a family history of diabetes promote positive health behavior changes among African Americans?

H_a1: Knowledge and understanding of a family history of diabetes does promote positive health behavior change among African Americans.

H_01: Knowledge and understanding of a family history of diabetes does not promote positive health behavior change among African Americans.

RQ2-For individuals who have not made any changes toward prevention, what are the barriers that have prevented change in their lifestyles?

H_a2: Barriers play a major role in preventing individuals from making positive health behavior changes in their lifestyle.

H_02: Barriers do not play a major role in preventing individuals from making health behavior changes in their lifestyle.

Barriers may include physical or psychological effects. The research looked for barrier themes ranging from poor eating habits, time restraints, physical limitations, access to nutritional and physical training, or lack of self-motivation.

Role of the Researcher

The role of the researcher in this study was both as a participant and observer. I was responsible for recruiting individuals for the study. I accomplished this by sending out and obtaining request forms from individuals who were selected from an inclusion survey. The role of participation extended to conducting the in-depth interviews with participants who consented to take part in the interviews. While the interviews were being conducted and recorded for accuracy, I was also an observer of facial expressions, reactions, and moods observed during the interview.

I selected twenty individuals for the interviews. Some of the participants had personal relationship with me, which could potentially have caused bias on the interview's outcome. To prevent bias, I conducted the interviews in a professional manner and refrained from involving any related personal information that may have had a bearing on the results. A third-party interviewer was not used to conduct the in-depth interviews. The researcher's role in these incidents will take on more of an observer position. All participants had private one-on-one interview sessions. All information will be kept private and safe for identity protection. I omitted research participants' names from data and results.

This topic of research was of interest to me because I self-identify as an African American male with a family history of T2DM. I have unfortunately experienced the loss of my father due to complications of diabetes. There are other members of my family who are experiencing poor health outcomes due to the disease. I am also involved every day in the care of patients who are seeking care for renal failure, arterial insufficiency, and chronic wounds, all secondary to T2DM. A family history, as mentioned before, is a risk factor associated with T2DM. The family history affiliation independently has been a major component in my decision to make positive health behavior changes. However, in this study I sought to understand if this was the same reaction for others who know they have a family history of the disease. For this research I asked the following question: What impact does the knowledge of a family history of T2DM have on individuals to make positive health behavior changes?

Methodology

Participant Selection Logic

African Americans are affected by T2DM more than any other ethnic group (Gumbs, 2012). Therefore, for participants in this research I concentrated on finding individuals who self-identified as African American no matter their place of origin. The participants for this research came from the African American population from different churches in the state of Maryland. The counties of interest for the study included Prince George’s, Howard, and Montgomery County. I approached several pastors to discuss the research. The premise of the meetings was to present the information about the research and its importance. I then obtained permission to distribute questionnaires to the churches for their congregations. The pastor in an African American community is held in high regard and is highly respected. Building a research partnership with pastors of churches in African American communities can be a critical step in determining the success or failure of certain research projects (Ammerman et al., 2003). Approaching the leaders of the churches can be essential for health promotion and research activities in the African American population (Butler-Ajibade, Booth, & Burwell, 2012). Participants selected for this study were at least 18 years of age, of African American descent no matter their place of origin, had a family history of T2DM, and had not been diagnosed with the disease themselves. Although gender, socioeconomic status, or educational status were a part of the results, these identifying markers did not have any bearing on the inclusion criteria. The research captured African American ethnicity for the participants to help identify possible African American cultural differences in health care management and prevention.

Procedures for Recruitment, Participation, and Data Collection

Sampling in qualitative research has a distinct purpose. The sampling strategies and sizes are meant to mirror the diversity of the population being studied and not be a statistical representation (Johnson & Waterfield, 2004). Therefore, I used purposive sampling versus probability sampling sizes. Sampling sizes are usually dictated based upon methods, research questions, and the type of data that is being collected. Most importantly, the sampling size should be significant enough to gather content that is rooted more in depth than in breadth. This often may produce smaller sampling sizes (Johnson & Waterfield, 2004). Similar studies with qualitative methodology and the HBM used smaller samples sizes. Poth and Carolan (2013) used six women in their study when they explored pregnant women's knowledge about the prevention of GDM.

Mapp (2008) explained a qualitative study grounded in phenomenological principles required six to 10 participants due to the large amount of data that can be gathered from the interviews. Based on the methodology and the type of data collection utilized, I concluded sampling after the first 20 eligible participants.

I used an inclusion questionnaire during the recruitment process to determine eligibility for the study. The main purpose of the inclusion questionnaire was to help discern individuals who self-identified as African Americans and had a family history of T2DM but they themselves had not been diagnosed with the disease. I developed the first portion of the questionnaire by using questions that captured age, ethnicity, whether there was a family history of T2DM, and if the individual had T2DM. These questions were meant to cover the main purpose of the questionnaire and determine if a person was to be included or excluded from the study. The questionnaire, while helping to pinpoint potential participants, also added demographic information such as gender, origin of birth, and educational status (see Appendix F). Lastly, if all criteria were met, the questionnaire asked individuals for contact information so they could be contacted via a phone call, an e-mail, or a letter requesting individuals to participate in the study.

I provided an informed consent outlining the intent and purpose of the study as well as describing subjects' rights before any involvement or data collection via the questionnaires or interviews began. The interviews took place in a mutually agreed upon location that was convenient for both the participant and me. I made participants aware that the interview would be recorded for later transcription and data collection. I used video and audio technology from FaceTime or Skype via the internet as last resorts to conduct the face-to-face interviews when a location to meet in person was not available. I only recorded the audio portion of the interview from a video conference for later transcription and data collection.

Whether the interview is conducted in person or by video conference, I collected data from transcriptions of all the interviews with participants giving their detailed answers to open-ended questions. An open-ended interview in qualitative research provides the opportunity for participants to give a verbatim statement of their experiences (Huff & Kline, 2008). The questions were centered upon, but not limited to, the participant's knowledge of the disease, risk factors associated with the disease, preventive measures that are recommended, and their active role in prevention of the disease. The questions also gathered information on barriers that were present for individuals who were not actively involved in prevention. These statements provided insight in a unique way on the lifestyle and preventive measures that they engaged in. There is a significant benefit that is associated with using interviews. The benefit involves developing a rapport with the participants to get the most out of the interviews from the participants. The collection of data, including the transcriptions and review of the interviews, took place over a period of 6 to 8 weeks.

The analysis of the data from the interviews will be with the use of NVivo Version 12 for Mac computers. NVivo, a Qualitative Data Analysis (QDA) software, is used within qualitative research to help identify common themes from data collection methods such as interviews. NVivo is capable of analyzing while organizing data that is entered from qualitative data collection. The process of the using NVivo allows the researcher to identify a connection more readily than with manual interpretation. A complete interpretation of the data will still rely upon the researcher and other sources. There will be an additional six to eight weeks added to this time for analysis and any other interpretations that will be needed.

Issues of Trustworthiness

Credibility, also known as internal validity, is a critical aspect in this study as in all qualitative research. Traditionally, internal validity is seen within quantitative research. Internal validity refers to the manner a study is carried out where irrelevant factors are ruled out to achieve an accuracy of the data collected. Qualitative research does not rely on controlling these irrelevant factors because it views reality through the social constructs of individuals that are interpreted rather than measured (Johnson & Waterfield, 2004). There are several ways to achieving credibility within qualitative research. An appropriate strategy for this research study to maintain credibility would be to utilize respondent validation. Respondent validation, or member checking, allows for the participant to review data collected to challenge or confirm its legitimacy (Johnson & Waterfield, 2004). Using member checking does present some difficulties. Johnson and Waterfield (2004) warns researchers that the challenges associated with this method range from poor recall, participants changing their minds, or having different experiences over the interview time. The interview process for this research will be recorded and transcribed. The participants before analysis to confirm its accuracy will review all transcriptions of the interviews.

