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Education to Improve Health for Rural Africa American Women with Diabetes

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Walden University

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Walden University

College of Nursing

This is to certify that the doctoral study by

Monique Pendleton

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2020

Abstract

Education to Improve Health for Rural African American Women with Diabetes

by

Monique Pendleton

MS, Walden University, 2014

BS, Delta State University, 2012

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

August 2020

Abstract

Diabetes (DM) is the 7th leading cause of death in the United States. Minorities like Hispanics and African Americans (AA) are at greater risk of developing DM. The prevalence and outcomes affecting diabetes are attributed to socioeconomic status, sex differences, ethnic, cultural and religious status. Diabetes-related mortality is a major health problem in AA in rural America. The focus for this project was to identify the best evidence regarding educational counseling on lifestyle modifications that positively impact adult AA women with diabetes living in Rural America. The social-ecological theory and health belief model informed this project because these models incorporate behavior change, and the social determinates of health affecting this population. The PRISMA checklist was used to identify the articles for inclusion for the systematic review. Keywords, including diabetes, rural America, AA women, disparities, self-management, and education, were used to conduct the literature search. Ten articles were identified for analysis in this project. The key recommendations from the ten articles include the importance of diabetes self-management education, increased physical activity, regular monitoring of blood glucose and hemoglobin A1C, and regular diabetic foot checks. These self-management behaviors and primary prevention strategies can reduce the mortality and morbidity rates associated with diabetes in AA women. This project will impact positive social change by providing recommendations for patient-centered, culturally appropriate education that will reduce diabetes complications and improve health outcomes for AA women with DM in rural communities.

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Dedication

I would like to give thanks to God, who has led me through this narrow path. My mom, dad, and daughter for being the wind beneath my wings and who taught me anything worth having you must work hard for and make sacrifices. My three special friends who are more like sisters to me: Contena, Yolonda, and Vanessa. They were the listening ears, the shoulders to lean on, and the cheerleaders on the side when I felt tired. Thank you all for your patience, guidance, and understanding

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Section 1: Nature of the Project

Introduction

Diabetes is a complex disease. Type 2 diabetes has several things that explain what it is. Type 2 diabetes is when a patient has a high A1C, has high blood glucose or known as hyperglycemia for which it is an impaired glucose tolerance defining Type 2 diabetes (Anderson, 2016). Diabetes Mellitus (DM) is the 7th leading cause of death, affecting 29.1million people in the U.S., and the diabetic patient is 1.8 times at risk for heart attack (Healthy People, 2020). It is the leading cause of adult-onset blindness, amputations, and kidney failure; these complications are due to the increased prevalence of obesity (Healthy People 2020). Minorities like Hispanics and African Americans (AA) are at higher risk of developing DM, which is 17 % more prevalent in rural communities than in urban settings (Lepard, Joseph, Agne, & Cherrington, 2015).

Managing DM will help delay or avoid complications in diabetic patients. According to the CDC (Education and Support, 2019), patients with controlled diabetes will help save time, money, hospital visits, and emergency room visits. Diabetes outcomes and prevalence is caused by religion, sex, culture, and socioeconomic status. Certain racial and ethnic groups like AA and Hispanic women with dyslipidemia or hypertension develop type 2 DM more frequently than any other ethnic group (Caballero, 2018). Therefore, barriers such as education and nutrition should be addressed by the providers with each patient's visit. The management of DM must consist of culturally-appropriate strategies, individualized treatments, and patient-centered strategies. Diabetes-related mortality is a significant problem for AA people in rural America

(Callaghan, Towne, Bolin, & Ferdinand, 2017). Communities with AA residents lack health-promoting characteristics, which affects the health of their residents (Bower et al., 2015). AA, Native American, Hispanic/Latino, and Asian American women with dyslipidemia or hypertension and gestational diabetes mellitus develop type 2 diabetes more frequently than Caucasians (Caballero, 2018).

Problem Statement

The goal of this project is to determine if lifestyle modifications show a positive impact on African American (AA) women with diabetes living in rural communities. Diabetes-related disparities are heightened by limited access to education, limited access to health care, and disproportionate poverty rates (Richardson, Willig, Agne, & Cherrington, 2015). In rural states like South Carolina, Tennessee, and Kentucky, the Biomedical/Obesity Reduction Trail (BMORe) investigated changes in health beliefs. The study showed people with hypertension, obesity, and comorbidities related to diabetes; it focused on their self-esteem and lack of interest in learning about their illnesses (Martinez, Turner, Pratt-Chapman, Kashima, Hargreaves, Dignan & Hebert, 2016). African Americans are 1.4 times more likely to be obese than non-Hispanic Caucasian adults and 33% more likely to die from heart disease.

Forty percent of rural residents are obese compared to 33% of urban adults living in Appalachian, Kentucky (Martinez et al., 2016). This is due to the lack of nutritional education and accessibility to quality healthcare. Limited access to education, accessibility to healthcare, and disproportional poverty rate contribute to disparities related to diabetes (Richardson, Willig, Agne, & Cherrington, 2015).

This Doctoral of Nursing Practice (DNP) project will address the significance of education regarding lifestyle modifications and the effects it has on adult AA women living in rural America with diabetes. It will give insight to clinicians and promote nutritional education that will improve the management of diabetes in patients. The question focused on in this DNP project is: What lifestyle modifications positively impact rural diabetic AA women? This will be accomplished through a systematic review.

