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ACCESS AND BARRIERS TO DIABETES SELF CARE EDUCATION AND
SUPPORT GROUPS IN A RURAL SOUTHERN MINNESOTA COMMUNITY

By

ELIZABETH WATERS

A THESIS SUBMITTED
IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE
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Elizabeth Waters

Access and Barriers to Diabetic Self Care Education and Support Groups in a Rural
Southern Minnesota Community

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This thesis has been examined and approved by the following members of the thesis
committee.

Dr. Hans-Peter deRuiter, Advisor

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ABSTRACT

Diabetic education and support groups promote self care, improve health outcomes, and decrease health care costs. Self care, an important aspect of diabetes care, can be promoted through diabetes education and support groups. Few studies have been done to explore rural population's access to and attendance of diabetes self care education and support groups. The purpose of this qualitative study was to determine if residents of a rural southern Minnesota community have access to diabetes education and support groups and what barriers they face to attending the groups. The understanding gained through this study will help to develop nursing interventions to assist the diabetic patient to connect with diabetes education and support groups. The study was qualitative, utilizing the interview method. The setting was a rural southern Minnesota community with six voluntary participants over age 18 with type 2 diabetes. Interviews were conducted with four guiding questions. The study results suggest that intervening early after the type 2 diabetes diagnosis is essential to promoting self management as this is when interest is peaked and patients are most open to learning. Nurses should assess for self care deficits and intervene to promote self care with all diabetic patient interactions. Incorporating diabetic education, such as handouts, websites, education and support groups, and brief explanations of complications, at every visit is important to promote self care.

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CHAPTER I

Introduction to the Problem

Diabetes affects more than 25 million Americans or over 8% of the population and is the 7th leading cause of death in the United States (Center for Disease Control [CDC], 2011). Complications associated with diabetes include heart disease, hypertension, renal disease, eye disorders, and neurovascular disorders (CDC, 2011). Diabetes is a chronic disease requiring major life style changes in areas such as diet, exercise, blood glucose monitoring, and possibly medication regimes.

Self directed care has been shown to improve outcomes and quality of life for the diabetic patient (CDC, 2011). Including patients in care decisions and educating them on self care gives patients a sense of responsibility for their own health (Knighton, 2009). Educating the patient on diabetes and lifestyle changes is an important part of self care. Education can be provided through individual counseling, written material, meeting with professionals such as nurse practitioner diabetic educators and dietitians, or attending support groups. Support groups are very important as patients want not only health care provider information, but also they want to share their experiences with others facing similar situations (Knighton, 2009). Support groups provide reassurance, information, and support (Knighton, 2009). The American Association of Diabetic Educators (AADE) (2010) recommended group based self care interventions, which have been shown to decrease health care costs and improve outcomes for the diabetic patient as evidenced by reduced glycated hemoglobin and increased diabetes knowledge.

Diabetes prevalence is higher in rural areas (Gamm, Hutchinson, Dabney, & Dorsey, 2003). This increased prevalence is due to rural residents being poorer, lacking health insurance coverage, and having less access to health care services (Gamm, et al, 2003). Because of these barriers, self care seems even more important to encourage in rural communities. Many rural areas have diabetes support groups available, although the extent of their use by local residents uncertain.

Problem Statement

Access to diabetes self management groups has been shown to improve health outcomes and decrease health costs (AADE, 2010). Self care is an important aspect of diabetes care. Diabetes education and support groups promote self care. Few studies have been done to explore rural population's access to and attendance of diabetes self care education and support groups.

Purpose of the Study

The purpose of this qualitative study was to determine if residents of a rural southern Minnesota community have access to diabetes education and support groups and what barriers they face to attending the groups. Diabetic education and support groups promote self care, improve health outcomes, and decrease health care costs. The understanding gained through this study will help to develop nursing interventions to assist the diabetic patient to connect with diabetes education and support groups.

Research Questions

1. Do you access groups available to you in your rural community that support your diabetes?
2. What is your experience with these groups?
3. What barriers do you face in attending the groups?
4. What would make attending the groups easier for you?

Definition of Terms

Several terms are used throughout the study. Self care has been defined by the World Health Organization (WHO) as “the activities individuals, families, and communities undertake with the intention of enhancing health, preventing disease, limiting illness, and restoring health. These activities are derived from knowledge and skills from the pool of both professional and lay experience. They are undertaken by lay people on their own behalf, either separately or in participative collaboration with professionals" (Australian Self Medication Industry (ASMI), 2008). Self care and self directed care are used interchangeably in this study. Support groups for this study were community based organized groups open to the public. The objectives of the support groups were to provide education and support from both professionals and peers. Rural may be defined as “sparsely populated” areas (Lee & Winter, 2006). A rural southern Minnesota town with a populations of less than 5000 was used in this study.

