Being Healthy Counts to H.I.M.: An Examination of Health Behaviors among Participants in a Diabetes Prevention and Health Promotion program

Erin R. Banks, Ph.D.
North Carolina State University

Abstract
This study employed a non-random, quasi-experimental design to assess the impact of a diabetes prevention and health promotion program on the health behavior of older African American adults in a church setting. Social Cognitive Theory (SCT) (Bandura, 1986, 1977), Socio-ecological (McLeroy et al., 1988) and PRECEDE-PROCEED Planning (Green & Kreuter, 1999) models were utilized as guiding frameworks. A modified curriculum from the Lifestyle Balance: Healthy Eating and Being Active Diabetes Prevention program was used. Significant decreases were found in fasting blood sugar over the eight-week period for both program participants and the comparison group. However, there was not an increase in diabetes knowledge, daily moderate-vigorous exercise level or self-efficacy for physical activity for individuals who participated in the program from Time 1 to Time 2. The findings are discussed relative to their contributions to health-related research and interventions with African Americans and the role of African-American churches as a conduit for health messages and behavior change.

Background
- Diabetes Mellitus is the medical term for the presence of high levels of glucose in the blood. Type 2 diabetes occurs when the body does not make enough insulin or does not respond to the insulin it makes.
- The risk factors associated with Type 2 diabetes are: obesity, family history of diabetes, prior history of gestational diabetes, impaired glucose tolerance, physical inactivity, unhealthy eating, and membership in racial or ethnic minority group.
- Currently, 20.5 million children and adults have diabetes in the United States, which is 7% of the population (ADA, 2007). Approximately 3.2 million non-Hispanic Blacks aged 20 years and older in the United States have diabetes (ADA, 2007).
- In North Carolina, diabetes mellitus is among the leading causes of death. In 2005, 2,255 deaths were due to diabetes mellitus. According to the Behavioral Risk Factor Surveillance System in North Carolina, 13.3% of African Americans, in contrast to 7.9% of Whites have been told by their doctor that they have diabetes.
- According to the American Diabetes Association and other health organizations, African Americans are leading the charts in non-compliance and adherence to recommended healthy behaviors. For example, African Americans do not consume sufficient amounts of fruits and vegetables and do not comply with the recommended levels of physical activity as compared to their counterparts (ADA, 2007; BRFSS, 2007; Williams et al., 2004).

Conceptual Framework
- Social Cognitive Theory (SCT) - Bandura 1986, 1977
- Socio-ecological model- McLeroy et al., 1988
- Precede- Proceed Planning Model- Green & Kreuter, 1999

Purpose of Study
The purpose of this research was to 1) identify the relationship between demographic variables on health outcomes and 2) assess the impact of a diabetes prevention and health promotion program on individual’s self-efficacy for physical activity, daily moderate-vigorous exercise and fasting blood sugar. This study assessed the influence these factors have on the health behavior and health outcomes of African-American adults participating in a diabetes prevention and health promotion program.

Participants
- Two predominantly African-American churches in North Carolina
- Individuals who were at-risk for pre-diabetes and who have been recently diagnosed with diabetes
- 84 subjects participated in the study; 60 subjects in the experimental group and 24 in the comparison group
- 72.6% female and 27.4% male
- Mean age was 52.5
- 40.5% of subjects ranged between having less than a high school diploma and being a high school graduate
- 57.2% ranged between having some college and a bachelors degree or higher
- 84.5% reported having less than $25,000-$49,000 and 13.1% reported having $50,000-more than $75,000

Description of the Intervention
Being Healthy Counts to H.I.M. (Health Improvement Ministry) is a diabetes prevention program for Faith Based Organizations. This eight-week intervention was developed out of the Lifestyle Balance: Healthy Eating and Being Active Diabetes Prevention program. This program originated from the Diabetes Prevention Program Lifestyle Resource Core, by Dr. Rena Wing and Bonnie Gilchrist at the University of Pittsburgh. At the programs conception, the primary focus was on reducing individual-level risk factors. Modifications have been made to the program to include assessment of psychosocial and environmental factors that are supportive of positive individual changes. This program provides church congregations and community members with educational information and strategies that will help them lead healthy lifestyles. It also provides churches with the necessary tools to promote and prevent diabetes within their church and in the community. This program adheres to the Lay Health Advisor (LHA) model and is supported by the National Institutes of Diabetes and Digestive and Kidney Diseases and The National Institutes of Health.

Major Research Questions
- How are individual’s health-related outcomes influenced by demographics variables?
- Does the Being Healthy Counts to H.I.M. diabetes prevention and health promotion program have a positive influence on participants’ diabetes-related behaviors and attitudes as compared to the comparison group?
- How does level of participation in the Being Healthy Counts to H.I.M. diabetes prevention and health promotion program influence health-related outcomes?

Variables
- Independent: age, gender, education, income, family history of diabetes, diabetes diagnoses and diabetes knowledge
- Dependent: fasting blood sugar, daily moderate-vigorous exercise level and self-efficacy for physical activity

Analyses
- Pearson Product-Moment Correlation
- Repeated Measure Multivariate Analysis of Variance
- Multivariate Hierarchical Regression

Measures
- Demographics Questionnaire: This questionnaire consisted of questions concerning gender, age, ethnic identification, educational level, income level, family history of diabetes, diabetes diagnosis, current blood sugar levels/status and exercise levels.
- Self-Efficacy for Health Behavior Scale (Sallis, Pinski, Grossman, Patterson, & Nader, 1988). This instrument consisted of questions that assess self-efficacy to engage in exercise behavior.
- Physiological and Physical Variables: blood sugar was collected by registered nurses, dieticians, trained lab technicians and volunteers.
- Environmental Church Factors: Focus groups were conducted to assess the environmental and policy changes within the church.

Major Study Findings
- Demographic variables were correlated with diabetes-related variables.
- Fasting blood sugar and daily-moderate physical activity decreased among all participants.
- Level of participation influenced daily moderate-vigorous physical activity among participants in the experimental group.
- Lay Health Advisors deviated from program curriculum.
- Religion played a role in level of participation among subjects in the experimental group.