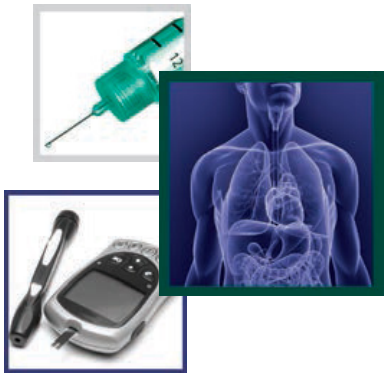

Diabetes self-management in African Americans: an analysis of two diabetes centers self-management policies in North Carolina

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ABSTRACT

Persons diagnosed with diabetes require self-management education to help them understand and manage the disease. Diabetes self-management education and lifestyle modifications have been directly associated with improved blood sugar control, fewer hospitalizations, and lower diabetes related medical cost. Effective preventive care measures and diabetes self-management education depends mainly on health care access and quality healthcare. The purpose of this article is to contrast and compare an analysis of two diabetes centers self-management policies in North Carolina.

Executive summary

■ Description of problem situation

Diabetes is one of the fastest growing epidemics and is the seventh leading cause of death in the United Sates (American Diabetes Association [1]. In the United States, 25.8 million Americans have been diagnosed with diabetes and an estimated 7 million remain undiagnosed. African Americans account for 4.9 million affected by this chronic illness, making diabetes a serious concern in the African American culture [2].

Persons diagnosed with diabetes require self-management education to help them understand and manage the disease. Diabetes self-management education and lifestyle modifications have been directly associated with improved blood sugar control, fewer hospitalizations, and lower diabetes related medical cost [2]. Effective preventive care measures and diabetes self-management education depends mainly on health care access and quality healthcare. To address this issue, Diabetes Management Center one opened in 1995.

Center one diabetes self-management guidelines were developed to prepare those affected by diabetes to improve their health through proper diet, medication, and physical activity. However, many patients do not attend diabetes self-management classes. According to CDC 2010, 43% of people with diabetes have never attended a diabetes course [2]. When reviewing the statistics for North Carolina, diabetes and diabetic complications are prevalent. For North Carolina residents with diabetes, 47% have never taken a course on diabetes management [3]. Major complications such as nerve damage, visual problems, cardiovascular events, and kidney disease are associated with poorly managed diabetes [2].

Policy alternative

Center two Diabetes Self-Management Guidelines are reviewed in this manuscript.

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KEYWORDS

- African Americans
- diabetes
- self-management education
- self-care

Recommendation

Implementing self-management education classes in poorer neighborhoods and offering evening and weekend opening hours may address disparities for lower income persons who could not otherwise access these classes.

Background

■ Description of problem situation

According to the CDC fact sheet, in 2010 Diabetes was the cause of death on 234,051 death certificates [4]. Diabetes is the fourth leading cause of death in African Americans. Persons with diabetes are predisposed to complications causing grave consequences such as hospitalization, disability and death. One common element, elevated blood sugar over time may present themselves as complications that include nerve damage, visual problems, and kidney disease. Blood sugar values that remain within a specific range, proper dieting, and physical activity can prevent or slow the progression of diabetes complications [2].

Diabetes self-management education is critical for all persons with diabetes and is necessary for survival. Education is needed because many patients don't have self-management knowledge. Diabetic patients must perform several self-care behavior activities in order to maintain blood sugar values within a specific range [1]. Self-management behaviors are continuous throughout a patient's lifetime. Studies indicated that diabetes knowledge and self-care behaviors produced successful outcome measures [5]. Consequently, many patients diagnosed with diabetes are not receiving diabetes self-management education when they are seeking information about the disease.

Diabetes continues to be a public health burden on the economy in the form of increased medical costs and indirect costs from work-related absenteeism, inability to work due to chronic disability, and premature mortality [1].

Outcome of prior efforts to solve problem

Diabetes self-management education (DSME) is the process of acquiring knowledge, skill, and ability necessary for diabetes self-care. The purpose of Diabetes Self-Management guidelines, are to prepare those affected with diabetes to: (a) Make informed decisions, (b) Cope with the demands of living daily with diabetes, and (c) Make healthy lifestyle changes in their behaviors. The guidelines support the needs and goals of persons affected by diabetes and are guided by evidence-based standards. The goal is to reduce the burden of diabetes on individuals by supporting good health to delay the onset of diabetes related long-term complications. Appointments for the diabetes self-management education are by referrals only, unless patients are paying out of pocket.