Summary

Diabetes is a chronic illness that requires patients to adapt to a new way of life and initiate self care. Self care has proven to improve outcomes and quality of life for the diabetic patient (CDC, 2011). Patients often struggle with these changes and feel alone in

their battle. This can be especially true in rural areas where health care access is limited. Community support groups can help educate and connect those living with diabetes in the rural area. Connecting patients living with diabetes to self care groups decreases health care costs and improves outcomes as evidenced by reduced glycated hemoglobin and increased diabetic knowledge (AADE, 2010). It is important to know if diabetic support groups are accessible to those living in rural areas and what barriers are present preventing group attendance. This knowledge will help nurses better connect rural patients with diabetes education and support groups and community resources necessary to improve patient care.

CHAPTER II

Review of the Literature

Introduction

Diabetes is a growing health concern with the disease costing Americans over \$174 billion in 2007 with \$116 billion in medical expenses and \$58 billion in lost productivity (CDC, 2011). Medical expenses are more than double for the diabetic patient compared to the non diabetic patient (CDC, 2011). With diabetes affecting 25 million Americans and the numbers on the rise, this cost is only expected to increase (CDC, 2011). Living with diabetes in the rural community may be even more difficult. The prevalence of diabetes is higher in the rural community than in the urban community due in part to generally poorer rural residents with less health care coverage and decreased access to care in rural areas (Gamm et al., 2003).

Research has shown self management of diabetes imperative to decreasing costs, improving outcomes, and improving quality of life (CDC, 2011). Self management education and community support groups are an important aspect of learning to manage diabetes effectively. Given the challenges facing the rural resident with diabetes, self care seems even more important for this population. Unfortunately, most research in self care has been with urban populations. The availability and accessibility of diabetes self care education and community support groups in the rural community is unknown. More research is needed to look at the availability of diabetic self management education and community support groups in the rural area and barriers that may exist to attending.

A review of literature was performed to further explore self management education and community support groups in the rural area. Search engines Pub Med, Academic Search Premier, CINAHL Plus, ProQuest Nursing Journal, and Guidelines.gov and the word combinations diabetes support groups, rural health care access, and diabetes self care were utilized. Initially 45 articles were deemed related, which was later narrowed to 16 articles for discussion in the literature review. Several themes were discovered through the review of literature related to barriers to rural health care access, the need for diabetes self management education, and the lack of social support for rural populations (see Appendix A).

Barriers to Rural Health Care Access Exist

Rural areas are very different from urban areas which provide for unique health care access barriers. Travel related issues such as travel time, remoteness, distance, and transportation barriers were common themes of the rural area (Brems, Johnson, Warner, & Roberts, 2006; Graves, 2008). Urban areas usually have large grocery stores, access to public transportation, several pharmacies, and a variety of health care options. Rural areas may have one small grocery store, a small pharmacy, a public bus that runs Monday through Friday from 8am to 5pm, and a local family practice clinic with two or three providers-if they are lucky. If they are not lucky, they have to provide their own transportation and travel miles to access groceries, medications, and medical care.

Privacy and confidentiality concerns provide another barrier to health care access in the rural community (Brems et al., 2006; Graves, 2008). The closeness of the rural community can make it difficult to separate personal and professional relationships (Brems et al., 2006). One may attend church or other social events with the local

physician, radiology technician, and billing manager, making a visit to the local clinic feel awkward and less professional. Patients may avoid accessing care due to the fear of someone seeing them or having to give private information to someone they know (Brems et al., 2006). Language and lack of education were also common barriers to rural health care found in the research (Brems et al., 2006; Graves, 2008).

Diabetes Self Management Education Important

Diabetes is a complex disease requiring many life adjustments including changes in diet, activity, and blood glucose monitoring (CDC, 2011). A diagnosis of diabetes can be overwhelming for patients and they may feel they are incapable of caring for themselves. Learning diabetes self care is imperative to controlling and preventing complications.

Diabetes self management education is an important aspect of learning to live with diabetes and has been shown to improve outcomes and quality of life for the diabetic patient (Bruce, Davis, Cull, & Davis, 2003; CDC, 2011; Chen, Huang, Peng, Jong, Chen, & Lin, 2011; Choudhury, Brophy, Fareedi, Zaman, Ahmed, & Williams, 2009; Funnell, Brown, Childs, Haas, Hosey, Jensen, et al., 2009; Jack, 2003; Johnson, 2009; Kent, Haas, Randal, Lin, Thorpe, Boren, et al., 2010). Diabetes self management education includes adhering to a healthy diet, increasing activity, losing weight, monitoring blood glucose, accessing preventive care such as annual eye and foot exams, and adhering to medication (CDC, 2011).

