Applied Nursing Research 32 (2016) 1–6

Contents lists available at ScienceDirect

Applied Nursing Research

journal homepage: www.elsevier.com/locate/apnr

Original Article

Risk of type 2 diabetes: health care provider perceptions of prevention adherence☆

Jenifer J. Thomas, Ph.D. [a,*], John C. Moring, Ph.D. [b], Terra Harvey, B.S.N. [a], Talisha Hobbs, B.S.N. [a], Adara Lindt, B.S.N. [a]

[a] Fay W. Whitney School of Nursing, University of Wyoming, Laramie, WY 82071–2000, USA
[b] Department of Psychiatry, University of Texas Health Science Center at San Antonio, San Antonio, TX 78229–2994, USA

ARTICLE INFO

Article history:
Received 7 November 2014
Revised 11 March 2016
Accepted 18 March 2016
Available online xxxx

Keywords:
Provider perceptions
Adherence
Type 2 diabetes risk
Social cognitive theory

ABSTRACT

The aim of the current study was to describe health care providers' perceptions as to why individuals may or may not follow recommendations for reducing risk of developing type 2 diabetes. A grounded theory research design guided data collection and analysis. Data were collected from 16 health care providers through semi-structured interviews. Results demonstrated that health care providers perceived prevention adherence as related to individual characteristics of the patient and activities of the provider. Specifically, providers described assessment of patient-based characteristics associated with behavior, context, and traits. In addition, providers discussed giving attention to the patient–provider relationship and helping the patient incorporate small lifestyle changes. Providers might utilize social cognitive theory to understand personal and socio-structural aspects of adherence. In addition, providers should focus assessment and relationship building efforts on factors that support self-efficacy.

Published by Elsevier Inc.

In the United States, it is expected that over 50 million people will meet the criteria for type 2 diabetes by the year 2050 (Boyle, Thompson, Gregg, Barker, & Williamson, 2010). Increased prevalence of diabetes will further burden the healthcare system, increase costs, and decrease national productivity. Therefore, it is important to identify individuals at risk of developing type 2 diabetes, provide risk reduction strategies, and support individual risk reduction efforts. Risk of developing type 2 diabetes is greater for individuals with impaired fasting glucose (IFG) and/or impaired glucose tolerance (IGT), who are overweight (BMI equal or greater than 25 kg/m^2 or equal or greater than 23 kg/m^2 in Asian Americans), and who experience additional risk factors (American Diabetes Association, 2016). Additional risk factors include physical inactivity, first-degree relative with diabetes, high-risk race/ethnicity (i.e., African American, Latino, Native American, Asian American, Pacific Islander), A1C greater or equal to 5.7% (39 mmol/mol), previous IFG or IGT, history of cardiovascular disease, hypertension, high cholesterol, women who delivered a baby weighing more than 9 pounds, women diagnosed with gestational diabetes mellitus, women with polycystic ovary syndrome, and other clinical conditions associated with insulin resistance. Although many factors may cause type 2 diabetes, significant contributors to the development of insulin resistance and insulin deficiency are obesity, sedentary lifestyle, and poor diet.

Interventions for lifestyle change assist individuals with self-regulation of diet and exercise through education, behavioral skills, and support (Diabetes Prevention Program [DPP] Research Group, 2009; Rise, Pellerud, Rygg, & Steinsbekk, 2013). Lifestyle interventions have been found to reduce the rate of progression and incidence of type 2 diabetes (DPP Research Group, 2009; Gillies et al., 2007). Health care providers recommend weight loss, increased physical activity, counseling, medication, annual monitoring, and screening for cardiovascular disease (American Diabetes Association, 2016). Although the aforementioned interventions and recommendations show promising results (Aguiar, Morgan, Collins, Plotnikoff, & Callister, 2014), certain barriers exist that attenuate success of healthy lifestyle changes.

Individual patient characteristics that may contribute to poor recommendation adherence include lack of time, awareness, and skills. Specific to type 2 diabetes risk reduction, failure to adhere to providers' recommendations has been attributed to laziness or everyday stress (Pajari, Jallinoja, & Absetz, 2006) as well as lack of knowledge about steps to decrease one's risk (Cullen & Buzek, 2009). It is important to provide education about type 2 diabetes, but not all characteristics associated with adherence hindrances are related to lack of knowledge about the disease. For example, Venditti et al. (2014) found other barriers to lifestyle change such as problems with time management, social cues, holidays, low activity, thoughts/mood, illness, and motivation.

☆ Funding source: This publication was made possible by NIH grant # P20 RR016474 from the INBRE Program of the National Center for Research Resources. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of NIH. The authors acknowledge no conflict of interest with funding or the research study.

* Corresponding author at: Fay W. Whitney School of Nursing, University of Wyoming, Dept. 3065, 1000 E. University Avenue, Laramie, WY, 82071-2000. Tel.: +1 307 766 3546; fax: +1 307 766 4294.
E-mail addresses: jthoma41@uwyo.edu (J.J. Thomas), moringj@uthscsa.edu (J.C. Moring).

http://dx.doi.org/10.1016/j.apnr.2016.03.002
0897-1897/Published by Elsevier Inc.

Lifestyle change programs provide knowledge regarding nutrition and physical activity, but individual self-regulation is paramount. Self-regulation is influenced by various personal and socio-cultural attributes including ethnicity, health literacy, and emotions (Bagnasco et al., 2013). Many individual and contextual characteristics are associated with adherence to recommendations for type 2 diabetes risk reduction and should be considered in clinical decision-making. For example, Lutfey et al. (2008) found physicians rely upon perceived social, cognitive, and psychological characteristics of the patient when making clinical decisions. Such characteristics are predictive of adherence to recommendations and important to self-regulation of type 2 diabetes risk. Therefore, health care providers should provide appropriate recommendations and assess individual capacity for self-regulation.

