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Demands of Multiple Behavior Change in Type 2 Diabetes Risk Reduction

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ABSTRACT

The purpose of this study was to explore individual experiences of participation in multiple activities recommended for type 2 diabetes risk reduction. Twelve individuals at risk for type 2 diabetes described their experiences regarding risk-reduction activities. A grounded theory method guided data collection and analysis. Data analysis revealed facilitators and inhibitors associated with participation in recommended multiple behavior change for type 2 diabetes risk reduction. Our findings emphasize social and personal factors that increase or decrease the likelihood of adherence to prevention recommendations. Findings suggest that health care providers provide structured yet individualized recommendations to support multiple behavior change efforts.

Keywords: adherence, behavior change, prevention, type 2 diabetes

INTRODUCTION

Multiple behavior change interventions have a positive impact on cardiovascular disease risk,[1] weight management,[2] and type 2 diabetes outcomes.[3] For the prevention or delay of type 2 diabetes, the American Diabetes Association (ADA) recommends multiple lifestyle changes, such as nutrition and physical activity.[4] However, at-risk individuals might not receive the benefits of precise and intensive lifestyle interventions.[5,6] Health care providers are not given guidance to address the obstacles to risk reduction education and support for multiple behavior change.[4] In addition, adherence to type 2 risk reduction recommendations is complicated by lack of time, awareness, and skills.[7-9] It is important to identify the means by which individuals at risk for developing type 2 diabetes manage multiple lifestyle recommendations presented in the health care environment. Understanding common barriers and facilitators related to multiple behavior change will assist providers with ways to adequately and collaboratively address obstacles and improve patient outcomes.

Several factors may influence individual understanding and implementation of necessary behavior change. First, risk education typically occurs in a time- and resources-limited setting, lessening the ability of health care providers to effectively communicate necessary behavior changes.[10] Providers recognize the importance of ADA prevention guidelines but describe time restrictions from busy schedules and resulting brief patient visits,[11] preventing in-depth collaboration to resolve issues regarding implementation of recommendations. Spending less time with patients may convey a lack of concern about the seriousness of the disease. Matthews and colleagues[12] describe this perceived lack of concern as having reciprocal effects on patients who, in turn, do not take their diabetes and symptoms seriously. Time restriction may also affect the amount of information relayed to the patient about diabetes prevention. Ongoing support for individual self-management through health care providers is recommended, but specific strategies are not well described or structured.[4]

Second, providers may not adhere to evidence-based procedures outlined by the ADA. In one study, a chart audit revealed less than 80% adherence to ADA guidelines by primary care providers.[11] For example, only 20% of providers completed HbA1c measurements. In another study, patient data revealed primary care providers did not involve specialists in diabetes diagnosis or treatment due to perception of

straightforward criteria and interventions.[13] Yet, primary care provider knowledge of diabetes-related risk factors, diagnostic criteria, and recommendations has been found to be alarmingly low.[14] In this particular study, 6% correctly identified all risk factors and 17% correctly identified laboratory parameters for diabetes risk. ADA guided prevention interventions that utilize diabetes specialists have been found to be associated with positive patient outcomes, such as lowered HbA1c.[15] It is essential for providers to be well educated in and adhere to ADA guidelines and evidence-based practices to deliver effective prevention recommendations.

Third, education for type 2 diabetes risk reduction does not ensure individual participation in behavior change. It is essential to adequately discuss the reasons for multiple lifestyle changes and provide guidance on how to follow the recommendations.[16] Individuals learn risk-reducing strategies during medical appointments and then initiate and sustain lifestyle changes over a long period of time. Follow-up with health care providers regarding risk-reducing lifestyle changes, such as weight loss and increased physical activity, typically occurs only about once per year.[4] Consequently, the assessment process and education plan must identify and address individual needs and barriers to provide customized support.[17] Health care providers must assess the social, cognitive, and psychological characteristics of patients to enhance adherence to recommendations.[18] It is important for providers to understand how best to support individual risk reduction and self-management efforts in the context of multiple behavior change.

Challenges associated with risk-reducing education and support reveal the importance of understanding individual factors that affect risk reduction efforts and self-management. Individuals at risk for developing type 2 diabetes likely need to make multiple behavior changes related to diet, exercise habits, and adherence to medications. However, multiple behavior change may be challenging to implement with individuals who have little support. Health promotion and disease prevention is fundamental to the nurse practitioner (NP) role; therefore, understanding multiple behavior change in type 2 diabetes risk is valuable to NP-delivered care. The purpose of this study was to explore individual experiences of participation in multiple activities recommended for type 2 diabetes risk reduction.

METHODS

Study Design

The current study used a grounded theory research design for the purpose of understanding the individual experience with multiple behavior change in the context of type 2 diabetes prevention recommendations. The university institutional review board approved the research procedures.

Participant Recruitment

To recruit participants, researchers posted fliers in health care delivery (eg, primary care clinics) and local community (eg, pharmacies, drug stores, coffee shops) sites. Fliers indicated our desire to interview individuals who were 18 years of age or older and told by a health care provider that they were either at risk for developing type 2 diabetes or had prediabetes. Participants were also recruited through a snowball sampling approach at the end of each interview. Participant recruitment continued until data saturation was achieved.

Data Collection

A member of the research team scheduled interviews with individuals who indicated interest in the study and reported having $\geq$ 2 of the following criteria related to diabetes risk: (1) age $>$ 45 years, (2) overweight defined as body mass index (BMI) $>$ 25, (3) family history of diabetes, (4) impaired fasting glucose levels (100−125 mg/dL) or impaired glucose tolerance (2-h plasma glucose values in the oral glucose tolerance test of 140−199 mg/dL), (5) hypertension ($>$ 140/90 mm Hg), and/or (6) high-density lipoprotein cholesterol $\leq$ 35 mg/dL and/or triglyceride level $>$ 250 mg/dL. Two researchers conducted all interviews between August 2011 and June 2012, continually reviewed interview content and notes, and met regularly to discuss data saturation points. Interviews were audio recorded, transcribed verbatim, and verified for accuracy.

Individuals read and signed the consent form and were given compensation for their participation ($20) before the interview. Participants provided information about criteria related to type 2 diabetes risk