Transferability in qualitative research is used synonymously with external validity in quantitative research. External validity in quantitative research refers to results being generalized from one study to another and other situations or population. The ability to use a working hypothesis or research findings in one setting and transfer it to another setting is referred to transferability. Transferability is often difficult because the population's size is often smaller than seen in quantitative research (Thomas & Magilvy, 2011). Although considered difficult it is not impossible. One strategy described by Thomas and Magilvy (2011) is the use of thick description. This involves researchers giving "a dense description of the population studied by providing descriptions of demographics and geographic boundaries of the study" (Thomas & Magilvy, 2011, p.153).

Another concept of trustworthiness for this research is dependability or reliability. Reliability in quantitative research speaks to the fact a researcher can use the same methods, content, and participants, similar results would be produced (Thomas & Magilvy, 2011). With qualitative research, the changing nature of phenomena renders a problem in achieving reliability in the same manner. Johnson and Waterfield (2004) state instead of seeking to achieve reliability in the sense of quantitative methods, researchers should present their analysis and interpretations in a manner that is easily understood in how they arrived at their conclusion. A strategy that is tailored for this is an audit trail. An auditor who reviews a sample of records and supporting documents is the concept of an audit trail. This strategy of dependability is not as costly as triangulation but renders comparable results (Thomas & Magilvy, 2011).

Once there has been credibility, transferability, and dependability the researcher can now assume confirmability of the research. Confirmability sees the research objectively. Confirmability is increased when researchers limit biased interpretations and include results of the participants and not that of the researcher. Thomas and Magilvy (2011) warn and encourage researchers to not use their meanings of words and slang, but to have participants describe in their words what they are trying to say.

Ethical Procedures

The recruitment of participants will be from churches and community center organizations. As mentioned before a description of the study will be presented to the leaders of the various churches and community organizations. This presentation will be used to receive permission for the inclusion questionnaire to be distributed. Because the study consisted of human participants, approval from the Walden University Institutional Review Board was a necessity for this study. Participants will be African Americans, at least 18 years of age, have a family history of T2DM, and have not been diagnosed themselves.

Potential participants will be given a questionnaire summarizing the nature of the study and will determine the participant’s eligibility for the research. The questionnaire will service as permission to be contacted for follow-up if they meet the inclusion criteria. A signed consent form will be obtained before any interviews are conducted. Participants will have an opportunity to ask any questions in person or via email prior to signing the consent form and before the interview is started. A signed consent form does not obligate anyone from continuing the interview process. Participants will be allowed to opt out of the study even after a consent form has been signed. Their information will be immediately destroyed. The next eligible participant will be contacted. If a participant withdraws from the study after an interview has been conducted, they too will have their information removed from the data collections and not included in the analysis. All information from the questionnaire will be kept in a locked safe box in a home office that has monitored security for five years before being securely destroyed. The same will apply for all transcriptions of interviews that are done by participants. Data that is collected and analyzed along with the NVivo software will be securely kept on a password protected thumb drive that will also be placed in the locked safe box.

Summary

T2DM is affecting millions of people each year. This study will provide African Americans the opportunity to express their concerns about the disease. The study will offer a forum for individuals to communicate how they are dealing with the reality of living with a family history of T2DM. Participants from churches and community centers will be selected from an inclusion survey. This survey will be distributed after getting permission from influential pastors and community leaders. The study will follow all major guidelines to protect the participants while reducing bias and strengthening the validity of the study. Data will be collected via face-to-face interviews and analyzed with the assistance of NVivo qualitative software.

Chapter 4: Results

Introduction

The overall purpose of this study was to understand the influence a family of T2DM has on positive health behavior changes within African Americans. A participant’s knowledge of the disease, prevention strategies, family and personal health behavior, and barriers to change in health were analyzed using various questions centered around the following research questions:

RQ1: Does the knowledge and understanding of a family history of diabetes promote positive health behavior changes among African Americans?

RQ2: For individuals who have not made any changes toward prevention, what are the barriers that have prevented change in their lifestyles?

In this chapter, I discuss the demographics of the participants, the data collection and analysis, the results, and the evidence of trustworthiness for this study.

Settings

There were no personal or organizational conditions that influenced participants during the study. There were times when interviews were rescheduled due to a time conflict. Furthermore, there were no personnel changes or budget cuts during this study. Participants worked with one researcher for the entire study.

Demographics

The study consisted of six men and 14 women. All the participants self-identified as African American; most reported a birthplace within the United States. Only five participants reported having a birthplace outside of the United States. Although these five participant's birthplaces were located outside of the United States, their time of legal residence within the United States was at least 5 years or more. Participants ages ranged from 25-60 years old. All of the participants lived in either Prince George's, Howard, or Montgomery County in Maryland. Participants' highest level of education completed ranged from "some college" to "graduate degree" (see Table 1).

Table 1

Frequencies and Percentages for Participant Demographics

Demographic characteristics	*Frequency N* = 20	*Percentage*
Gender		
Male	6	30
Female	14	70
Origin of birthplace		
USA	15	75
Other	5	25
Highest level of education completed		
Some college	3	15
Bachelor's degree	8	40
Master's degree	6	30
Ph.D./PharmD/DPT	3	15

Data Collection

Data collection began in December 2017 after receiving Institutional Review Board approval (approval number 11-14-17-0165848). I sent e-mails to local churches asking to schedule time to speak with the pastor about the study and obtain their permission to recruit participants in their congregation (see Appendix D). Four of the seven e-mails were answered. After speaking in detail with the pastor or the health ministry leader of the church, permission was granted from three churches to make a presentation and distribute inclusion surveys (see Appendix A, B, and C). Participants were required to reside the counties of Prince George's, Howard, or Montgomery. I used a purposive sampling size of the first 20 eligible participants for this study. I gave all eligible participants a consent form. I welcomed questions about the study and answered them appropriately in person before having the participant sign the consent form. I gave all participants the opportunity to decline participation in the study at any given time. I also ensured that their information would be kept confidential and secure. Names of the participants were left out of the recordings and on transcriptions.

Participants scheduled interview times via e-mail correspondence or phone. Locations for the face-to-face interviews were a library conference room and private offices. All of the locations were mutually agreed upon areas to ensure safe environment for all involved. I conducted only one video conference via Skype during this study due to a scheduling conflict, and I only recorded the audio portion of the interview. I recorded the interviews with a tape-recording application. I transcribed all interviews and organized them with NVivo Version 12 for Mac computers.

Data Analysis

I analyzed each response from the interviews for common themes. The open-ended questions allowed for elaborate responses. The questions for the interviews were designed to address the following areas of concern for this research study: (1) knowledge of diabetes and prevention, (2) the participant's family history and events around diabetes, and (3) the participant's health behavior. "Knowledge," "Family History," and

“Personal Health Behavior” were the first three themes created. Another theme that was created was “Barriers.” This theme was created to analyze the responses given to overall and personal barriers hindering change in health behaviors. Other themes emerged after reading over the transcriptions and discovering common responses within the original themes. Graphs, tables, and figures assisted in the breakdown of the data. Notes were also taken on participant facial expressions and body positioning details.

Evidence of Trustworthiness

Credibility

I maintained credibility, or internal validity, for this qualitative research study with the strategies mentioned earlier with respondent validation. Participants were able to review and discuss their transcription for the accuracy of the responses that were given during the interview. All questions from the interview were clarified with an example if the participants were unsure what was being asking. However, the participants were never led in giving their responses. I encouraged participants to answer each question to the best of their ability. Although rare during the study, answers were omitted if the participant did not have a response to the question. In the event a question had already been asked, participants were given the opportunity to add to their answers. Several incidents were recorded where other questions were supplemented with a follow up question for clarification or comprehension.

Transferability

Transferability, or external validity, was achieved even with the participants all self-identifying as African American. The questions presented never asked about race or culture. The participants' responses were similar due to the African American culture. However, this same study along with the research questions and hypotheses would be able to transcend across all ethnicities and races. The transferability of the study would provide for a robust research study geared as studying all at-risk ethnicities.