Purpose Statement

The purpose of this study I's to conduct a systematic review-of the literature and draw conclusions that will guide practitioners. It focused on effective lifestyle changes that yield positive results. AA women in the Deep South have higher rates of mortality and morbidity caused by obesity-related diseases, one of which is diabetes (Carson et al., 2015). Finally, the project will review the literature and identify, analyze, and summarize nutritional education to reduce diabetic-related disparities.

According to Gumbs (2012), diabetic education promotes self-care behaviors in AA women. Additionally, Gumbs' study showed that participants would more likely participate in self-care behaviors after receiving self-management education. Finally, the need for culturally specific training may improve AA women's responses to enhance the quality of life (Gumbs, 2012).

In patients with DM, cultural, ethnic, religious, gender, and social-economic differences affect health care and complication risk (Caballero, 2018). There is a gap in practice when serving diabetic patients who reside in a rural community in the South, like

Mississippi, Tennessee, Appalachian Kentucky, and South Carolina. Most diabetes complications can be prevented by working with a health care provider to keep blood pressure, glucose, and cholesterol under control, eating healthy, and being physically active (Education and Support, 2019).

Nature of the Doctoral Project

The evidence used in the development of this project included a database search of the keywords diabetes, rural America, African American women, disparities, self-management, and education. The abstracts of all identified articles were read to identify knowledge of patients and outcomes related to behaviors and self-care management of DM in AA women living in rural U.S. Articles were narrowed down using the PRISMA (2015) process and analyzed using Revised Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0, 2015) and the Melnyk and Fineout-Overholt Levels of Evidence Hierarchy (2019)

The Social-Ecological Model (SEM) was incorporated into this project because it addresses all aspects affecting diabetic AA women living in Rural America (Golden and Earp, 2012). SEM has five hierarchical phases: individual, interpersonal, community, organizational, and policy enabling environment (Nyambe, Hal, & Kampen, 2016). SEM is most effective in using interventions at each phase. The first stage considers the individual's skills and knowledge. The interpersonal stage addresses the individual's relationship with family and friends. The community phase focuses on relationships between corporations. The organizational step addresses social institutes. The last phase, policy enabling environment, considers local, state, and national laws. It incorporates

perspectives like behavior change. The patient and provider must make behavioral changes to decrease the disparities caused by DM. Cultural, psychological, biological, and socioeconomic characterize the four main aspects affecting this population. The healthcare team, provider, and community can develop strategic plans for promoting health, increasing knowledge, and decreasing mortality and morbidity rates in AA diabetic women living in rural areas. Environmental and individual changes can influence the levels of interventions used to reduce mortality or morbidity rates (Golden and Earp, 2012). Better outcomes have been associated with the amount of time spent with a diabetes educator.

The results from this project determined if the implementation of public knowledge from the health care providers through education will assist with the reduction of BMI and A1C in the population studied. The results will be a guide for the stakeholders in educating this population of people living in the rural United States.

Significance

The stakeholders include community leaders, patients, families, nurse practitioners, nurses, nutritionists, and primary care physicians. I hope that this project will demonstrate the importance of educating the patients, community, families, healthcare members, and community leaders and will have a positive effect by decreasing disparities caused by diabetes in AA women living in rural communities. Additionally, this knowledge can be passed to other health care providers to help them manage patients' behavior and nutrition and thereby reduce BMI and A1C in diabetes.

Summary

Section 1 introduced the problem: the gap in practice relating educational opportunities to AA diabetic women who live in rural communities. The overarching question was posed and a theoretical framework was explained, as was the relevance to the profession to nursing. Section 2 will address the theories, framework, relevance, models, and concepts as they relate to the effects diabetes has on Black women in rural areas of the United States.

Section 2: Review of Literature and Theoretical and Conceptual Framework

Introduction

This section will discuss theories, frameworks, models, and concepts used in the systematic review conducted on obese African American (AA) women with diabetes and hypertension. It will discuss why particular theories were chosen for the subject matter. According to Hodges and Videto (2011), in order to understand health behaviors and the environments help program planners to think beyond the individual by using theories (p. 144). However, in choosing theories and models, one must consider the population being studied, the purpose of changing the environment, people's behavior, and the purpose of the intervention. How a person perceives an illness like obesity can impact their nutritional and weight awareness. This project will discuss social and cultural reasons for the lack of knowledge that causes disparities in diseases like diabetes, hypertension, and obesity.

Concepts, Models, and Theories

The social-ecological theory incorporates perspectives like behavior change between the two models. The ecological model and the social-cultural model combined are more beneficial when determining treatment options. The ecological model incorporates the intrapersonal, interpersonal, community and public policy, and organizational determinants that influence effective behavior change (Caperon et al., 2019). However, social-cultural models play a significant role in the defining and development of cognitive abilities (Caperon et al., 2019). Social practices influence behaviors due to values, traditions, norms, and culture. These two should also assist the

healthcare team and community in understanding how to educate diabetic AA women living in rural areas.

The social-ecological theory works for this project because it addresses all aspects affecting diabetic AA women living in Rural America. The four main aspects affecting this population are Cultural, psychological, biological, and socioeconomic describe. Often, a newly-diagnosed patient feels overwhelmed. They must be educated according to cultural beliefs, and there must be an understanding of their environment and socioeconomic status. Affording the cost of diabetic supplies and buying foods for a healthier diet is difficult. Learning when and how to take medications and blood glucose is also difficult. Therefore, educating diabetic AA women on their disease can be a challenge for nurses and providers. The ecological model is used to help health care providers understand interventions that cater to the individual needs of diabetic patients (Caperon et al., 2019). The interventions must be individualized to meet the needs of the diabetic patient; no single rule or intervention fits everyone. Therefore, each plan of care should be structured around the individuals' needs.