Self management education empowers the patient to take control of their disease (Bruce et al., 2003; Choudhury et al., 2009; Hicks, 2010; Nagelkerk, Reick, & Meengs, 2006). As patients gain knowledge, they gain confidence and a sense of responsibility in

caring for themselves (Knighton, 2009). Self esteem and self efficacy grow with diabetes self management education (Jack, 2003). Medical costs related to diabetes are also less when self management is in place (CDC, 2011).

Social Support Needed for Rural Population

Social support is an important aspect of living with diabetes. The research showed that social support through family, friend, and community involvement is needed to promote healthy outcomes for the diabetic patient (Clarke, 2009; Fukunaga et al., 2011; Hicks, 2010; Shaw, Gallant, Riley-Jacome, & Spokane, 2006). Social support was lacking in the rural community, possibly due to remoteness, travel time, language barriers, or confidentiality concerns (Brems et al., 2006; Graves, 2008; Shaw et al., 2006). Interestingly, one study found that only 58% of those who agreed to attend a diabetic education group actually showed up for the session (Choudhury et al., 2009). Women also reported feeling less supported and were slower to join groups (Clarke, 2009).

Group based interventions, including self care education and support groups, were recommended for all diabetic patients as they have been shown to decrease health care costs and improve outcomes (AADE, 2010). Diabetes support groups improved patient knowledge and quality of life (Chen et al., 2011; Johnson, 2009; Kent et al., 2010; Shaw et al., 2006). Connecting with others facing similar challenges and sharing stories has been reported as therapeutic for the diabetic patient (Hicks, 2010). Rural residents reported a need for diabetes support groups (Chen et al., 2011; Shaw et al., 2006; Strome, Lynch, & Egede, 2011). With more than 93 million healthcare information seekers, the

Internet was becoming a useful tool for diabetes education and support (Bull, Gaglio, McKay, & Glasgow, 2005).

Guiding Theory

Dorothea Orem's General Nursing Theory, which encompasses Self Care Theory, Self Care Deficit Theory, and Theory of Nursing Systems, was used to guide the study. Orem's believed people are unique individuals who should be responsible for their own care. Self care behaviors are learned from a sociocultural environment and may be altered through the acquisition of knowledge. Nurses assess for self care deficits and intervene to promote self care. Interventions include guiding, supporting, educating, doing for others, and providing a health promoting environment. Social, interpersonal, and regulatory technologies are developed to promote self care (Orem, 1991).

Diabetes requires many lifestyle changes in order to prevent complications, making self care an important aspect of living with the disease (CDC, 2011). Diabetes may be even more challenging for those living in the rural area due to less care access, thus making self care even more vital. Applying Orem's theory, a patient diagnosed with diabetes would be identified as having a self care deficit. This deficit creates a need to intervene. Interventions would include providing teaching, guidance, and support in a health promotion environment to encourage self care. This could be accomplished with diabetes self care education and support groups.

Summary

Diabetes self care education and support groups are an important link to improving quality of life, improving outcomes, and decreasing health related costs (CDC, 2011). The research on diabetes self care education and support group availability in the

rural community is lacking. It is known that barriers to rural health care access exist, but there is little about barriers to attending diabetes self care education and support groups.

This study sought to clarify whether diabetes self care education and support groups were accessible to rural populations, what barriers exist to attendance, and what would make attending easier.

CHAPTER III

Introduction

The purpose of this research study was to determine the accessibility of diabetes education and support groups in a rural southern Minnesota community and what barriers exist to attending such groups. This chapter describes the research methodology used for the study, the study population and sample, the instrument used to collect data, and an explanation of the data analysis methodology.

Research Design

The study was qualitative using the interview method. Qualitative research focuses on the whole rather than the parts, seeking to understand cause and effect relationships to gain insight about an experience (Burns & Grove, 2009). It is important to understand the reasons why people do or do not attend diabetes education and support groups in order to develop interventions to promote attendance in the future. Limitations to qualitative research include difficulty in replication, researcher/participant relationship, and researcher bias.

The interview method was chosen as it allowed for deeper explanation and meaning of responses to research questions. Interviewing people with diabetes helps the researcher to gain understanding through the personal experiences of the participants. Interviewing also allowed the researcher to encourage the participant to explore and expound on answers to questions. The researcher's role during the interviews was of observer as participant. There were limitations to the interview method. Because the interviews relied on self reporting, there was the possibility of the participant providing

inaccurate information. Interviews were also time consuming and the risk of subject bias from the researcher were possible (Burns & Grove, 2009).