Dependability

Dependability for this research was achieved with a rich pool of participants, even for a qualitative research study. Initially, I set the number of participants for six to 10 individuals. To strengthen the dependability of the research, I decided to use 20 participants from whom to collect data that was robust in information. This was particularly evident in the areas of the research where individuals were asked if health prevention was a usual topic of discussion while growing up. With this being said, there was a lack of dependability for the selection of participants to represent an entire race or ethnic group. While the responses were similar during this study, it would be hard to predict if the same would happen again with a different group of participants. There were strong similarities within the participation pool regarding educational background.

Confirmability

The study allowed for face-to-face interviews. All interviews were treated the same whether they were conducted in person or by video conference. The participants where made comfortable with the mutual acceptance of a meeting area, including the video conference for the one participant. The setting and environment of the interviews allowed for honesty and transparency. There was no apparent difference in the responses from those who interviewed in person compared to the one interview conducted via

Skype. I encouraged participants to stop in the interview process if they felt uncomfortable at any point during the interview. I allowed participants to answer freely during the interview process. There were times where answers led to different questions. This enriched the responses given and provided more data than what I anticipated. As mentioned before, I never coached participants for their responses. I encouraged everyone to answer questions in their own words and to the best of their knowledge and rely on their own experiences. I also asked participants if they had questions before and after the study to ensure all concerns were addressed.

Results of Study

The interviews were transcribed and recorded into NVivo for analysis. I addressed the results of the study using the research questions, hypotheses, and the themes that were created from the data analysis:

> RQ1: Does the knowledge and understanding of a family history of diabetes promote positive health behavior changes among African Americans?
>
> > H_a1: Knowledge and understanding of a family history of diabetes does promote positive health behavior change among African Americans.
> >
> > H_01: Knowledge and understanding of a family history of diabetes does not promote positive health behavior change among African Americans.
>
> RQ2: For individuals who have not made any changes toward prevention, what are the barriers that have prevented change in their lifestyle?
>
> > H_a2: Barriers play a major role in preventing individuals from making positive health behavior changes in their lifestyle.

$H_0 2$: Barriers do not play a major role in preventing individuals from making health behavior changes in their lifestyle.

Knowledge of Type 2 Diabetes Mellitus

To understand the impact knowledge of a family history of T2DM has on positive health behavior change, it was important to first determine if individuals knew the facts surrounding the disease. Three questions from the interview gauged the overall knowledge of T2DM by assessing its meaning, the signs and symptoms of the disease, and risk factors associated with the disease. Participants had an array of definitions for diabetes, with all of the responses making a connection with T2DM being a disease of the pancreas and the body’s inability to process carbohydrates. The most commonly used words or phrases in the definitions included “insulin” or “sugar” in conjunction with the “body’s inability to process sugar.” Examples of the responses included “diabetes is a disease that affects the pancreas, or your body’s ability to produce or secrete insulin” (Participant 201701) and “the failure of the pancreas to produce enough insulin to efficiently metabolize sugars and carbohydrates” (Participant 201703).

Individuals were also asked to identify risk factors that were associated with T2DM. The premise behind this question was to help link the awareness that family history is a known risk factor. The most identified risk factors included poor diet, obesity, a sedentary lifestyle, and heredity. Seventy percent of the responses mentioned poor diet as a risk factor while only 55% of the responses recognized there is a hereditary link to developing T2DM (see Figure 1).

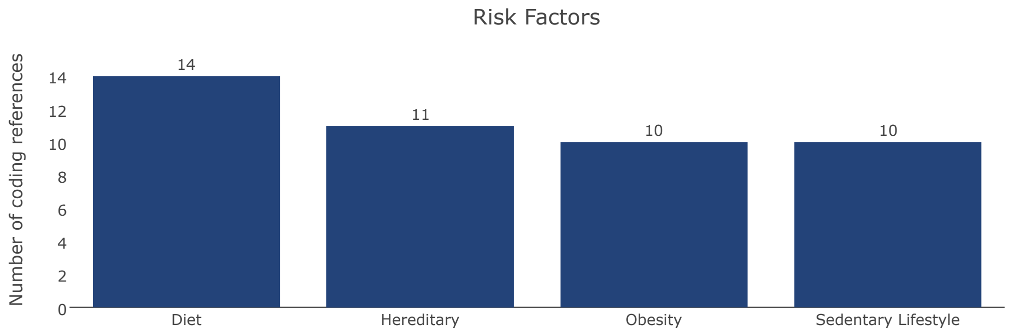

Figure 1. Risk factors associated with T2DM according to study participants.

Prevention and awareness are important factors when dealing with chronic diseases and public health. The participants were asked to share their knowledge and thoughts surrounding ways individuals could prevent developing T2DM. Overwhelming, all of the participants gave a response that either centered around either changing one's diet, increasing physical activity, weight control, or seeing their doctor regularly (see Figure 2). Diet changes included limiting sugar intake or moving from an animal-based to a plant-based diet. Exercising was defined as being involved in cardio related activities for at least 30 minutes a day for three to five days a week. Several participant's responses reflected on at least three or all of these prevention modalities.

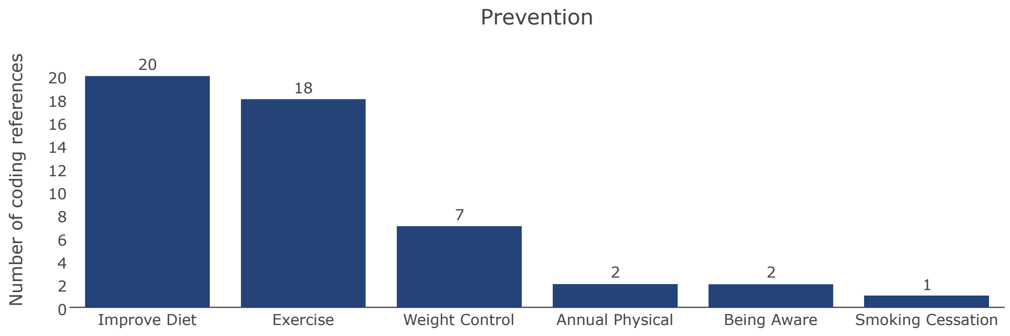

Figure 2. Prevention of T2DM according to the responses of the participants.

Personal Health Behavior

The HBM suggests that health-related decision making is determined by (a) perceptions about one's susceptibility to and (b) severity of the illness, (c) perceived benefits of treatment, (d) perceived barriers to seeking care, and (e) cues to action (Glanz et al., 2008; Hayden, 2014). The questions asked during this study that focused on personal health behavior were able to ascertain one or more of the concepts from the HBM. Participants were first asked to describe their feelings surrounding the fact they had a family member who lived or was living with T2DM. The responses varied from "conscious" to "no feelings at all." Others had different responses that expressed "sadness" or "no reaction."

Interestingly three participants communicated how they felt with describing situational events which occurred in their life with a family member or themselves. Participant 201701 expressed *"…there was no concern until their father had a heart* *attack."* Participant 201703 stated the following *"…then I went to the doctor and they told me that my sugar level was high and that if I didn't do something that I was probably going to be diabetic; so that made me feel like OK, I need to get things in check."* When Participant 201702 saw their family member having to take insulin injections, this was the turning point for them to say *"…that was something that I said I do not ever want to have to do…"* (see Figure 3).