At a local clinic in Mississippi, seven AA women patients with A1Cs ranging between 7.5 and 12 showed a need for educational tools. Such tools like one-on-one classes and group forums assist patients with glucose monitoring and nutritional guidance. They teach patients how to make better dietary choices such as limiting carbohydrates and eating more vegetables and fruits. According to the Mississippi State Department of Health and the American Diabetes Association (ADA); ADA, 2018, diabetes self-management education and support has been shown to be cost-effective by

reducing hospital admissions, readmissions, and estimated lifetime health care cost. Education improved the A1C by 1 percent in people with type 2 diabetes and reduced the onset or advancement of diabetes complications to improve quality of life. Better outcomes have been associated with the amount of time spent with a diabetes educator. The ADA offers a risk assessment on its website to determine if a person has a low, medium, or high risk of being prediabetic. They also have educational tools for diabetic nutrition, like articles that discuss food options and carbohydrate counting.

The Health Belief Model (HBM) is based predominantly on the individual's perception and indicates their likelihood of engaging in a recommended health action (Hodges & Videto, 2011). The HBM is often used to focus on a clear health problem and guides the development of a message to encourage people to engage in the recommended actions. This model works well with the problem question because behavior changes are needed to assist with modifying diets and sedentary activity. The HBM is useful for developing health behavior interventions, and it understands self-behavior (McElfish, Hallgren, Henry, Ritok, Rubon-Chutaro, & Kohler, 2016). It is hoped that the HBM will change the perception of the AA women regarding the disease process of DM, weight, and eating practices.

Diabetes and hypertension are associated with obesity and being overweight. Compared to any other races, African Americans have cultural differences regarding physical activity (Bland & Sharma, 2017). AA women often misjudge their weight, thinking overweight is healthier. Therefore, the HBM is important to assist with the prevention of DM when applied to the care of the diabetic patient. The national diabetes

mortality in African Americans is much higher, and the averages are particularly pronounced in rural America (Callaghan et al., 2017).

Terms

African American: a person having origins in any of the Black racial groups of Africa (U.S. Census Bureau, 2018).

Type II Diabetes: When your body does not use insulin properly or insulin resistance (Type 2 Diabetes. (, 2017).

Hypertension: the "silent killer" because it usually has no warning signs or symptoms and measurements greater than 140mmHg or higher and 90mmHg or higher classifies one being hypertensive (Type 2 Diabetes. (, 2017).

Overweight: BMI 25 – 29.9 kg/m2 (Gumbs, 2012).

Obesity: BMI 30 or greater (Gumbs, 2012).

Blood Pressure (B.P.): the force of blood pushing against the walls of your arteries, which carry blood from your heart to other parts of your body (Education and Support, 2019).

Hemoglobin (A1C): a picture of the average blood glucose control between 2-3 months (Type 2 Diabetes. (, 2017).

Rural: living in a non-metropolitan county (Hale, Bennett, & Probst, 2010).

Relevance to Nursing Practice

The systematic review will be done on literature covering educational counseling on lifestyle modifications in adult AA women living in rural areas with diabetes. A systematic review attempts to appraise, identify, and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a project question (Bero, 2017). The literature review will also discuss ways to prevent and or decrease obesity, diabetes, and hypertension through educating this population. The different ways to focus on the smaller subject matter to maintain the focus on the problem will be done through searching for different databases, including CINAHL, Cochran, and PubMed.

The problems encountered in a local community clinic include newly diagnosed diabetic patients feeling overwhelmed after receiving their diagnosis. The fear and inability to maintain a healthier diet, physical activities, the lack of education and understanding regarding how to take medications, check blood glucose and meal plans are all important to educate the patients about their disease process. There is a need to have more than one initial 15-minute conversation between the provider and the newly diagnosed diabetic patient. Women have different self-management education needs compared with men because women manage and experience their diabetes differently (Gucciardi, Chan, Manuel, & Sidani, 2013). There is a great need to provide educational training for the diabetic patient and the provider to address the interventions and desired outcomes for the patient on an individual basis. Women are more successful and better suited with interventions incorporating peers, community health workers, and family for support, according to (Gucciardi et al., 2013). Proving there is a need for educational

programs for AA women with diabetes living in Rural America is the goal of this systematic review.

The benefits of a healthier patient include less time lost from work, fewer hospital stays, and fewer disabilities. This is cost-effective for the patient, community, and nation. By understanding a systematic review of evidence-based literature as it relates to the education of diabetic AA women who reside in rural communities, it is the hope that analysis of the literature will assist the provider with a better understanding how to educate the women with DM There is a need for several intervention classes for the provider and this population. Allowing new opportunities to teach these diabetic women self-management skills is an important process in acknowledgment and management of DM

Local Background and Content

The problems encountered in a local community clinic include newly diagnosed diabetic patients feeling overwhelmed after receiving their diagnosis. The fear and inability to maintain a healthier diet, physical activities, the lack of education and understanding regarding how to take medications, check blood glucose, and meal plans are all important to educate the patients about their disease process. Mississippi was ranked first in the nation for overall diabetes prevalence over 13.6 percent of the adult population in 2016 (Mississippi State Department of Health [MSDH], 2018). In 2012, the Mississippi Diabetes Association estimated the economic burden in Mississippi at 10,402 dollars per Mississippian with diabetes in 2012. The total charges to the Mississippi Division of Medicaid in 2013, for diabetes and diabetes- associated complications total

almost $1 billion. Hospitalizations in Mississippi are greater in women than in men and greater on African Americans than in Caucasians living in Mississippi. There are 31.9 deaths in Mississippi due to diabetes in comparison to the national mortality rate of 21.0 deaths per 100,000 population (MSDH, 2018).