Study Population and Sample

Diabetic adults living in a rural southern Minnesota community were chosen for the study. Southern Minnesota residents living in a community with a population of less than 5000 and within 30 miles of a diabetic self help and support group were interviewed. The participants were all over 18 years of age, type 2 diabetic, able to speak and understand English fluently, able to make decisions for themselves, lived independently (not in a nursing home), had no cognitive impairments, and were willing to participate in the interview. All vulnerable persons were excluded from participating in the study. Through church bulletin ads and networking, a sample of participants was interviewed for the study until saturation of data was obtained with a maximum limit of 10 interviews. In order to decrease discomfort of participants, interviews were conducted at the participant's preferred location, either in their home or other participant-specified location where privacy could be maintained. The interviews were digitally recorded and transcribed afterwards with any personal identifiers removed. The digital recordings and transcripts will be kept for 5 years in a password protected computer. Limitations included time and interview ability of the researcher.

Instrument

Data were collected utilizing a semi-structured interview to answer the following open-ended questions:

1. Do you access groups available to you in your rural community that support your diabetes?
2. What is your experience with these groups?
3. What barriers do you face in attending the groups?
4. What would make attending the groups easier for you?

Having a structured set of questions helped to save time and provided focus for the study.

The participants were allowed to expound and clarify for the researcher any questions as well.

Data Collection

Approval to conduct research involving human subjects was obtained from Minnesota State University, Mankato Institutional Review Board (IRB) prior to data collection. The IRB application included general study information, research study purpose and description, risks and benefits to participants, and the participant consent form (see Appendix C). After IRB approval, the data collection ensued.

A semi-structured interview with open-ended questions provided the data for the study. Interviews were digitally recorded and transcribed with all personal identifiers removed. Participant responses did not place subjects at risk for penalty and were not disclosed to anyone outside of the study such as primary care providers or family members. If any worrisome health issues were disclosed by the participant in the interview, the interviewer would recommend that the participant seek care with their

primary care provider or at the emergency room for evaluation and treatment. This did not occur during any of the interviews. To minimize discomfort for the participants, the interviews were at the location choice of the participants, either in their home or other participant specified location where privacy could be maintained. The interviews were approximately 20 minutes in length, with another 30 minutes allotted afterward for the researcher to compile notes. Each interview was transcribed, coded, and placed into a separate folder until further analysis. The interviews were conducted over a one month period. Data collection through interviewing continued until saturation of information was present and no new themes emerged.

Data Analysis

Data analysis began during the interviews. The predetermined questions guided the interviews, with the participants allowed to expound as necessary. Through further questioning, the interviewer attempted to elicit as much detail as possible about the participant answers. Participants varied as to their level of explication.

Manual data reduction was performed after the interviews were complete to ascertain meaning from the results. Themes from the interviews were grouped for coding and entered into a spread sheet. The spread sheet served to store, sort, and catalog the information. The themes were analyzed to find plausibility and determine conclusions. The study findings will be shared with those in charge of the local diabetes self care and support groups in the community and may be used as the basis for further research.

Summary

This chapter described the research methodology, the study population and sample, the instrument used to perform the study, and the data collection and analysis

methods. The research was important in order to understand if patients with diabetes attend diabetes education and support groups in a rural community and barriers to attending. The knowledge gained from this study will help determine nursing interventions to assist the diabetic patient to connect with diabetic education and support groups and may further identify areas of needed research.

CHAPTER IV

Introduction

The purpose of this qualitative study was to determine if participants from a rural southern Minnesota community had access to diabetes education and support groups and what barriers they faced to attending. This chapter explains the results of the data collected through the interviews. Sample demographics, data analysis of the responses to the research questions posed, and the emerging themes are presented in the chapter.

Several themes came to light through the interviews and data analysis (see Appendix B). A major theme discovered through data analysis was how the participants gained knowledge and information. Another theme identified by participants was lifestyle changes they faced since being diagnosed with type 2 diabetes. They also expressed the degree to which they felt in control of their diabetes and how hearing others' stories influenced their feelings and behavior toward the disease.

Sample Demographics

All of the participants were type 2 diabetics with a mixture of insulin and noninsulin dependent status. The majority of the participants were female ranging in age from 40 to 80 years of age with years of diagnosis ranging from 4 years to 25 years. The participants all lived within 25 miles of the self care support group offered in the rural southern Minnesota community. The majority of the participants lived with family members. The participants were found through a church bulletin ad and through word of mouth. Participants were interviewed in a variety of settings, including the participant home, interviewer home, and the local hospital. The interviews were approximately 20

minutes in length per participant. The participants all readily agreed to the interviews. Some participants seemed to be more open than others in talking about their diabetes. This may be related to lack of knowledge about self help support groups, the interview questions, the relationship with the interviewer, or the researcher interview style.

Data Analysis

The interviews were guided by four leading questions. The questions and results are described here. Several themes emerged through analysis of the data. The themes are discussed below.

