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Integrating Biblical Principles into Diabetes Self-Management Education for African Americans

Pandora Goode
Winston-Salem State University

Integrating Biblical Principles into Diabetes Self-Management Education for African Americans

In the United States, millions of Americans have been diagnosed with diabetes (Center for Disease Control [CDC], 2014). Diabetes affects people in all cultures, but the prevalence is predominately higher among African Americans, Hispanics, American Indians, and Alaskan Natives. The Center for Disease Control and Prevention noted that African Americans account for 13.2% of those affected by this chronic illness, making diabetes a serious concern in the African American community (CDC, 2014). Obesity, hypertension, and poor dietary habits in addition to environment, education, and cultural factors are reasons why African Americans are more at risk for developing diabetes (*Healthy People* 2020). Many African Americans nutritional practices were inherited from their cultural influences. These influences contribute to higher rates of obesity (49%) and being overweight (27%) among African Americans, which increases the risk of developing type 2 diabetes (T2D) (Flegal, Carroll, Kit, & Odgen, 2012). An understanding of African Americans characteristics and the influences these have on diabetes self-management behaviors is an important step in designing effective Diabetes Self-Management Education (DSME) programs. Faith-based programs are an appropriate conduit for individuals to acquire the diabetes knowledge needed to manage their disease and practice the lifestyle changes within their culture and community. Therefore, the purpose of this manuscript is to discuss integrating biblical principles with practical principles to help Christians understand how to manage this chronic illness.

Background

Spirituality is embedded within the culture of many African Americans. A program which includes a faith-based institution and faith-based messages has the potential to have compelling influences on diabetes beliefs and health care behaviors. An important connection for many African Americans is the local church, which is an organization that has major influences on individuals and on community life. Pastors are typically the gatekeepers for access to their members and are essential in developing a trusting and working relationship among members. Pastors, Clergy Persons, Parish Nurses, and members can assist in tailoring interventions to adapt programs to community characteristics, because of their intimate relationship with community members. (Austin, & Clairborne, 2011; Gutierrez et al., 2014; Johnson et al., 2014; Samuel-Hodge et al., 2009). Initiating diabetes self-management education program in faith-based settings may be an effective strategy to motivate members to accept healthier habits.

Several DSME programs are community driven and target lifestyle and behavior modifications with effectiveness reported in African Americans (Collins-McNeil et al., 2012; Gutierrez et al., 2014; Samuel-Hodge et al., 2009). Recognizing the community as a means for delivering self-management education to underserved populations has the potential to have an impact on diabetes disparities.

Methodology

Design

A quasi-experimental with one group pre-test post-test design was used to test a 6-week pilot study of a faith-based diabetes self-management program for African Americans aimed at helping the participants acquire diabetes knowledge and skills. Additionally improvement in diabetes self-management through increased self-efficacy and symptom management was anticipated. Approval was completed by the Institutional Review Board.

Goals

The goals of the project were that after receiving a 6-week faith-based intervention, participants would show significant improvements from pre to post intervention in:

- Diabetes knowledge, self-efficacy, and diabetes symptoms management.
- Outcome of proper diabetes self-management (physical activity, diet, medication, glucose monitoring, and daily self-foot checks).

Setting

The study was conducted at two local African American churches located in the south-eastern part of the United States. Worship services were conducted twice on Sundays for one church and once on Sundays for the other church. In addition, each church conducted midweek services on Wednesdays at 1200 and at 1900 for Bible study. Both churches are active and visible in the black community.

Sample

A convenience sample of 32 African Americans 18 years or older who met the criteria for inclusion were recruited into the study. The study sample included participants with a self-reported diagnosis of Type 2 diabetes made by a health provider.

Data Collection

- The data was collected through self-reports using a set of questionnaires during enrollment days prior to the start of the program. Clinical measures included obtaining hemoglobin A1C levels and weights at baseline. The questionnaire data collection occurred on enrollment days and at the end of the study at each church in private areas provided by the facility. The following questionnaires were administered:
- the Diabetes Empowerment Short Form (DES-SF) self-efficacy scale (Anderson et al., 2005) is a 25 item brief self-report questionnaire of diabetes self-management that includes items assessing the following aspects of the diabetes regimen: general diet, specific diet, exercise, blood-glucose testing, foot care, and smoking;
- the Diabetes Symptoms Checklist –R (DSC-R) scale (Arbuckle, et.al., 2009) a checklist of type 2 diabetes symptoms with severity;
- the Spoken Knowledge in Low Literacy in Diabetes (SKILLD) scale was administered verbally to each participant by the PI (Rothman, et al, 2015); and
- the Diabetes Self-Management Participant Questionnaire Measurement was used to collect date of birth, marital status, years of education, race/ethnicity, gender, employment, comorbidities, and diabetes related inquiries.

The time for completing all questionnaires were 45 to 60 minutes. At the end of the program the participants returned for the post data collection process.

Data Analysis Plan

Descriptive statistics were used to describe characteristics of the sample and pre- and post-test measures. Distribution tests were conducted for the major continuous outcomes using skewness, kurtosis, box plots, and Kolmogorov-Smirnov tests. The Wilcoxon Signed Rank Tests were used to examine difference in diabetes self-management before and after the intervention. A probability level was established at $p<.05$. All analyses were performed in SPSS v21 (IBM SPSS, Chicago, IL).