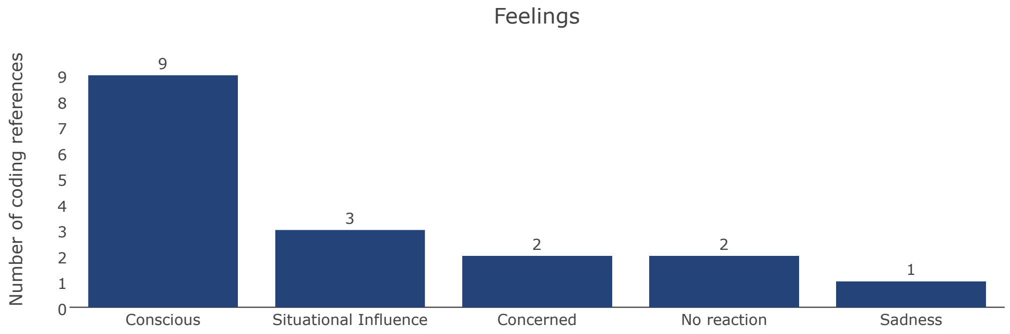

Figure 3. Participant's expressed feeling towards family history of T2DM.

Personal health behavior also examined participant's actions as it pertained to the prevention of T2DM. Participants were asked to give details of their own health related behavior in reference to their own family history of T2DM. Only one participant stated their knowledge of the disease and their family contributed little to their overall health behavior. "It has had very little influence. I'm sitting here, and I'm embarrassed to say that; it has had very little influence beyond the fact of me being aware." (Participant 201701). The remaining individuals of the study expressed actions and behavior patterns such as: “I purposely watch a lot of what I eat, as far as fat content and sugar content.” (Participant 201708); “I try to exercise regularly and limit my sugar intake, and then I go to get my regular checkups like yearly that include blood work.” (Participant 201711); “I have significantly reduced my sugar intake; I think the weight gain and knowing my grandfather’s history made me a little nervous because I love sugar. I think that's probably the biggest thing I have modified--my diet overall, but sugar has been the thing I have had to pay more attention to” (Participant 201712). Participants were very interested in the study and how they could better their status. Some individuals saw this study as an opportunity to start their change in health for better. Others even saw this as study as a wake-up call to how much really is not known about the T2DM.

Barriers

The second research question is an intricate part of this study and to the HBM design. The question relates to the participant’s self-awareness of negative behavior or the lack of positive behavior. The interview questions linked to the second research question asked participants to explain in their own words “barriers to change in health” from an overall point-of-view. The participants were then asked to identify any barriers within their personal lives they felt were averting them in making positive health behavior changes or altering negative health behaviors. When asked to define “barriers to change in health” all of the participants described the phrase as something that hinders change from happening. Participants gave a variety of reasons for barriers within their life. Some stated “self” was the barrier in their own life. One participant eloquently stated, “The biggest barrier or obstacle, I find personally, in my productivity is me—I am my biggest obstacle” (Participant 201701). Participant 201702 expressed the same by saying “My own laziness--the barrier is me just being lazy. I can definitely do better…”.

Others found their professional work life, school, or family responsibilities deprived them of time they needed to incorporate positive changes in their schedules. Participant 201708 shared the following: “My barrier right now is time. Right now, I have an hour commute in the morning, and then I work 9-10 hours a day. Then I have another hour commute home. Just enough time to take my daughter to swimming class or spending a couple of hours with her making dinner and then going to bed. I think my personal schedule is the biggest barrier to anything.”

Other participants wanted to invest in their health but realized it would take time, effort, and commitment to maintaining—things many of the participants did not know how to include in their compressed schedule—"I think free time is a lot of it. …it can take anywhere from an hour to two hours one way to get to work. I would definitely go to the gym if I had more time. If I go to the gym, I have to sacrifice something else” (Participant 201710).

Summary

The participant’s responses were helpful for this research study. The responses provided an abundance of information to contribute to understanding the impact a family history of T2DM has on personal health behavior changes within African-Americans. Results showed how individuals understand the disease of T2DM and the risk factors associated with the disease. The participants also were able to express how their family member’s experiences of care impacted their actions or the lack thereof. Responses were open, honest, and comprehensive. The information gained from the results will be valuable to the final analysis of this study and how it benefits positive social change. Chapter 5 will provide the interpretation of the findings along with the implication for positive social change, recommendation, and conclusion to this research study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to understand the impact knowledge of a family history of T2DM has on positive health behavior changes in individuals in the African American community. From various churches in Maryland, I recruited individuals who knew they had a family history of T2DM but who were not themselves diagnosed with T2DM. A qualitative research method was guided by the theoretical framework of the HBM and a phenomenological design. The HBM, which is for uncovering personal beliefs that influence health-seeking behavior change (Tang et al., 2015) directed the conversation of participants' awareness and knowledge of T2DM, their current health belief, their recommended preventive activities, and the meaning they ascribe to the phrase "barriers to change in health." I conducted the interviews to illuminate the phenomenon of living with a known family history of T2DM. At times, individuals reflected on the actions of their family members who were diagnosed and lived with T2DM.

Furthermore, individuals were asked to speak about their willingness to make positive health changes while confronting their firsthand experiences of perceived barriers. This study of how a family history of T2DM impacts positive health behavior change and how a family history of the disease is seen as a risk factor helps fill the gap in the literature of awareness of T2DM and its overall risk factors. The study was only conducted amongst African American. Therefore, this study provides an example and resource for further research to be conducted among other ethnicities who are also deeply affected by T2DM. In this chapter, I present the interpretation of the findings and the limitations associated with the study in the first section. In the second portion of the chapter I discuss the recommendations for future studies, implementation for positive social change, and the conclusion of the study.

Interpretation of the Findings

Awareness of a disease's risk factors and preventive measures are paramount for positive health behavior and incorporating lifestyle changes. However, how persons see themselves as being susceptible to developing a disease and how they use the information is the cornerstone of the HBM. This study examined how a family history of T2DM influenced individuals in the African American community in their actions towards positive health behavior change. The study also examined participant's ideas regarding general and personal barriers to such changes. Whether or not individuals were involved in preventive activities, the participants discussed how barriers played a role in health behavior changes in the general public and for themselves.

There were several themes that emerged from the interviews. In the beginning of the study I examined individual's knowledge of T2DM. I asked participants to give a definition of diabetes in their own words. Next, I asked the participants to share signs, symptoms, and risk factors associated with T2DM. The assessment of knowledge concluded with participants sharing their understanding of preventive actions that are recommended by healthcare providers to help reduce a person's chances of developing T2DM. *Stedman's Medical Dictionary* (2005) defines T2DM as a disease that affects the body's ability effectively to break down sugar for the consumption of energy due to insulin resistance. Compared to the *Stedman's Medical Dictionary* definition of T2DM, participants showed a strong fundamental knowledge of T2DM from the responses provided. Each response provided by the participants alluded to how diabetes was the body's inability to process sugar effectively. Many of the participants were able to identify the pancreas was involved in the process of T2DM as the dysfunctional organ. Every individual in the study was also able to give appropriate signs and symptoms of how someone may present with T2DM, which included having extreme thirst, being obese, consuming a diet rich of foods high in fats, sugar, and salt, or having frequent urination. While participants were able to recognize many risk factors associated with the disease, only 11 of 20 of the responses (55%) recognized a family history as being a risk factor for developing T2DM. Much of the responses acknowledged modifiable risk factors such as obesity and a sedentary lifestyle. The later correlates with the overwhelming answers given from participants with respect to prevention of the disease. Participants' preventive activities focused more on managing weight with a healthy diet and engaging in cardio-related exercises. These findings are in a horizontal alignment with the current research, which shows healthcare providers stress the importance of awareness through modifiable risk factors, whereas family history is rarely emphasized enough during awareness campaigns on the prevention of diabetes (Geiss et al., 2017).

The second theme of the study was centered around personal health behavior. As mentioned before, participants were asked about prevention activities earlier in the study. This question was followed up with a discussion about the participant's health beliefs and behaviors. According to this study, there was broad acknowledgment that more needed to be done by each participant as it pertained to preventive efforts. The proposed activities involved eating a healthier diet with more fruits and vegetables, doing more cardio-related exercises for at least 30 minutes a day, and seeing a healthcare provider annually for a physical and routine check-up. Interestingly, only one participant did not actively engage in any type of the preventive actions mentioned above, although that participant was aware of the potential complication of T2DM. Furthermore, only three participants actively sought out preventive care with annual health visits to their primary care physicians; these findings show a disconnect to current literature as it pertains to annual health maintenance. Current recommendations for annual health visits have shown benefits with earlier detection in cancers and preventable diseases, along with proper management of chronic diseases (Hain, 2014).