There is a great need to provide educational training for the diabetic patient and provider to address the interventions and desired outcomes for the patient on an individual basis. The high statistical rate of diabetes and diabetic related deaths proves there is a need for educational programs and counseling for AA women with diabetes living in Rural America.

Role of DNP Student

My practice focus for this project is to provide a systematic review to bring awareness to providers, patients, and the community on the importance of the types and frequency of educational opportunities for this population to aid them in caring for patients. The motivation for this project is personal. Having a diabetic grandmother who acquired a decubitus on her due to lack of education regarding foot care and not seeing a Podiatrist is a personal reason for promoting educational counseling. The lack of education and understanding, along with cultural beliefs, contributed to her having diabetes. My grandmother and aunts believed eating everything on your plate and being fat were healthy. The high carbohydrate diet leads to her having diabetes and hyperglycemic episodes.

This project provides me with an opportunity to understand the issues of DM in rural America among AA women due to a lack of knowledge. The lack of knowledge on self-management behaviors, how to incorporate them into avenues for educational resources for the provider, and the affected population should also be established. My practice focus for this project is to bring awareness to providers, patients, and the community on the importance of education and awareness has on promoting healthy lifestyles. Awareness promotes prevention that leads to cures or curing diseases.

It is hoped, through educational counseling of medical personnel and patients promotes the prevention of the diseases in this population. The role of the DNP student is to support the process of educating, informing, diagnosing, and preventing disparities caused by obesity, hypertension, and diabetes in adult AA women. This will be done through a systematic review. The articles will be gathered from databases, including CINAHL, Cochran, and PubMed. The articles will be gathered by using keywords diabetes, rural America, African American women, disparities, self-management, and education. Materials between the dates of 2013 to 2020 will be used.

Summary

The doctoral project will address issues related to the need for and the lack of educational counseling issues in AA women living in rural areas. The Health Belief Model (HBM) is used to incorporate why educational counseling and self-management behaviors are essential for the improvement of health in AA women with diabetes. The HBM is the blueprint in the guidance for the collection of data in the collection and analysis of data.

Section 3: Methodology

Introduction

This project sought to identify relevant studies and research literature as it relates to educating diabetic AA women and healthcare providers in rural communities. The purpose of this doctoral project was to address the availability of educational information for this population and to assist with decreasing the disparities caused by diabetes. This doctoral project focused on the amount of information provided to patients living in rural areas and their behaviors.

Practice Focused Question

According to the ADA (2016), African Americans have a greater prevalence of diabetes and complication rates. Compared to Caucasian women, AA women suffer more disabilities and diabetes-related complications. Hypertension and diabetes are linked to being overweight and obesity.

The ADA recommended three strategies for improving care for diabetic patients: patient-centeredness or communication, diabetes across the life span, and advocacy for patients with diabetes. The ADA recognized patient-centeredness to incorporate patient preference and cultural barriers. They also saw the need for timely treatment tailored to the individual. Lastly, the ADA found team-based care and supportive tools are beneficial to the patient and the health care team. By these three, advocacy for improved treatment can improve the quality of care and lives in diabetic patients (ADA, 2016)

Obesity is a disease that is a contributing factor in a person developing diabetes. In the South, obesity-related diseases correspond to poor dietary intake (Carson et al.,

2015). It was found in the study by Carson et al. (2015) that 64% of AA women living in the Deep South had hypertension, compared to a national average of 45% hypertensive AA women. Their cholesterol and diabetes rates were higher than the national average. The diabetes rate was 23% versus the average 13%, and cholesterol rates were 35% versus 28% nationally. Further, Ba-Essa et al. (2018), found the management of complexities associated with diabetes like lowering the hemoglobin A1C below 7%, blood pressure lower than 140/90 mmHg, and lowering low-density lipoprotein cholesterol to 2.6 can help prevent morbidities associated with diabetes. These studies further support the need for better access to nutritional tools. The gap in practice is the lack of education that is provided to diabetic AA patients. There is a 17% diabetes prevalence in rural communities, which have systematic barriers that include limited access to insurance and emergency services, high rates of poverty, and minimal exposure to diabetes education (Massey, Appel, Buchanan, & Cherrington, 2010). In order to improve behavior and the quality of life of women in the AA community a culturally specific education is required (Grumbs, 2012).

Other gaps include educational classes and educational materials available to the community. African Americans residing in rural communities may lack understanding due to cultural beliefs about clinicians' practice and the self-management of diabetes (Kronish, Levethal, & Horowitz, 2011). According to Kronish et al. (2011), beliefs about clinicians may be greater when involving patients from disadvantaged minority patient groups (Kronish et al., 2011). Therefore, African Americans and Hispanics are at greater risk for lifestyle and medication regime gaps. System-level barriers have a more

profound effect on minorities and rural racial communities where household incomes are 40 to 50% less than that of rural European-American households, thereby contributing to existing ethnic and racial disparities in diabetes prevalence and mortality (Massey et al., 2010).

Hale, Bennett, & Probst (2010) stated few studies nationally had examined differences in diabetes care over time and disparities based on residence in rural areas. According to Hale, Bennett & Probst, rural is defined as a non-metropolitan county. They found the Health Professional Shortage Area consists of a ratio of 3,500 patients to 1 provider, which impacts the lack of communicating diabetic education among the rural population.