DSME Program Interventions

This DSME program included six weekly one-hour class sessions held on Sunday mornings and Sunday evenings directly after worship services. The first day began session one with a re-introduction of the program and the beginning of the first diabetes self-management class. The remaining five sessions were held and included modules on healthy eating, being active, medications, glucose monitoring and complications, and symptoms management. The sessions focused on areas of diabetes self-management based on the American Diabetes Association (ADA) guidelines:

- Introduction to diabetes (prevalence's, signs and symptoms),
- Healthy eating,
- Being active,
- Medications,
- Glucose monitoring and complications, and
- Symptom management (ADA, 2011).
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The diabetes education curriculum was adopted from the Advancing Diabetes Self-Management program at Community Health Center in Middleton CT, which was developed with support from the Robert Wood Johnson Foundation. This program is based on the standards of diabetes care recommended by the ADA (Diabetes Initiative Community Health Center, 2009).

These sessions occurred at two African American churches led by African American professionals. The African American professionals felt that it was important to build rapport with participants' and church leaders. This was accomplished by attending and participating in bible study and worship services prior to and during the intervention study. Each session began with a scripture verse. The scripture verses were selected intentionally to relate with each topic.

The topics for each session with scripture verses were as followed:

Session 1: **Diabetes in African Americans, prevalence, and signs and symptoms**

"*Beloved, I wish above all things that thou mayest prosper and be in health, even as thou soul prospereth*" (3 John 1:2, The King James Version).

The participants were asked to share their feelings about the diagnosis of diabetes and their successes and struggles with diabetes self-management. This scripture verse was the first verse used in this study. It was selected to show participants that it is GOD's desires for his people to be in good spiritual health and good physical health.

Session 2: Carbohydrates, fats, and protein

"What? Know ye not that your body is the temple of the Holy Ghost which is in you, which ye have of God, and ye are not your own? For ye are bought with a price: therefore glorify God in your body, and in your spirit, which are God's" (1 Corinthians 6:19-20, The King James Version

The topic for session 2 focused on the impact of carbohydrates, fats, and proteins on blood glucose levels, the importance of portion control, being consistence with the quantity of carbohydrates intake with each meal, and the daily recommended amount of carbohydrates based on the American Diabetes Association (ADA) guidelines. Each participant received a diet journal that included an index of foods with serving sizes and carbohydrates count. This scripture demonstrated the importance of recognizing that our bodies were not our own, GOD created us and as believers it is our responsibility to take care of our physical bodies because it is GODs temple.

Session 3: Physical Activity

"Even so faith, if it hath not works, is dead, being alone" (James 2:17, The King James Version).

The topic for session 3 focused on being active and the positive aspects of physical activity. This scripture verse demonstrated that if you don't mix your faith ("I can do all things through Chris which strengthens me") with some works (move more), then your faith alone is considered ineffective.

Session 4: Medications

"Greater is he that is in you, than he that is in the world" (1 John 4:4, The King James Version).

This session focused on diabetes medications, side effects, and the importance of medication adherence. Many times people are judged for the medications they take, and some may feel that the thought of taking medications and what they may do to the body in the long run can be frightening. Thus, this verse was chosen to encourage believers that they can overcome any obstacle in their life.

Session 5: Glucose Monitoring and Diabetes Complications

"My people are destroyed for lack of knowledge; because thou has rejected knowledge, I will also reject thee, that thou shalt be no priest to me: seeing thou hast forgotten the law of thy God, I will also forget thy children" (Hosea 4:6, The King James Version).

The topic for session five focused on normal and abnormal glucose levels and diabetes related complications. This verse was used to indicate to believers that if you reject knowledge, God will reject you from being a priest to him. Believers need to be informed about their diabetes in order to effectively manage the disease. Also, believers need to know the complications that accompany poorly managed diabetes.

Session 6: Symptoms and Symptom Management

"I can do all things through Christ which strengtheneth me" (Philippians 4:13, The King James Version). The topic for session 6 focused on diabetes symptoms and symptom management. This scripture verse was used to encourage believers that although they have diabetes, diabetes does not have to have them.

Results

The sample consisted of 32 participants who were originally recruited and who completed both the pre-screening and pre-testing process. Of the 32 participants, 28 (87.5%) completed the six-week program. All of the participants identified their ethnicity as African Americans. Fifteen participants (53.6%) completed the study from one church (of the 18 recruited) and thirteen participants (46.4%) completed the study from the second church (of the 14 recruited). Four participant did not complete the program and three withdrew and never started the intervention. The A1Cs and weights were obtained at baseline only, because of the short duration of the study.

The findings revealed significant improvements from the pre-to post-test on the diabetes knowledge (Spoken Knowledge in Low Literacy in Diabetes [SKILLD) scale. Specifically, more than 82% of the sample moved from low knowledge to high knowledge after the intervention. With regards to self-efficacy (the Diabetes Empowerment Scale), at baseline twenty-one (75%) participants had higher levels of self-efficacy and at the completion of the study twenty-eight participants had higher self-efficacy. Seven person moved from low self-efficacy to high self-efficacy after the completion of the study. There were statistically significant changes in the Diabetes Symptoms Checklist-Revised (DSC-R) scores for participants from baseline to end of study in fewer psychology fatigue symptoms, fewer neurology pain symptoms, fewer neurology sensory symptoms, fewer ophthalmology symptoms with a p-value of .015. Lastly, there were statistically significant changes noted for self-care practices (Summary of diabetes Self-Care Activities [SDSCA) scores: physical activity (p value =.007); diet (p value =.001); and daily self-foot checks (p value =.027).

Conclusion

Christians describe the Bible as a book which guides their everyday living. It is one of the ways in which they find out what God plans are for their life. Christians believe the bible to be a book that is life-changing and inspirational. Thus, integrating biblical principles with practical principles was feasible and effective in that participants showed statistically significant improved changes in diabetes knowledge, self-efficacy, symptoms management, and self-care activities.

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