To answer the first research question—Does the knowledge and understanding of the family history of diabetes promote positive health behavior changes in African Americans?—it was essential to compare answers given from two specific questions in the interview. The primary goal was to understand the responses provided by the participants to how their actions have been influenced by having a family history of T2DM and cross-referencing individuals' answers to current preventive actions in their lives. This reference, ideally, would help answer the question how a family history has impacted positive health behavior change for these participants. All of the participants understood the complications of the disease, such as blindness, extremity loss, or future kidney disease. The responses given to health-related changes for a better life and prevention of T2DM showed a family history of T2DM influenced a majority of the participants' actions in this study. All of the participants reflected on their family member’s current or past events while managing their lives with T2DM. Many participants spoke briefly of the difficulty of medication regimen and delivery methods with needle injections, dealing with kidney failure, or having a terrible wound infection that required critical care needs, including surgery. A majority of the participants (85%) were actively engaged with fitness and diet routines or had action plans in place to improve their overall health and well-being. Action planning refers to a person’s intent to change their behaviors with a specific *how, when,* and *where* (Kwasnicka, Presseau, White, & Sniehotta, 2013). Although there is a gap in the literature to explain how a family history influences positive health behavior changes in diabetes prevention, these findings align with the notion that family history does influence lifestyle modification when there is a known negative outcome to chronic diseases (Andersson et al., 2009).

The responses with action planning from participants aided in answering the second research question which asked the following: For individuals who have not made any changes toward prevention, what are the barriers that have prevented change in their lifestyles?. The core of the second research question was centered around the third theme of the study, which explored overall and personal barriers to change in health. Barriers to change in health has been defined as anything that hinders change to a specific goal or outcome in health. Barriers can be identified as financial, physical, emotional, or social (Miller, 2016). I asked participants in the interview to explain what “barriers to change in health” meant to them. Participants were able to provide a working definition for “barriers to change in health,” which in summary was something that prevented a change from happening. Common barriers such as financial constraints or limited access to gyms or healthcare were nonfactor for the participants in this study. Interestingly, for the few participants who recognized they had a barrier in their life, having enough time to make personal changes was the main culprit. A busy work and family schedule along with a lengthy commute to work proved to be a hindrance to implementing change. The second most common barrier after insufficient time was a lack of self-motivation. The barrier of self- motivation was noted in combination with access to time for many of the participants.

Limitations of the Study

There are several limitations to this study. The first limitation of the study was the sample size. Although there is a larger than recommended sample size for a qualitative study, this size does not fairly represent a larger community of African Americans. The sample size does not describe the entire population of African Americans in the studied counties. To have a fair representation of the African American community, a larger size would have been required.

A second limitation to address in this study was the lack of male participants in the research. Considering African Americans are the least represented race and ethnicity in research, this trend has been noted a in other research areas for African American males. Even within behavioral gerontology, there is a substantial underrepresentation of male participants (LaLonde, Zimmermann, & Poling, 2015). As noted earlier, only six of the 20 participants were male. From the churches that participated, this is an underrepresentation of the male population in the congregations that were addressed in this study. Everyone was encouraged to participate. Taking into consideration past unethical research practices among African Americans, there was no other clear reason for the lack of male participation.

The third limitation with this study was it only asked the experiences of African Americans. The study only focused on one community. As mentioned earlier, the African American community is affected the most from T2DM. However, this study does not focus on other ethnicities who are also vastly affected by T2DM. Allowing the study to engage anyone with a family history of T2DM may have shown different responses with consideration to culture, preventive health care beliefs, and barriers.

A fourth limitation of this study was the focus on a family history of one form of diabetes. There are other forms of diabetes and each presents in different populations or groups of individuals. A prime example of this would be found in GDM, which only occurs with women. This study excluded participants who may have had type 1 DM or GDM. Although this information is helpful, care planning from providers and awareness campaigns could only use this information in regard to T2DM.

Lastly, the study was also limited to individuals who self-identified as African American versus being of Black heritage. This study excluded many individuals who may identify as Black but were excluded because of their Caribbean, West Indian, Canadian, or African birthplace. The definition of African American limited the participant pool. Being more inclusive of individuals as Black versus African American may have added to the participant pool while adding some difference in cultural responses.

Recommendations

As mentioned above, one of the limitations to this study showed a lack of representation to the African American community. The participants that were left out were due to the self-identification of being African American versus Black. Changing the criteria of the ethnicity background would provide a more robust discussion and show a difference of cultures within the same race. Further research would include persons who are born in any country but are considered Black. The participants interviewed in this study were well educated about the complications of T2DM. Many responses mentioned the wishes of not becoming blind, developing kidney failure, or having an amputation. Some of these events did occur with a few participant's family members. This suggests the participant's actions to change were motivated by catastrophic events versus having a family history. Further research could follow up this hypothesis that change in health behavior is only impacted by life-altering events.

Another recommendation for further research would be to follow up with the same participants later to see how their attitudes have changed since the study. Some of the participants expressed with great sincerity their need for change and wanting to do more as it pertained to positive health behavior changes. Some expressed the need to exercise more while others wanted to transition to a plant-based diet. Others communicated the need to visit their primary care physician more on a regular basis. There were several reasons mentioned that was the driving force to doing better for their health overall. Some of these reasons included being a better example for their children, wanting to be around longer for their family, or just feeling confident in their body and health. There would be a great benefit in researching to see how those who wanted to do more in their lives with regards to positive health behavior change are doing since the end of the study.

Implications

Individuals within the African American community who had a family history of T2DM was the nucleus of this study. Despite the limitations mentioned earlier, this study has many positive social change implications for the African American and public health communities. The study delved into the communication of health topics within the family and home. Fifty percent of the participants stated health and disease prevention was not a usual topic of discussion in their home growing up. This study could be the catalyst to starting the conversation of disease prevention in the home at an earlier age. Butler and Mead (2010) both suggest beginning preventive health messages during the earliest time of developing lifelong habits. The idea of preventive messages within the home at an earlier age feeds into the idea of changing the mind of generations to come. This study provides a sense of generational awareness of T2DM, and the critical impact family history has on disease prevention. A proposed outcome of social change from this study is for nuclear families to have preventive health behavior conversations with their children. The study brings to the forefront the need to address health topics not only in the doctor’s office but more in the home and communities. Health communication strengthens awareness, which in hope encourages action for positive health behavior change at an earlier age.

Awareness, just like communication, is twofold. Awareness campaigns for the community are developed with strategic plans in place with all stakeholders in mind. Policymakers, being a significant contributor to the class of stakeholders, are intricate to the implementation of positive social change. Many African Americans communities are stricken with poverty and less than favorable access to healthcare. Policymakers should be made aware of the challenges such communities face. To fully comprehend the barriers affecting many communities, the difficult conversations between those affected and those who can help with change needs to happen more often face-to-face. Just as this study was able to highlight barriers for participants, town hall meetings should occur to have the voices of the communities heard by the policymakers. Change can only take place if people are willing to accept the fact barriers exist and are disproportionate to various communities. Social determinates play a major role in access to healthcare, knowledge and understanding of disease awareness and prevention, and an individual’s overall health outcome to chronic disease. More specifically, in communities where socioeconomic disadvantages are the significant barriers, it is proposed policymakers and public health officials should gather in communities to hear firsthand how healthier eating options are not as available or affordable in some communities. The options to eat healthier are at times for more expensive to families who may be struggling financially versus others who are able to afford a desired meal plan that is organic, plant-based, or vegan (Kwasnicka et al., 2013). Awareness to every component of this multifaceted problem is the key to proper change.