According to the Mississippi Department of Health, Mississippi has been ranked number one in diabetes prevalence since 2016. Diabetes accounted for 1,083 deaths and led to complications like lower limb amputation, end-stage renal disease, heart disease, premature death, and blindness throughout the state (MSDH, 2018). As of 2019, their ranking of diabetes is 14.3% and 39.5% for obesity. This provides information regarding the need for self-management skills related to nutrition and physical activity (MSDH, 2018). For this project, the question is: Does educational counseling on lifestyle modifications positively impact adult AA women with diabetes living in Rural America?

Project Purpose and Method Alignment

This project seeks to review, compare, and synthesize research literature specifying the use of educational tools and determined how AA women living with diabetes in rural America are being educated about their disease and determine if there

are enough educational programs provided for these patients. Systematic reviews and meta-analysis are a key element of evidence-based healthcare. This project will identify relevant studies, appraise their quality, and summarize the evidence from research articles obtained from the database search. This process will use inclusion and exclusion efforts to extract unnecessary articles. The best evidence is used in order to improve clinical practice is the purpose of a systematic review (Walden, 2019).

Source of Evidence

The source for collection of data for this project will include using the Walden Library and online databases, including CINAHL, Cochran, and PubMed. Keywords will include diabetes, rural America, African American women, disparities, self-management, and education. The timeframe of the articles would range between 2013-2020 in English. The materials, articles, and studies will be over a 10-year period used for this systematic review, associated with diabetes and hypertension in AA women living in rural areas of the United States, with most of the evidence-based literature being within the last five years. The agreement and collaboration by both reviewers, which includes the writer and a secondary article critique, will determine the inclusion of studies that will be used.

Published Outcomes and Research

The source for collection of data for this project will include using the Walden Library and online databases, including CINAHL, Cochran, and PubMed. The search strategy will include articles and journals between the years of 2013-2020. The exclusion

will be AA women younger than 21 years of age. Women who are not AA, men, non-diabetic, and non-hypertensive women. AA women with a BMI of less than 30. The peer-reviewed articles will include adult AA women 21 and older, Blacks, rural, minority, A1C, diabetes, education, BMI, nutrition, and self-management.

Procedures

Permission will be obtained from the Walden University IRB prior to conducting this DNP Scholarly Project. Consent forms will not be required for this project.

The conceptual models like HBM and Social-Ecological Model will be utilized to incorporate the best methods for social, ecological, and cultural approaches. It is hoped it the models will increase the knowledge on how to use self-management tools in the treatment and prevention of DM disparities. This includes glucose monitoring, dietary changes, increase physical activities, and frequent doctor's visits.

Protections. The project must be approved and reviewed by the Walden University Institutional Board prior to starting the data collection process. There are no human subjects used in this project because it is a systematic review.

Analysis and Synthesis

The PRISMA checklist will be used to identify the articles for inclusion for the systematic review (PRISMA, 2015). Keywords, including diabetes, rural America, African American women, disparities, self-management, and education, will be used to conduct the literature search. Databases will be crossed referenced to obtain articles to

answer the project question: Does educational counseling on lifestyle modifications, positively impact adult AA women with diabetes living in Rural America? A PRISMA flow diagram will be included to assist with documenting the inclusion and exclusion criteria, identifying and screening processes to obtain the articles for review.

Once the articles have been identified, they will be analyzed and organized into a summary of the results table following the SQUIRE format (SQUIRE 2.0, 2015). Levels of Evidence will be measured using the Melnyk and Fineout-Overholt Levels of Evidence Hierarchy (2019), and scores will be included in the summary of the results table. The JBI Critical Appraisal Checklist for Systematic Reviews and Research Synthesis were utilized by the primary and secondary reviewers on the eligible articles and eligible studies (JBI, 2014). Categorization was used to analyze and organize the data.

The analysis will be presented in a summary of the results table that will include the following: problem description, the aim of the study, setting, and sample, study design and intervention, method, framework, findings/results, limitations, conclusions, and analysis of the relevant study. The systematic review will review literature from peer-reviewed databases. The strategy is to utilize an online database search to incorporate the following databases: CINAHL, Cochrane, and PubMed. Also, the Librarian at Walden will be asked to assist with data/information for the project. In addition to the level of evidence, the summary of the results table will include problem description, the aim of the study, setting, and sample, study design and intervention, findings/results, limitations, conclusions, and analysis of the relevant study.

Summary

This section discussed the relevance of research models and theories and the use of the PRISMA checklist (2015) to analyze materials used in the systematic literature review. After the use of these tools, the articles meeting inclusion criterion agreed upon by the two reviews will be used to provide proof there is a need for educational tools to assist with educating AA diabetic women living in rural areas of the U.S. Locally, in the state of Mississippi, 14.3 % of adults have diabetes and 39.5% have obesity (MSDH, 2018). This provides information there is a need for nutritional and physical activity counseling,

Section 4: Findings, Discussion, and Implications

Introduction

Diabetes is the 7th leading cause of death and brings health problems like amputation, ulcers, blindness, stroke, and neuropathy. Minorities are at greater risk for having diabetes. The focus of this project is to educate diabetic patients and their health care providers, communities, and families. Everyone involved in the fight against diabetes must be educated and willing to learn. Access to self-management skills, educational tools, and healthcare services are required if we all want to decrease the disparities caused by diabetes. In rural communities, diabetes is more prevalent than in urban settings. Diabetic-related mortality is a major health problem for AA people in rural America. For this reason, AA women living in rural America must be educated on the ins and outs of diabetes. There is not a one size fits all educational tool for rural diabetic AA women and their healthcare providers.