Diabetes Center one intervention includes four weekly class sessions held in the morning and evenings. The sessions focus on four areas of diabetes self-management based on the ADA 2014 guidelines: (1) Assessment and basic survival skills, (2) Diabetes self-care and long-term complications, (3) Carbohydrate counting, and (4) Support for lifestyle changes [6]. The first class session focus on basic diabetes education, nutrition, glucose monitoring, self-management skills and goal-setting. The second class session focus on exercise guidelines, blood glucose monitoring, medications, sick-day management, diabetes complications and foot care. The third class session focus on meal planning, nutrition needs, weight management and goal setting. And finally, the fourth class session focus on stress management and long-term goals [6].

Scope and severity of the problem

■ Assessment of past policy performance

Diabetes Center one serves nearly twenty to thirty people per day. Participants receive a diabetes evaluation, attend educational classes, and receive individual counseling. The classes are designed to target community members who are at risk of diabetes and newly diagnosed with diabetes. The classes meet four times per month, two morning sessions and two evening sessions. Each class covers diabetes self-management skills, physical fitness, and meal planning. Participants are referred by their primary physicians or other healthcare providers. *Diabetes Center one* diabetes self-management education is for people with Medicare, Medicaid, self-pay, and private insurance only. Consequently, many diabetics are poor, less educated, unemployed, uninsured, and less likely to attend diabetes self-management classes [7]. Also, individuals living in poor communities often encounter difficulties obtaining appropriate self-care management because of the distance from the facility.

Significance of policy situation

Diabetes self-management education is critical for all people with diabetes. Diabetes education and lifestyle modifications have been directly associated with improved glycemic (blood sugar) control, fewer hospitalizations, and lower direct medical cost [8]. Diabetes self-management education can lower a person's blood sugar average, and prevent emergencies like hypoglycemia (low blood sugar) and hyperglycemia (high blood sugar).

When Center one Diabetes Management Program and Center two Diabetes Management Program Guidelines are available for insured people with diabetes, it would prevent diabetes related complications, reduce health care costs, and improve outcome measures. By reaching these goals, the guidelines will contribute to the reduction of disparities in African Americans suffering with diabetes which is a Healthy People 2020 objective.

Need for analysis

Diabetes is a public health burden. Diabetes is expensive in terms of disability, mortality, and health care cost. According to the CDC diabetes is the leading cause of blindness, kidney failure, and non-traumatic lower limb amputations. People with diabetes have a greater risk of stroke and a greater mortality rate from heart disease [2]. Diabetes self-management education is necessary for outcome effectiveness. However, self-management education requires a referral from a healthcare provider. African Americans seldom have a consistent primary care provider and are less likely to be offered preventive management [9]. Also, Center one diabetes self-management guidelines are for people with Medicaid, Medicare, private insurance, and self-pay, which excludes the uninsured and unemployed diabetics. All persons with diabetes should receive diabetes self-management education regardless of their socio-economic status.

Problem statement

■ Definition of the problem

Diabetes Center one diabetes self-management guidelines fail to consider barriers to diabetes self-management participation which includes: (a) Facility location, (b) Class length and time, (c) Transportation, and (d) The uninsured. Diabetes self-care behaviors are essential to the successful management of the disease.

Major stakeholders

Major stakeholders include persons with diabetes, families, and healthcare professionals providing care, and/or administering diabetes education. A person with diabetes is anyone who has been diagnosed with Type 2 Diabetes (T2D) by a healthcare provider or is currently taking diabetes medications. The family is a major support system for persons affected by diabetes. The healthcare professional is any person providing care and/or delivering diabetes self-management education. The term healthcare professional may include any of the following: physician, dietician, certified diabetes educator, nurse, nurse practitioner, physician assistant, and pharmacist.

Goals and objectives

Centers one and two Diabetes Self-Management guidelines should ensure all persons, insured and uninsured with diabetes receive access to diabetes self-management education. That will include providing satellite facilities within low-income communities, and providing information beneficial to promote positive outcome measures. The goals of diabetes self-management education is to teach self-management skills, teach preventive measures to avoid long term complications of diabetes, and minimize health care costs through diabetes education [1].

Measures of effectiveness

The effectiveness of *Centers one and two* diabetes self-management guidelines for persons with diabetes includes: (a) improve clinical outcome measures, (b) reduced diabetes related complications, (c) improve quality of life, (d) reduce emergency department utilization, and (e) reduce health care cost.

Policy alternative

■ Description of alternative

Center two Diabetes Self-Management programs opened in 2012, and serve nearly twenty three thousand diabetics annually. The center provides an endocrinologist, an eye care provider, a podiatrist, and diabetes educators all

at the same facility. This is an appropriate model because, the preventive services such as foot and eye care, required annually for diabetics are located at the same site. *Center two* diabetes self-management educations require a referral from the patient's primary physician in order to be seen. The self-management program is a six hour program for newly diagnosed diabetics. All of the classes cover diabetes self-management skills. Like center one, center two self-management educations is for people with Medicare, Medicaid, self-pay, and private insurance only. The purpose of center two diabetes self-management guidelines is to provide persons with diabetes self-management training and include the following:

Persons with newly diagnosed diabetes will receive:

- Diabetes self-management training.
- Medical nutrition therapy.
- Multiple visits with a diabetes educator to evaluate progress towards goals.