Question 1. *Do you access groups available to you in your rural community that support your diabetes?* Of the participants interviewed, half were aware of and had access to groups to support their diabetes self care and half had no knowledge of groups available in the area. The participants who knew of the groups learned of them through provider referral and peers. The other participants had no knowledge of groups to support their diabetes.

Question 2. *What is your experience with these groups?* Few participants had actually attended a group in the past. One participant attended a group because her friend “is kind of a leader of it.” She found the group “interesting.” Another participant attended a group in another town prior to moving to the area. She no longer attended the group even before moving as she felt not enough new information was presented, and she felt the group lacked social interaction and the desired support; “just talked about stuff you got when you were diagnosed...wasn’t much interaction for the people...I found it more helpful to go out afterwards and talking then...we were able to do what a support

group is suppose to do.” None of the participants were attending a group at the time of the interviews.

Question 3. *What barriers do you face in attending the group?* None of the participants were attending groups regularly at the time of the interviews. Barriers identified by participants include driving distance, time, unawareness of groups, personal preference/lack of interest, and not feeling a group would be of benefit. Travel time and distance was a concern, “that seems like a long trip to drive to a support group...15 miles in and 15 miles home again.” Personal preference and lack of interest was a barrier, “My preference of not going...I don’t need to sit with a bunch of people and talk about it.” Most felt they had their diabetes under control and did not feel a group would benefit them. One participant stated, “I honestly don’t think I’d go the way my diabetes is going.” Lack of participant awareness of group availability in the area presented another barrier to attending. The researcher did not ask the participants to expound on what they felt caused the lack of awareness, though provider communication should be considered.

Question 4. *What would make attending the groups easier for you?* The participants varied regarding what would make attending easier, although most had no interest in attending no matter what the situation. Those with some interest in the group felt attending may be easier if the group were closer to home. When one participant was asked if she would be interested in attending a group if the group were in her housing complex she stated, “I imagine I would, yes.” Another study participant thought different group time availability would help (only available one day and time), “Tuesday mornings is when they meet, but I don’t go because I have other things I like to do on Tuesday mornings.” Although the participant admitted the accommodation may not improve her

attending, “I don’t know that that would help encourage me to do it or not.” Other participants felt attending would be easier if new information would be presented, if their disease progressed to the need for insulin, and if more social interaction were provided. Some of the participants felt they would use an online support group if available, while the others had no interest in an online support group. The lack of interest from some participants may be related to the age of the participants.

The participants felt attending groups to support their diabetes would be easier when first diagnosed; “I think I would when I was first diagnosed with it. I would have because I didn’t understand diabetes.” The majority of the participants felt they had their diabetes under control and did not feel a group was needed to support them; “I think I have my diabetes pretty much under control. I’m doing Ok, I can tell my body pretty good.”

Theme 1: Gaining Knowledge and Information

The participants gained knowledge and information from a variety of sources. The participants found information on the Internet, through mailings such as diabetic magazines, through brochures from the provider’s office, through dietitian and diabetic educators, through insurance company support lines, and from their primary care provider at office visits. All but one of the participants visited with a dietitian or diabetic educator when they were first diagnosed with the number of visits ranging from one to three. All of the visits were conducted soon after diagnosis. None of the participants visited regularly with either the dietitian or nurse practitioner diabetic educator.

Primary care providers were the main source of information for the participants at the time of the interviews. Participants felt they needed more information and time from

their primary care providers; “The only time we talk about it (diabetes) is when an issue comes up so there hasn’t really been education that way unless I’ve asked. Talking to the doctor and getting more information, you know often times you don’t get that because the doctors have to have their quota of patients a day so it’s like they don’t want to spend time. It is kind of overwhelming when you are at the doctor and you don’t have enough time and you feel like you’re rushed.” However, the participants agreed their primary care providers answered questions if they ask.

The study participants voiced concern over a need for more information in general. “There could be more material out there on diabetes...it seems like most of the information is geared to people that take insulin. People that can control it with pills and diet, I just don’t think there’s a whole lot of information out there for them.” Participants felt provider handouts to refer to later and share with family would be helpful. I like something to take with me for the simple fact you can’t remember everything. There are changes that need to be made and lifestyle that affect not only the individual, but the family, so educate the family as much as the person.”

A question as to the accuracy of information or the participants’ understanding was discovered during the interviews. One participant seems to interpret the diagnosis of diabetes as applying only after having to take insulin. When asked how long she had diabetes, she stated, “About 25 years. Before that I was on pills.” And when telling about her family members she stated, “One or two have to kind of watch their sugar. They are not on insulin, though, but they have a tendency towards it (diabetes).” The participants’ knowledge of diabetes was also questioned during analysis relating to the participants feeling of disease control. Although the participants felt they had their

diabetes under control, health issues were mentioned such as a foot ulcer, frequent low blood sugar at night, and weight problems.