Does educational counseling on lifestyle modification positively impact adult AA women with diabetes living in Rural America? In this project, I explained why it is important to educate these women. First, I conducted a systematic review to analyze, identify, synthesize, and report the research literature. The objective was to understand best practices for diabetic education. It was important to identify the best approach to make the community, patients, healthcare providers, and family members more aware of the benefits of lifestyle modification. Finding the best educational tools could help combat preventable complications in this population.

Findings and Implications

The PRISMA checklist (Appendix A) was used to identify the articles for inclusion for the systematic review. Keywords, including diabetes, rural America, African American women, disparities, self-management, and education were used to conduct the literature search. Databases were be cross referenced to obtain articles to answer the project question, and the search yielded 18 articles from CINAHL Plus and Medline. The articles were screened for duplications and dates ranging between 2005 thru 2018. A total of 10 articles were identified. These articles are described in the Characteristics of Included Studies Table (Appendix B).

Review of Articles

Some of these articles focused on diabetes self-management education (DSME) and the AA women who received and applied what was learned. They found that AA women who participated in DSME were more likely to check their feet and blood glucose, participate in moderate physical activity, and visit doctors regularly. Further, a reduction in the mortality and morbidity rate was attributed to the reduction of blood pressure and improved glycemic control. These authors recommended an increase in DSME programs, nutritional guidance, and community participation (Caballero, 2018; Callaghan et al., 2017; Gucciardi et al., 2013; Lepard et al., 2015; Massey et al., 2010).

One article discussed the importance of the flu vaccination, aspirin prescription, foot examination, urine examination for proteinuria, structured education, and personalized nutritional advice. The authors found that these strategies significantly improved health outcomes for patients and that those with hemoglobin A1C greater than

9 percent were able to decrease that percentage. They also found that blood pressure, and cholesterol were also lowered with this approach to diabetes care (Ba-Essa et al., 2018).

Another article described the importance of the Social-Ecological model in treating diabetes through health education and behavior health promotion. The article focused on the characteristics of individuals and environments to guide public health practice. The authors argue cultural, physical, and social aspects of an environment have a cumulative effect on health (Golden & Earp, 2012)

The article by Gumbs (2012) focused on how AA women participate in diabetes self-management education (DSME), and the impact participation has on self-care behaviors. The results described the importance of DSME, the need for health care providers to develop policies, strategies to improve participation among ethnic groups of women, and decreasing complications related to type 2 diabetes and improving the quality of life for these women (Gumbs, 2012). This study promoted self-management education and showed how individuals should practice positive behaviors to assist in decreasing morbidities caused by diabetes. Also, health care providers have a need to provide better strategies to incorporate useful educational materials for AA women.

In another study, the Biomedical/Obesity Reduction Trial (BMORe), Martinez and colleagues (2015) investigated changes in health beliefs among obese adult participants with comorbidities of high blood pressure, and diabetes. Prior to participating in the BMORe study, the participants verbalized they were not comfortable in reading labels, or healthy cooking and they felt their diabetes was out of control. After the 12-week BMORe trail, the participants felt more confident and empowered. The

participants expressed improvements in quality of life, fewer medications, and emotional health. This study shows how group therapy assists in strengthening the community. The participants learned positive behaviors and motivated each other. The expected outcome from the focus groups was learned behavioral changes to use after group participation and group therapy for the participants to use on an individual basis at home. The positive aspect of this sample is it shows how the community should continue to support individuals through educational group sessions. The limitation of this study was that the changes were not sustained over time, indicating the need for ongoing and individualized education (Martinez et al., 2015).

Social change

Positive social can be demonstrated through planned DSME that is focused to the individual learners needs. Improvement in health outcomes can be attributed to preventive healthcare to identify and treat diabetes complications at an early stage. This project demonstrated strategies that can be used by health care providers to educate themselves and their patients. With plans in place to educate patients and providers to improve care and education, the outcomes for DM will be improved.

Recommendations

The key recommendations from the ten articles include the importance of DSME, increased physical activity, regular monitoring of blood glucose and A1C, regular diabetic foot checks. These self-management behaviors and primary prevention strategies can reduce the mortality and morbidity rates associated with diabetes in AA women.

As a result of this DNP project recommendations are as following:

1. Culturally sensitive teaching of DSME that is individualized
2. Incorporate physical activity and nutritional programs for the patient and for the family.
3. Provide different ways to educate the patient, healthcare providers, the community, and community leaders on diabetic treatment plans.
4. Provide ways to teach and learn via phone, healthcare visits, telehealth, individual and group DMSE sessions.

Recommendations for health care providers, patients, and community leaders are to have quarterly health fairs giving the community and patients access to educational materials related to disparities caused by diabetes. I would recommend the health care team provide more a one-on-one question and answer sessions to diabetic patients and family members. Evaluate the patients' A1C before and after the educational sessions twice yearly. Provide quarterly surveys asking questions about the educational sessions. Provide healthy snacks like fruit and water during these sessions. Stress the importance of providers collaborating and completing a yearly foot exam on all diabetic and prediabetic patients. Present finding from the A1C, surveys and education to the community leaders and colleagues.

Strengths and Limitations

The strengths of this project are the research focused on adult AA women living in rural areas and answered the research question. The focus was also on educational tools with a positive relationship to decrease in A1C and blood pressure. It provided

evidence this is not a one size fits all plan or treatment. Research showed skilled training alone, and education alone has a positive effect on decreasing the A1C.