Social change also pertains to building and maintaining meaningful relationships between the health providers and the communities they serve. This study sheds light on how one can strengthen the healthcare provider and patient relationship, especially among the African American community. African Americans have a deep history of mistrust from health providers dating back to the Tuskegee Experiments (Sharma, 2010). This mistrust of care has planted seeds of doubt for many generations. Specifically, health care providers can use the interview questions as a guide to engage their patients to be open about their knowledge of a disease, their family history, their own health care practices or beliefs, and personal barriers within their lives which inhibit positive health behavior changes. Furthermore, providers should allow their patients to be more involved in their healthcare making decisions and tailor an action plan to their current lifestyle and recognizable barriers.

Conclusion

According to the CDC, there are more than 29 million people living in America who are diagnosed with T2DM and nearly 60 million individuals who are prediabetic (CDC, 2014). This puts a financial burden on the healthcare system which paid $245 billion only for T2DM and complications associated with the disease in 2012 (Subramanian, Midha, & Chellapilla, 2017). The predicted increase in prevalence, especially among the African American community, has made diabetes a public health concern. The increase has set off a chain reaction of care planning. The main goal for T2DM in the public health realm is geared towards awareness. Awareness focuses on bringing attention to modifiable risk factors. The hope is awareness will promote preventive actions with lifestyle modification for obesity and a sedentary lifestyle. These modifications include increasing physical activity and eating a healthy diet. Furthermore, awareness campaigns should also shed light on non-modifiable risk factors, such as a family history of T2DM. Preventative actions can still be put into place while encouraging individuals to visit their healthcare providers routinely to have blood work done which could detect the disease.

This study, with the limitations mentioned, proved to show an individual's family history of T2DM was a strong influence in positive health behavior change for the participants involved. Continuing to focus on awareness and prevention, this study subscribes to the idea of making family history, a non-modifiable risk factor, just as important as modifiable risk factors. Family history, although it is not a modifiable risk factor, should be added to the awareness campaign. Having providers and patients understand the overall dangers of T2DM with an added focused on family history can be beneficial to all involved. The topic of family history opens the pipe lines of discussion not only for T2DM but other health care concerns. The provider and patient relationship becomes stronger than ever and flourishes.

Barriers became a topic of discussion as well. Individuals within this study were able to realize the true definition of a barrier and how barriers impacted their desires to do better. Barriers for these participants mainly dealt with time. Fortunately, access to healthy food or a gym membership were not a part of the barriers to change in health for this study. The main goal to overcoming barriers was to set realistic expectations and start small. Setting realistic action plans and expectations aid in an overall better outcome. Furthermore, individuals had a chance to be honest about these goals while taking into considerations their acknowledged barriers. Not all barriers can be modified. However, recognizing that barriers exist and having the difficult conversations between communities and all stakeholders is the beginning many are looking for to start a new healthy lifestyle.

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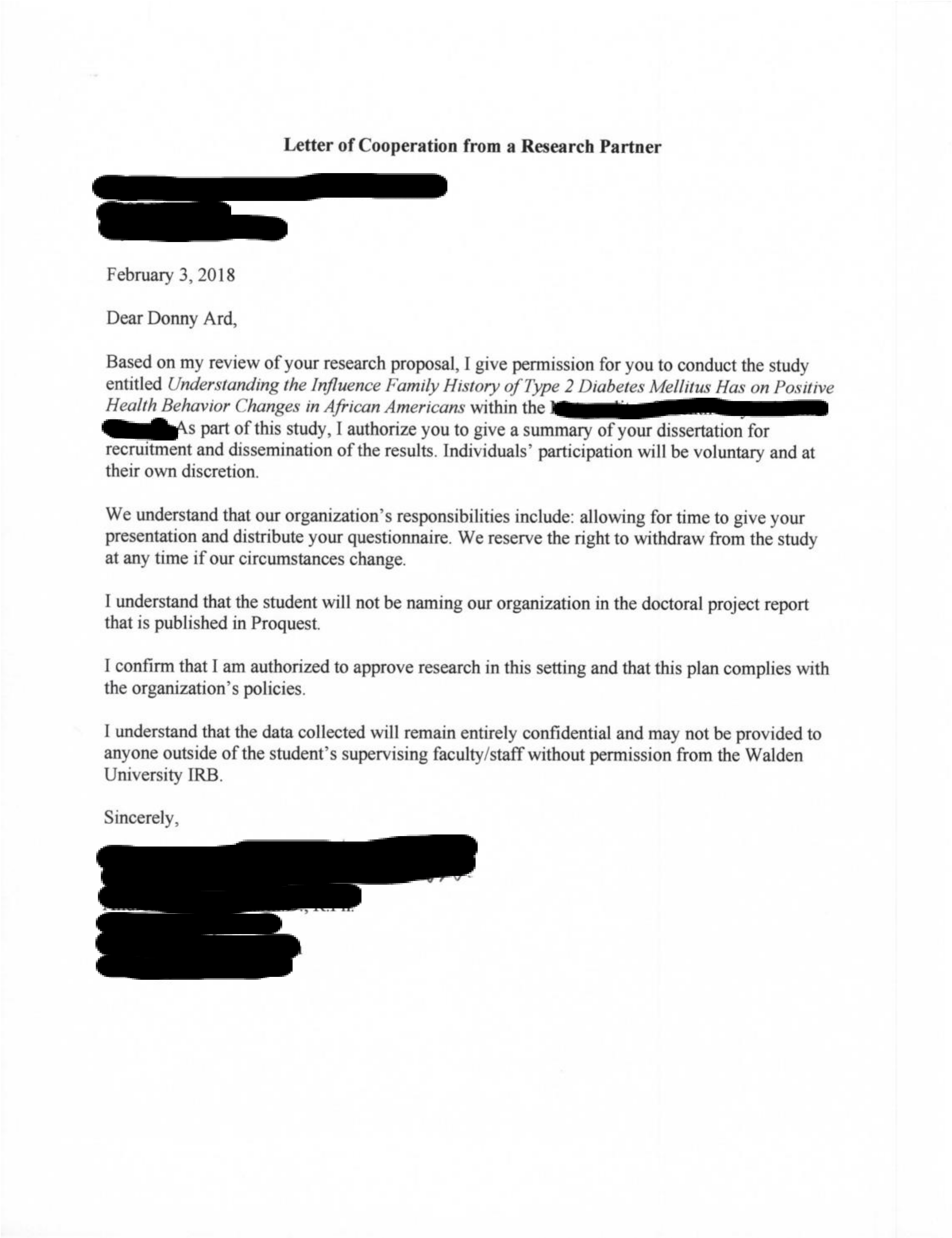
Appendix A: Letter of Cooperation



Letter of Cooperation from a Research Partner

[redacted]

February 3, 2018

Dear Donny Ard,

Based on my review of your research proposal, I give permission for you to conduct the study entitled *Understanding the Influence Family History of Type 2 Diabetes Mellitus Has on Positive Health Behavior Changes in African Americans* within the [redacted] As part of this study, I authorize you to give a summary of your dissertation for recruitment and dissemination of the results. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: allowing for time to give your presentation and distribute your questionnaire. We reserve the right to withdraw from the study at any time if our circumstances change.

I understand that the student will not be naming our organization in the doctoral project report that is published in Proquest.