Persons with existing diabetes will receive:

- An annual assessment of the need for self-management training.
- Initial and ongoing assessment of psychosocial issues.

Center two mission is to empower patients to management their diabetes on a daily bases.

Comparison of future consequences

Boren et al. conducted a literature review and evaluated the economic cost and benefits associated with diabetes self-management education. The studies showed several types of economic analysis: cost analyses, cost-effectiveness analyses, and cost-utilization analyses [8]. The authors identified twenty five relevant studies. Two of the studies will be discussed in this paper.

Balamurugan et al. implemented a diabetes self-management education program for Medicaid recipients and evaluated the results of the participant's clinical outcomes and health care costs [10]. Participants received 12 hours of group education over 3 visits on nutrition and self-management delivered by a registered nurse and a registered dietician. The findings indicated a reduction in health care use among Medicaid recipients with diabetes within 1 year [10].

Christensen et al. conducted a similar study and evaluated the cost savings and clinical effectiveness of a diabetes education program for improving nutrition knowledge, food portioning skills, hemoglobin A1C, and anthropometric indices [11]. The results indicated improved food portion knowledge, improved portioning skills, decreased A1Cs, and decreased body mass index. In addition the findings indicated glucose controls were estimated to reduce medical costs (hospitalizations) by $94,010. The authors concluded that the benefits associated with education on diabetes self-management and lifestyle modifications for persons with diabetes were positive and outweigh the costs associated with the intervention [8].

■ Spillovers and externalities

According to the ADA, the total estimated cost of diagnosed diabetes in 2012 was $245 billion, including $176 billion in direct medical costs and $69 billion in reduced productivity. ADA also noted that the cost for diabetes care in the U.S. (62.4%) is supported by government insurance (Medicare and Medicaid). Persons with diabetes who do not have health insurance have 55% more emergency department visits than people who have insurance [1]. The appraisal displayed the burden diabetes continue to have on the economy and the society.

■ Constraints and political feasibility

The United States has been spending more than its makes creating a significant deficit that may affect the enactment of government assistance diabetes self-management education. However, policy makers are interested in interventions that work well for reasonable cost. Diabetes self-management education that improve blood sugar control and reduce the complication of diabetes will also significantly reduce health care cost.

Policy recommendations

■ Criteria for recommending alternatives

Criteria for recommending diabetes self-management policies will include the following:

1. Center one and two diabetes self-management education should provide education for all people affected with diabetes, including the uninsured.

2. Congress must ensure that individuals

have physical and social access to the diabetes self-management services, which many people are denied.

3. Changing existing policies that result in the chronic underfunding of diabetes initiatives could play an important role in decreasing the incidence of type 2 diabetes.

■ Description of preferred alternative

Center two diabetes self-management guidelines is an ideal model because it offers podiatrist and eye care services at the same site. This is necessary because many patients are not receiving foot checks, and annual eye exams. *Center two* guidelines allows for repeat and follow-up classes, which is needed for persons with low literacy levels. The guidelines should provide diabetes self-management services for all persons including the uninsured.

■ Outline of implementation strategy

Implementation strategies are recommended the following:

1. Congress should align policies so that they are better able to reduce health care inequities.

2. Congress should coordinate discussions among people who work in the health sectors to ensure that appropriate policies are created and implemented.

3. State and local government should provide funding to support diabetes community initiatives.

Provisions for monitoring and evaluation

Centers one and two diabetes self-management facilities should collect, document and analyzed data to evaluate program outcomes. Provisions for monitoring and evaluation of *center one and two* diabetes guidelines should include: (a) Increased patients' knowledge, (b) Patients' health behaviors have changed, (c) Disease control has improved, (d) Patient health outcomes have improved, (e) Utilization has declined, and (f) Health care cost has declined.

Limitations and unanticipated consequences

Federal government spending remains a concern for centers one and two diabetes programs, particularly if services are provided for the uninsured. Providing services for the uninsured will increase government spending and add to the current overwhelming debt. More discussions need to address the benefits of diabetes self-management education for the uninsured.

Conclusion

In order to address diabetes self-management among African Americans there is a need to recognize the factors that contribute to the inadequate healthcare access in this population. There should be improved collaboration between community members, researchers, and policy makers to reform the disconnected approach that currently exist in type 2 diabetes self-management guidelines.

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