The limitation of this project was the limited amount of research. The sample size is large but lengthy, with some lasting four years. The research found group combined skills and educational training did not show a great decrease in the A1C.

Summary

The educational tools to effectively learn and teach AA women living in rural areas are better utilized and understood when the approach is tailored to the individual's needs. Group education is a good tool for motivating newly diagnosed patients, however, each patient with diabetes needs a more structured plan of care, focusing on his or her own needs. Promoting and utilizing educational tools to incorporate self-management tools like behavior modifications, nutrition, moderate physical activity, regular blood glucose monitoring, hemoglobin A1C screening, periodic foot checks, regular healthcare visits, and annual retinal screening, are all necessary interventions in the battle of treating diabetes in AA women living in rural America.

Section 5: Dissemination Plan

The finding of this DNP project will be used in the clinic to help health care providers better serve the community through individualized DSME. This DNP project identified the importance of educating and being educated about diabetes in rural America. The targeted population includes the health care team, community leaders, patients, and families. It allowed me to see how important it is to engage educational tools that assist with decreasing hemoglobin A1C, BMI, and blood pressure. Taking the time to teach the individual patient and tailoring to their individual needs are beneficial approaches to diabetes management. The project findings will be distributed to local colleagues, health care teams, community leaders, patients, and families. The dissemination strategies that will follow this project include informing healthcare colleagues about the need for increased awareness of the communication between patients and healthcare providers and for new strategies for managing diabetes in AA women. For direct patient care, this project has provided the skills to enhance my own practice for future DSME using different settings like group therapy and individual therapy. New information learned will support me as I help patients set self-management goals and focus on strategies to decrease A1C and BMI through nutritional and physical activity. New DSME modalities for myself and colleagues may include the use of telephone, telehealth, and social media to provide education to patients, families, and the community.

Analysis of Self

While analyzing myself as a practitioner, I found the information reviewed has been beneficial to my practice with the AA women in the clinic where I am employed. I found that it is beneficial to take extra time to listen and apply what has been learned to teach and reinforce self-management behaviors. I also noticed in my clinical practice, the positive effect of teaching has on significant numbers like the hemoglobin A1C, BMI, and the number of hospital visits. It has enhanced my communicating with other health care providers to promote a healthier community one patient at a time and to formulate a feasible treatment plan for this population.

In completing this project, there were challenges finding enough articles specific to AA or Black women with diabetes living in the south. Collaborating with others and addressing the need to educate the community, community leaders, patients and the health care professionals will be an important step in disseminating what has been learned.

Summary

Understand the evidence and education are keys to achieving an understanding of how to teach the management of diabetes in AA women living in rural America. Education is not the only tool in combating diabetes. The health care team, patients, and the community need to network on the use of educational tools. The teaching of nutrition, glucose monitoring, foot assessments, dilated eye exams, and physical activity are ways to decrease the morbidity and mortality rates caused by diabetes.

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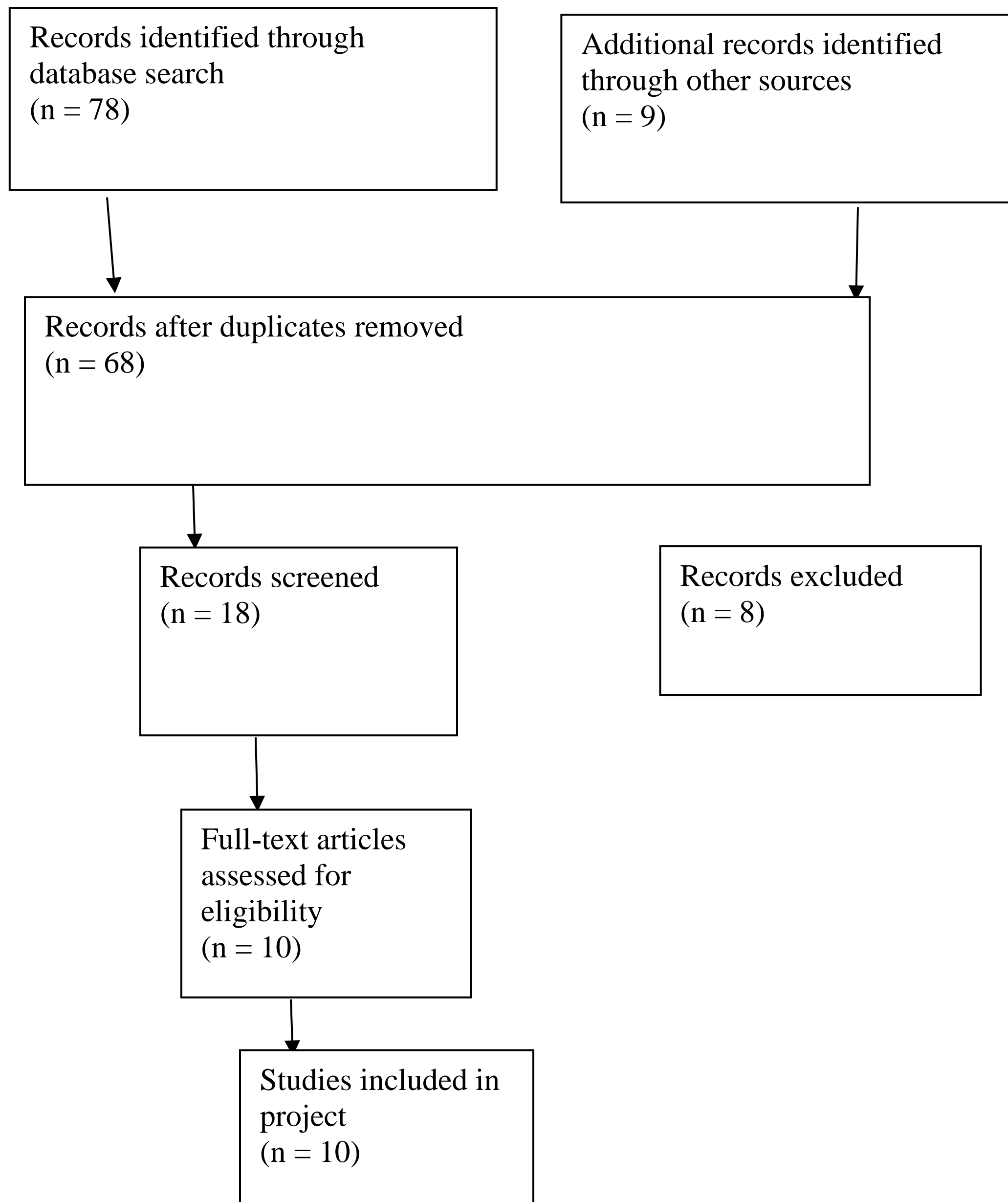
Appendix A: PRISMA Flowchart