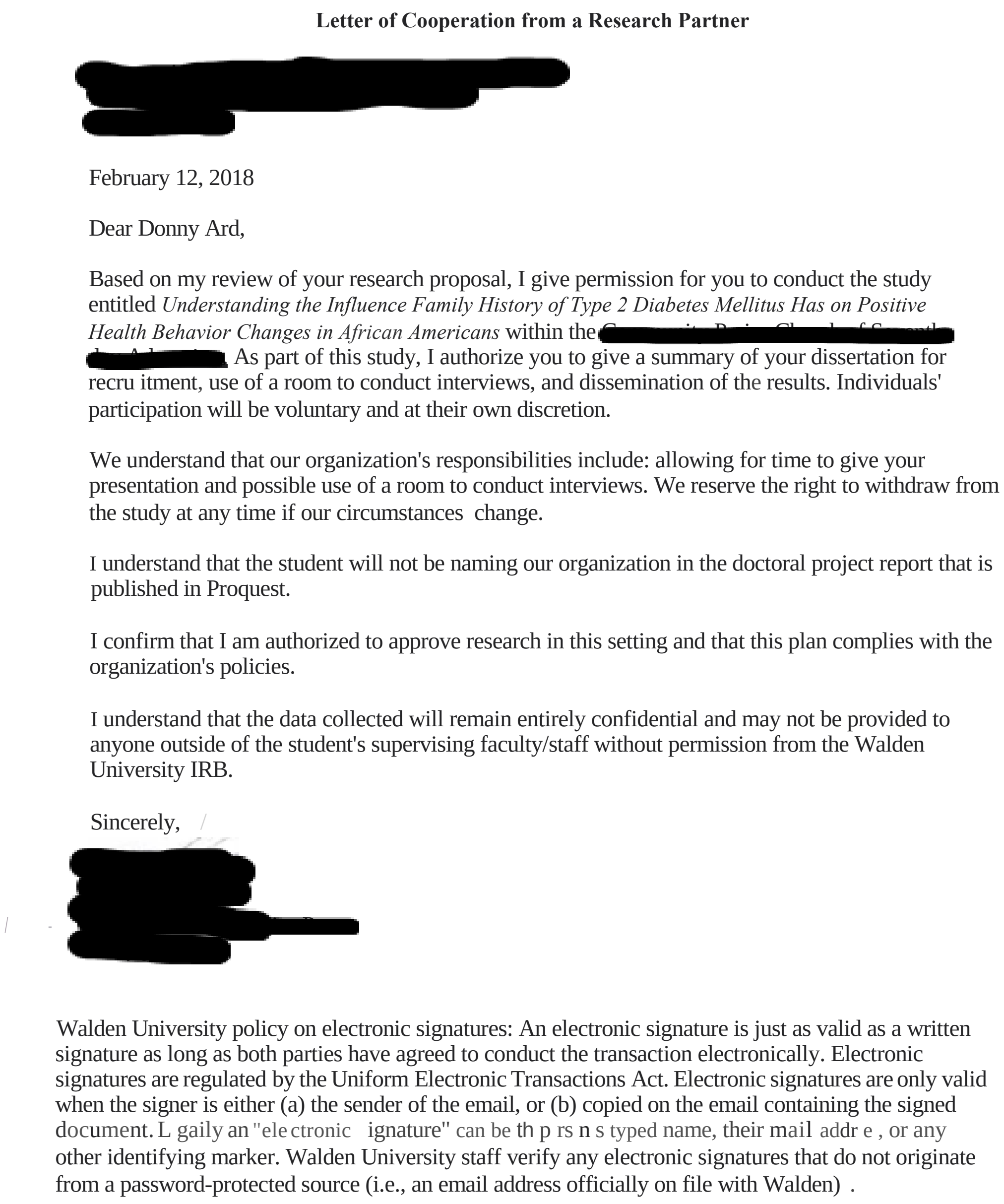
I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

[redacted]

Appendix B: Letter of Cooperation



Letter of Cooperation from a Research Partner

[redacted]

February 12, 2018

Dear Donny Ard,

Based on my review of your research proposal, I give permission for you to conduct the study entitled *Understanding the Influence Family History of Type 2 Diabetes Mellitus Has on Positive Health Behavior Changes in African Americans* within the [redacted]. As part of this study, I authorize you to give a summary of your dissertation for recruitment, use of a room to conduct interviews, and dissemination of the results. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: allowing for time to give your presentation and possible use of a room to conduct interviews. We reserve the right to withdraw from the study at any time if our circumstances change.

I understand that the student will not be naming our organization in the doctoral project report that is published in Proquest.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

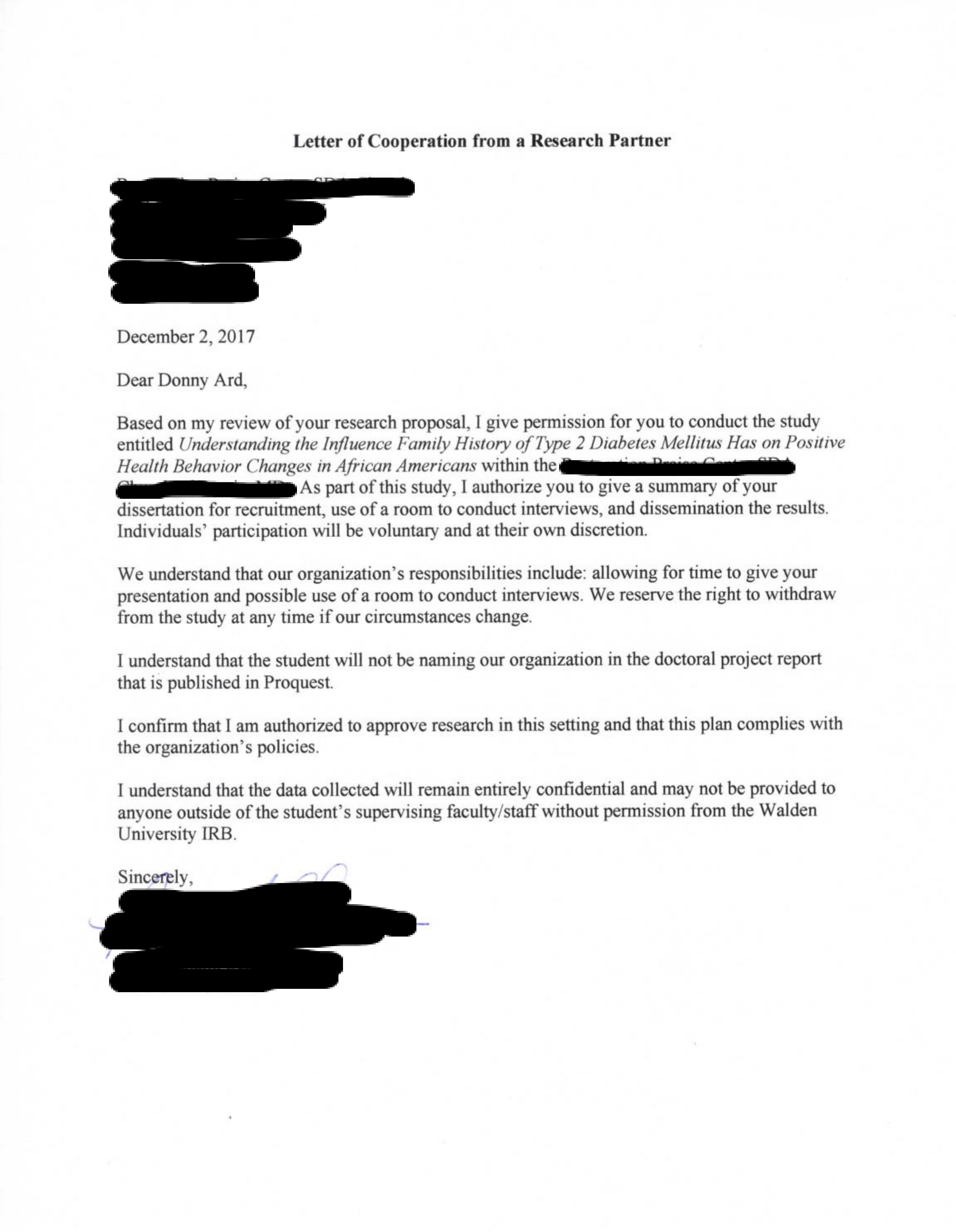
I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

[redacted]

Walden University policy on electronic signatures: An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically. Electronic signatures are regulated by the Uniform Electronic Transactions Act. Electronic signatures are only valid when the signer is either (a) the sender of the email, or (b) copied on the email containing the signed document. Legally an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. Walden University staff verify any electronic signatures that do not originate from a password-protected source (i.e., an email address officially on file with Walden).