Lifestyle change and self-regulation strategies for individuals who are at-risk of developing type 2 diabetes are essential to decreasing prevalence of the disease. Despite increased efforts to prevent type 2 diabetes, prevalence of the condition continues to increase (Narayan, Boyle, Thomson, Sorensen, & Williamson, 2003). Therefore, barriers to prevention and behavior change need to be examined further. Health care provider perceptions of adherence to recommendations could provide insight into the process of patient behavior change at the patient–provider level. Specifically, health care provider awareness of patients' individual and contextual characteristics might impact recommendation adherence. The goal of the current study was to describe health care providers' perceptions as to why individuals may or may not follow recommendations for reducing risk of developing type 2 diabetes.

1. Methods

1.1. Study design

The present study used a qualitative method and grounded theory research design for the purpose of understanding parameters of type 2 diabetes risk reduction recommendations, and specifically to describe health care providers' perceptions of reasons for adherence to recommendations. The constructivist grounded theory approach was selected because it seeks to understand implicit meanings and experiential views of research participants and to construct theory through researcher portrayal of participant constructed reality (Charmaz, 2010). The university institutional review board approved the following research procedures.

1.2. Participant recruitment

A convenience sampling approach was applied to participant recruitment and data collection process. The research team searched online databases and local phone books for health care providers in primary care and wellness settings. Wellness centers are described in the region as physical locations that individuals can receive a variety of healthcare services, including mental health, family medical attention, dental, and chiropractic services. Project personnel mailed letters explaining the purpose of the study and included a postage-paid response postcard for health care providers to respond with the following information: whether they were interested in participating, convenient days and times to meet, preferred meeting type (breakfast, lunch, or coffee), and contact information. Project personnel also visited local health care providers (e.g., offices, clinics) to explain the study and provide brochures and postage-paid postcards. Letters were sent to a total of 394 health care providers (93 to Cheyenne clinics, 231 to Ft. Collins clinics, 70 to Laramie clinics); 21 letters were returned as “return to sender”, 20 response cards were returned indicating no interest in the study, 4 response cards were returned indicating interest in the study but the providers did not respond to our attempts to contact, and 3 response cards were returned after the funding period ended for the study.

1.3. Data collection

Potential participants responded with post cards indicating interest in the study and convenient times and locations to meet. A member of the research team scheduled interviews with individuals who met the inclusion criteria (18 years or older, licensed in their discipline, and had direct contact with patients at risk for developing type 2 diabetes [i.e., M.D., N.P., P.A., Nurse Educator]) and were willing to engage in an audio-recorded semi-structured face-to-face interview lasting 30 to 60 minutes. Two members of the investigative team independently conducted all interviews between August and November 2011. Prior to the interview, participants read and signed the consent form and were given a small compensation for their participation (breakfast, lunch, or coffee). A semi-structured interview guide was used during all interviews in order to ensure consistent inquiries and interview format. The two interviewers continually reviewed interview content and notes, and met regularly to discuss data saturation points. Participant recruitment continued until data saturation was reached. The interviews were audio recorded, transcribed verbatim, and verified for accuracy.

Participants provided information about their credentials, number of years in practice, type of health care setting, hours worked per week, number of patients seen per week, and number of patients seen per week who are at-risk of developing type 2 diabetes. Participants also provided demographic information including age, gender, and ethnicity. During the semi-structured interviews, health care providers were asked about their beliefs regarding their patients' adherence to typical recommendations or referrals for risk reduction (e.g., What factors do you believe are related to whether or not patients follow your recommendations?). Follow-up questions were used to clarify and explore the respondents' answers.

1.4. Data analyses

The coding team consisted of one faculty member, one graduate student in psychology, and three undergraduate students in nursing. The faculty member received feedback and guidance from a senior faculty member in the department at each stage of the coding process. The constructivist grounded theory approach was applied to the coding process (Charmaz, 2010). Key categories were identified through an inductive process of initial and focused coding. During initial coding, all members of the coding team independently read each interview transcript and assigned conceptual labels to segments of the interview text. We coded the data in terms of psychosocial factors (how participants described their perceptions and feelings) and process (how participants described their actions). During focused coding, adequacy of segment labels was discussed by the entire coding team and commonly coded segments were identified. Next, the coding team made selective and conceptual decisions about larger segments of data by creating categories, comparing categories with associated data, comparing data to associated categories, and refining categories. After key categories were identified, the analysis was verified by returning to coded segments of interview text and evaluating the accuracy of associated key categories. Interpretive theorizing allowed us to explore implicit meanings and processes as well as conceptual relationships between key categories. Core themes were determined during the interpretive theorizing process.

2. Results

Sixteen (10 female, 6 male) health care providers from Southeast Wyoming (11) and Northern Colorado (5) were interviewed for this study. The sample consisted of 6 medical doctors (M.D.), 4 nurse practitioners (N.P.), 1 physician assistant (P.A.), 2 nurse educators (1 R.N. and 1 M.S.), 1 registered nurse (R.N.), 1 doctor of chiropractic (D.C.), and 1 registered dietician (R.D.). The reported number of years in practice ranged from 4 to 38 years ($M = 17$, $SD = 10.2$). Hours worked per week ranged from 4 to 80 ($M = 46$, $SD = 18.2$). Number of patients seen per week ranged from 8 to 130 ($M = 62$, $SD = 36.6$). Participants