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Appendix B: Characteristics of Included Studies

Citation		**Level of Evidence (LOC)**		
Study Design	**Study Aims**	**Findings**	**Limitations**	**Conclusions**
Ba-Essa et al., 2018		LOC-1		
Observational random audit	Tracking important clinical indicators of DM can result in improved care.	Urine and foot exams, yearly flu vaccines, aspirin prescribed, structured education and personalized nutritional advice	The random audit of medical records in DM in at the Diabetes Center	Self-care management behavior
Bower, K. et al. 2015		LOC-1		
Qualitative focus groups	To gain a better understanding of minority patients' beliefs about hypertension and to use this understanding to develop a model to explain gaps in communication between patients and clinicians.	The typical health professional's model, most believed this condition was episodic rather than chronic, and that it was caused, exacerbated, and evidenced by symptoms often associated with stress, racism, pollution, and poverty.	Focus groups were health in 2 adjacent neighborhoods, small study groups, and limited to minority populations	Need for research that tests interventions addressing discordances between lay and clinical beliefs about asymptomatic conditions
Burns, D. & Skelly, A. 2005		LOC-1		
Convenience sample	Describe the experience of living with type 2 DM in a sample of AA women	Reaction to the initial diagnosis of DM, self-management, diabetic education concerns	Small sample size. No instructions are given on how to cut back on foods or not given the proper diet	Health care providers did not have time to talk to patients, DM self-care education given in pamphlets
Callaghan T. et al. 2017		LOC-6		
Analysis of the CDC Wonder database, diabetes related mortality, rurality	To understand the scope of diabetes-related mortality in urban and rural America.	More rural areas the more diabetic-related mortality	The time it takes to study the impact of the mortalities of DM	Impact of rurality and race in people with DM
Carson, T., 2015		LOC-2		
Cross-sectional studies	The relationship between stress and dietary patters among this group	Nearly 1/3rd of the sample did not meet the recommended intake for any of the food group categories and did not differ by stress level	Potential misreporting of dietary intake and limited variability in stress measure outcomes.	There is no supporting evidence relating to stress and dietary decisions in Black women in the deep South

Golden, S., Earp, J., 2012		LOC-5		
Ecological	Describe the interactive characteristics of individuals and environments that underlie health outcomes have long been recommended to guide public health practice	Interventions that focused on individual and interpersonal characteristics	Health education research, theory, and training need to be enhanced to better foster successful efforts to modify social and political environments to improve health	Health educators need to extend our efforts to better address structural levels of social-ecological influences on behavior in order to have a more enduring health impact.
Gumbs, J., 2012		LOC-6		
Cross-sectional survey. Qualitative and quantitative	Explore the extent to which AA women participate in diabetes in DSME and the impact on self-care behaviors	The importance of DSME and the need for health care providers to develop strategies and policies to improve participation among the ethnic group of women		The significance of DSM had been to promote self-care behaviors among AA women living with type 2 DM
Marinez, D. et al., 2015		LOC-6		
Cross-sectional study	Obesity among black women in the USA is a significant public health problem	In order to address the disparately high rates of obesity among black women, health policies need to address social, economic, and political forces in racially segregated neighborhoods.	Living in a metropolitan area where blacks are more highly segregated is a risk factor for obesity in black women	Limited research on the relationship between racial residential segregation and disparities in obesity and the results are mixed in this study
McElfish, P., et al., 2016		LOC-1		
Focus groups	Focus groups with semi-structured interview guide with a community base participation research and use of Health belief model	Participants are unaware of the benefits of diabetes self-management behavior. The action is a diagnosis of DM, and there are varying levels of self-efficacy	HBM provided important contributions that can help advance diabetes self-management with the Pacific Islander communities	The research was limited to Pacific Islander communities
Richardson, B. et al. 2015		LOC-6		
Qualitative, focus group.	Community health worker (CHW) interventions have the potential to improve diabetes	Participants preferred that the CHW be knowledgeable and have personal experience managing their own diabetes or	Number of participants and breaches of confidentiality and privacy	The importance of strong community connection and residence in the community as key CHW recruitment criteria

	outcomes and reduce health disparities.	assisting family members with DM		