Appendix C: Letter of Cooperation



Letter of Cooperation from a Research Partner

[redacted]

December 2, 2017

Dear Donny Ard,

Based on my review of your research proposal, I give permission for you to conduct the study entitled *Understanding the Influence Family History of Type 2 Diabetes Mellitus Has on Positive Health Behavior Changes in African Americans* within the [redacted] As part of this study, I authorize you to give a summary of your dissertation for recruitment, use of a room to conduct interviews, and dissemination the results. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include: allowing for time to give your presentation and possible use of a room to conduct interviews. We reserve the right to withdraw from the study at any time if our circumstances change.

I understand that the student will not be naming our organization in the doctoral project report that is published in Proquest.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

[redacted]

Appendix D: Statement of Invitation

DONNY ARD, MHA, PA-C

[redacted]

Date

Recipient
Title
Company
Street Address
City, ST ZIP Code

Dear Recipient:

My name is Donny Ard. I am a doctoral candidate at Walden University. I am currently preparing my dissertation on understanding the influence a family history of type 2 diabetes has on individuals and their mindset to make positive health behavior changes and choices in the African American community. Diabetes is a disease that affects the African American community nationwide. It is also a disease that can have a devastating outcome if not appropriately managed. There is hope in prevention with education and awareness.

I am looking to recruit individuals who are at least 18 years of age, male or female, have a family history of the disease, but do not have the disease themselves. I would like to have an interview with them to ask a series of questions that pertain to my dissertation topic and interest. I would love to have the opportunity to speak with your congregation one morning before your main church service to explain my dissertation and my goal of recruitment briefly. In that, I would like to ask for your permission to speak with your congregation to disseminate my questionnaires for recruitment. I would also be willing to talk with you further in person or via telephone to answer any questions or concerns you may have.

I thank you in advance for your time and consideration, as well as the opportunity to work with and your congregation.

Sincerely,

Donny Ard, MHA, PA-C

Appendix E: Tool for Dissertation/Interview Questions

Interview Questions

Understanding the Influence Family History of Type 2 Diabetes Mellitus Has On Positive Health Behavior Changes in African Americans

RQ1-Does the knowledge and understanding of the family history of diabetes promote positive health behavior changes within African Americans?

H_a = Knowledge and understanding of a family history of diabetes does promote positive health behavior change within African Americans.

H_0 = Knowledge and understanding of a family history of diabetes does not promote positive health behavior change within African Americans.

RQ2-Individuals who have not made any changes toward prevention, what are the barriers that have prevented change within their lifestyle?

H_a= Barriers play a major role in preventing individuals from making positive health behavior changes in their lifestyle.

H_0 = Barriers do not play a major role in preventing individuals from making health behavior changes in their lifestyle.

The following questions will assess the participant's overall knowledge of diabetes and prevention:

1. In your own words, define diabetes.
2. What are signs and symptoms associated with diabetes?
3. What are risk factors associated with diabetes?
4. Describe ways a person can lower their chances of developing diabetes.

The following questions will assess the knowledge of their family history of diabetes:

5. Who in your family has been diagnosed with diabetes?
    a. Describe how knowing this particular family member, who has diabetes, made you feel.

    a. Have any of the following events happened to a family member due to diabetes: vision loss, kidney failure, or amputation of an extremity?

2. How were you made aware you had a family member with diabetes?
3. Were topics of health or health prevention discussed in your family?
    a. If yes, could you describe in detail what was discussed.

The following questions will assess participant's personal health behavior and barriers to change:

4. Please explain how knowing your family history of diabetes has influenced your actions with regards to prevention of diabetes.
5. Are there activities or actions you could do more of in your life that will lower your chances of developing diabetes?
    a. If yes, please describe them.
6. Are there activities or actions you could do less of in your life that will lower your chances of developing diabetes?
    a. If yes, please describe them.
7. In your own words, define the phrase "barriers to change in health".
8. Describe barriers in your life that have prevented you from making positive health behavior changes.

Appendix F: Inclusion Questionnaire

Inclusion Questionnaire

How old are you? _________ .
(If you are 17 years of age or younger, you will not be eligible to participate in this research study)

Please place mark an "X" next to the item that applies to you.
Male [ ] Female [ ]
If you are female, are you pregnant? Yes [ ] No [ ]
If yes, do you have gestational diabetes? Yes [ ] No [ ]
(If you are a pregnant female diagnosed with Gestation Diabetes, you will not be eligible to participate in this research study)

Are you living within a facility such as a prison, treatment facility, nursing home, assisted living, or group home for minors? Yes [ ] No [ ]
(If you answered "YES" to this question, you will not be eligible to participate in this study)

Are you a student within the AACC/UMB PA Program? Yes [ ] No [ ]
(If you answered "YES" to this question, you will not be eligible to participate in this study)

Please specify your ethnicity.
[ ] White
[ ] Hispanic or Latino
[ ] African American
[ ] Native American or American Indian
[ ] Asian / Pacific Islander.

Were you born within the United States? Yes [ ] No [ ]
If you "no" how long have you lived in the United States?______
(If you have lived in the United States less than 5 years, you will not be eligible for this research study)

Do you have a family member who has Type 2 Diabetes? Yes [ ] No [ ]

Do you have Type 2 Diabetes? Yes [ ] No [ ]

What is your highest level of completed education?
[ ] High School graduate
[ ] Some college
[ ] Associate's degree
[ ] Bachelor's degree
[ ] Master's degree
[ ] Ph.D./MD/JD/DDS

If you are interested in participating in a research study please provide your information below. I will be in contact with you to review the consent form and schedule an interview date, time, and location.

Name:______________________________

Contact information:

Telephone:_____________________ Email:_____________________

You may email this form to the researcher at [redacted]

Appendix G: Talking Points to Church Congregation

Good Morning to everyone.

My name is Donny Ard. I would like to thank your pastor (name of the pastor here) for allowing me this time to speak with you today. I am a Ph.D. student at Walden University, and I am currently recruiting participants for my research study on type 2 Diabetes prevention as it pertains to family history.

Diabetes mellitus is a disease that affects the body's ability to break down efficiently sugar for the consumption of energy. Just in 2000, there were over 171 million individuals who were diagnosed with type 2 diabetes. It is estimated that this will near double by 2030. Diabetes is a terrible disease and affects the African American community at alarming rates. African Americans are twice as likely to be predisposed to develop diabetes as white counterparts.

There are many risk factors associated with the disease. One that is overlooked is family history. There is still a family history link that predisposes individuals to develop the disease

There are billions of dollars spent each year in health care for the caring of patients with diabetes and the complications associated. The contrast to this spending is the decreased amount that is spent on prevention programs. Families with diabetes are paying 2-3 times more in medical cost than those who do not have diabetes. The public health system has a strong commitment to planning and implementing preemptive measures for preventable diseases such as diabetes.

My research is geared to understand the link between prevention and family history of diabetes. The goal of my study is to understand the relationship between African Americans who are aware they have a family history of diabetes and how that knowledge affects positive health behavior changes. With an understanding of how positive health behavior changes may be associated with the awareness of a family history of type 2 diabetes within African Americans, preventive measures can be developed and implemented that are tailored specifically to African Americans with a family history.

My being here today is to ask for your participation in this interview type research. I have an inclusion questionnaire with me today that will ask a few questions along with a consent form detailing the research. I am looking for male or females who are at least 18 years old, have a family history of type 2 diabetes, and self-identify as African American. If you are willing to participate, please take a questionnaire and a consent form with you today. If you have any questions, I will be available after your services to answer them.

Thank you for your time and I look forward to working with you.

Have a blessed day!