Theme 2: Lifestyle Changes

The responses from the study participants varied related to lifestyle changes since being diagnosed with type 2 diabetes. Some participants did not feel they had made any lifestyle changes. Even though some participants did not notice lifestyle changes, diet was mentioned by all of the participants; “Basically the only lifestyle change is the diet.”; “Mostly eating habits...I’ve changed my diet. Have learned what I can and what I can’t eat. I really tried to watch what I ate. I eat everything, I just don’t eat as much.” The majority of the participants had increased medical appointments ranging from every month to every six months. Two of the participants did not feel they had more appointments related to their diabetes, though they do see their provider regularly. “I can’t say I go to the doctor more (for diabetes) because I pretty much go for other things.”

Participants mentioned the emotional changes that occur with a diagnosis of type 2 diabetes. One participant explained, “I mean one day you’re ok living with it and the next day it’s like why me...It’s like whenever you find something out that’s life changing, which diabetes is, you go through much like a grieving process you know, and the denial comes in...I really don’t have it, it had to be a fluke...Believe it!” Another participant relayed a similar message, “I just basically took it (the diabetes diagnosis) with a grain of salt...denial is what it boils down to. No fear of it (diabetes); healthy too long to worry about it.”

Theme 3: Diabetes Control

The majority of the participants felt they had their diabetes well controlled at the time of the interviews. “I think I have my diabetes pretty much under control. I’m doing fairly well. I’m doing ok. I don’t have trouble very often...I’m not what some people have, brittle diabetes, I’ve never had that.” One participant mentioned a foot ulcer, another talked about experiencing frequent low blood sugar at night, and several discussed being overweight. Even with these issues, the participants felt their disease was under control.

Feeling their diabetes was controlled was a major reason the participants expressed for not attending a group or feeling a group would be beneficial to them at the time. One participant stated, “I honestly don’t think I’d go the way my diabetes is going now.” When another participant was asked if interested in attending an education support group the response was, “Nope. I can tell my body pretty well, you know, what’s happening with it so I think it’s ok.”

Theme 4: Stories Influence

Stories influenced the study participants behavior and feeling toward diabetes. Behavior was influenced by stories as one participant reflected, “I had a friend whose dad had diabetes really bad and he had both of his feet amputated and that sticks in my mind. And so I take really, really good care of my feet.” Others stories related to self care, such as diet and checking blood sugar. All of the participants knew someone with diabetes. All felt they gained information about caring for their diabetes through relationships and hearing stories. When asked about information they had learned through stories,

participants responded, “I’ve got a friend that has it (diabetes) and she has just gone on insulin. I have a sister that had a little bit of diabetes...she was a nurse.”

Some of the participant’s feelings toward diabetes were influenced by stories. The participants’ interpretation of a story factors in and may skew the accuracy of the information, “One of the things is you can eat all the meat you want...the protein outweighs the fat.” Some seemed to feel better about their own situation after hearing stories from others. As expressed by a participant, “I don’t have to do carb counting like some people do and I have a friend who is quite severe diabetic and he figures out exactly what he ate and then takes his insulin accordingly, but I’ve never had to do that. I’ve always taken kind of a prescribed amount and it seems to do ok.”

Summary

This chapter presented the sample demographics, data analysis of the responses to the research questions posed, and the emerging themes expressed through the analysis. The themes brought forth through the interviews included how participants gained knowledge and information, lifestyle changes faced since diagnosis of type 2 diabetes, feelings about controlling their diabetes, and how hearing the stories of others has influenced the participants’ feelings and behavior related to the diabetes. The themes represent areas of weakness identified in diabetic self care education access. The importance of indentifying the weaknesses present will help nurse practitioners improve implementation of diabetic self care education in rural communities.

CHAPTER V

Introduction

Research has shown self management of diabetes important to decreasing costs, improving outcomes, and improving quality of life (CDC, 2011). Social support through family, friends, and community involvement is needed to promote healthy outcomes for the diabetic patient (Clarke, 2009; Fukunaga et al., 2011; Hicks, 2010; Shaw, Gallant, Riley-Jacome, & Spokane, 2006). Self management education and community support groups may help effectively manage diabetes. Given the challenges facing the rural resident with diabetes, self care seems even more important for this population than others. Unfortunately, most research in self care has been with urban populations.

The purpose of this qualitative study was to determine if residents in a rural southern Minnesota community accessed diabetes education and support groups and what barriers they faced to attending such groups. The knowledge gained through this study will help nurses' better care for patients with diabetes that are living in the rural community. With over 20% of primary care nurse practitioners practicing in the rural area, it is imperative nurses understand how best to promote self care of the rural diabetic patient (Presley, 2010).

The research questions answered through this study were: 1. Do you access groups available to you in your rural community that support your diabetes? 2. What is your experience with these groups? 3. What barriers exist to attending the groups? 4. What would make accessing the groups easier? Confirmations of previous information along with new information were brought forth in the study. Several themes bring to

light areas in need of improvement in promoting self care of the diabetic patient in the rural area. Limitations, implications for practice, and implications for future research will also be presented in the chapter.

Findings

The responses to the four leading interview questions brought to light several areas where nurses can intervene to improve care. The results of the first question, *Do you access groups available to you in your rural community that support your diabetes*, are of major concern. Group-based interventions, including self care education and support groups, are recommended for all diabetic patients as they have been shown to decrease health care costs and improve outcomes (AADE, 2010). Diabetes support groups improve patient knowledge and quality of life (Chen et al., 2011; Johnson, 2009; Kent et al., 2010; Shaw et al., 2006). Of the participants interviewed, only half were aware of and had access to groups to support their diabetes. The participants knew of the groups through provider referral and peers. Some participants had no knowledge of groups to support their diabetes self care. It is a major concern that only half the participants were aware of self help and support groups available in the community. People cannot attend groups unless they are aware of what is available to them. There needs to be more awareness in the community of groups available to support diabetes. Primary care nurse practitioners in the rural area are in the position to raise awareness during office visits and through collaboration with the public health nurses.

The second question, *What is your experience with these groups*, is a continuation of the results to the first question. Few participants had actually attended a group in the past. This makes sense since only half of the participants were aware of the groups

availability. Again, more awareness of groups available in the area is needed. Primary care nurse practitioners need to explain the groups and the benefits of attendance at the time of diagnosis of type 2 diabetes and at subsequent visits. Encouraging attendance early on when patients are eager to learn will improve attendance.

The third question, *What barriers do you face in attending the groups*, also relates back to lack of awareness of the groups available. One cannot attend a group if they do not know one is available. None of the participants were attending groups regularly at the time of the interviews. Barriers identified by participants included unawareness of available groups, driving distance, time, schedule, personal preference, and feeling the group would not be of benefit.

In the review of literature, travel-related issues such as travel time, remoteness, distance, and transportation barriers were common themes of the rural area (Brems, Johnson, Warner, & Roberts, 2006; Graves, 2008). The participants in the interviews support the evidence related to the travel barriers of driving distance, location, and timing of the groups. Group locations closer to the participants homes may improve attendance. Offering groups at multiple times to accommodate different schedules may also be of benefit.

The majority of the participants felt they had their diabetes under control and did not feel a group was needed to support their diabetes self care. The feeling of control and lack of benefit were major barriers to attending a self help support group. Although the participants mentioned a variety of health complications such as a foot ulcer and frequent hypoglycemic episodes, they all felt they were doing well controlling the disease. This phenomenon was not discussed in the literature, although one study found that only 58%

of those who agreed to attend a diabetic education group actually showed up for the session (Choudhury et al., 2009). This may be due to some feeling the group would not benefit them. Nurses need to address disease complications at each office visit and at group education sessions to help patients understand self care to prevent future complications.

The final question, *What would make attending the groups easier for you*, had varied results. Again, lack of awareness of the groups played a role. The participants' ideas about what would make attending easier were varied. Participants felt attending would be easier if the group were closer to home, such as in the participants' housing complex, if less travel time was involved, or if there were more times and/or rotating times for the group availability. Other participants felt attending would be easier if new information would be presented, if their disease progressed to the need for insulin, or if more social interaction were provided at the group. Most of the participants admitted they did not know if they would go even with the current barriers removed. Several of the participants had no interest in attending a group at all under any circumstance.

The study participants felt attending groups to support their diabetes would be easier when first diagnosed. Again, getting newly diagnosed diabetic patients involved in self care and support groups early may increase the probability of them continuing the group long term. The nurse practitioner needs to encourage diabetic education group attendance at diagnosis when interest is peaked. If patients get in the routine of attending a group early on, attending may be easier in the long term.

The literature reviewed discussed how privacy and confidentiality concerns can be a barrier to health care access in the rural community (Brems et al., 2006; Graves,

2008). The closeness of the rural community can make it difficult to separate personal and professional relationships (Brems et al., 2006). Privacy and confidentiality were not specifically mentioned by the participants, nor was the subject directly addressed by the interviewer, though these could be barriers to attending self care diabetes and support groups.

Discussion of Themes

Theme 1: Gaining Knowledge and Information

The first theme discovered was how patients gain knowledge and information. Gaining knowledge for self management of diabetes is an important aspect of living with diabetes and has been shown to improve outcomes and quality of life for the diabetic. The participants in the study gained knowledge and information from a variety of sources. The participants found information on the Internet, through mailings such as diabetic magazines, brochures from the provider's office, through dietitian and nurse practitioner diabetic educators, through insurance company support lines, and from their primary care provider at office visits.

All but one of the study participants visited with a dietitian or nurse practitioner diabetic educator when first diagnosed with type 2 diabetes, although none of the participants visited regularly with either the dietitian or nurse practitioner diabetic educator. The visits did seem to motivate the participants and were felt to be beneficial. Regularly prescribed visits with a dietitian or nurse practitioner diabetic educator, perhaps annually, would seem appropriate to help motivate and educate. Annual well exams should trigger the referral to the dietitian or diabetic educator.

Primary care providers were the main source of information for the participants at the time of the interviews. Participants felt they needed more information and time from their primary care providers, although all of the participants agreed their primary care providers answered questions if they asked. Primary care providers, including the nurse practitioner, need to incorporate diabetic education at every visit. This could be a brief explanation of a complication of diabetes and how to prevent it or information on the benefits of exercise.

Participants voiced concern over a need for more information in general. Participants felt provider handouts to refer to later and share with family would be helpful. Several of the participants also used the Internet to learn about diabetes. With more than 93 million online healthcare information seekers, the Internet has become a useful tool for diabetes education and support, although most diabetic websites do not take advantage of the full potential the Internet offers (Bull et al., 2005). Online support groups were of interest to some of the study participants. The lack of interest from other participants may be related to the age of the participants. As the more techno savvy generations age, online support groups show much potential. Giving handouts at each visit as well as having a list of websites that the provider approves for the patient to refer to at home would be helpful.

The participants' knowledge of diabetes came into question in relation to the participants' feeling of disease control. Though the participants felt they had their diabetes under control, health issues were mentioned, such as a foot ulcer, frequent low blood sugar at night, and weight issues. This begs the question of the effectiveness of diabetes education in general. It is imperative to make sure people with diabetes, whether

newly diagnosed or long time diabetics, have a clear understanding of self management of the disease. As patients gain knowledge, they gain confidence and a sense of responsibility in caring for themselves (Knighton, 2009). Nurse practitioners and public health nurses are great educators and need to be especially diligent with the diabetic patient to ensure they have the tools to succeed at self care.

Theme 2: Lifestyle Changes

Lifestyle changes were the second theme discovered through analysis of the responses. The responses varied related to life style changes encountered since the diagnosis of type 2 diabetes. Some participants did not feel they had made any lifestyle changes, even though diet changes were mentioned by all of the participants. Diet is a huge part of self care for the diabetic and needs continued reinforcement and encouragement. This can be done at provider appointments as well as annual visits with a diabetic educator or dietitian. Annual well exams should include referral to such.

Participants mentioned the emotional changes that occur with a diagnosis of type 2 diabetes. Denial was a response expressed by several of the participants and may impact ones willingness to join a diabetes education support group. Support groups provide an outlet for discussing the emotional changes experienced with a diagnosis of type 2 diabetes. The opportunity to talk to others facing similar life changes may help to improve both quality of life and health outcomes by increased self awareness and understanding for those living with diabetes. Offering a variety of groups for different populations, such as a newly diagnosed group and gender specific groups, may help to better address the variety of lifestyle changes. Nurse practitioners and public health nurses make excellent group leaders with their ability to listen to and to educate patients.

Theme 3: Diabetes Control

The third theme addressed was diabetes control. The majority of the participants felt they had their diabetes well controlled at the current time. Interestingly, participants mentioned several diabetes complications, such as a foot ulcer, experiencing frequent low blood sugar at night, and being overweight. Even with these issues, the participants felt their disease was under control. This brings into question the participants' understanding of diabetes complications and the effectiveness of primary care providers' and nurse practitioner diabetic educators' explanations of complications.

This is another area for improvement that brings to light a possible ethical issue related to patient education. If a patient has complications, is it because the provider did not provide the knowledge needed for the patient to exercise self care or is learning self care a patient responsibility? Providers, including nurse practitioners, need to provide better education of diabetes complications and how to prevent complications. This can be accomplished through brief explanation of the complication, handouts, and question and answer sessions provided with each patient encounter. The nurse practitioner role includes that of excellent educator, which needs to be utilized in teaching self care.

Feeling their diabetes was controlled was a major reason the participants expressed for not attending a group or feeling a group would not be beneficial to them. The issue of group non attendance related to feeling in control of their diabetes was not found in the literature. Certainly, if one feels they have their diabetes under control, they are less apt to attend a diabetes self care or support group. This also relates to the participants feeling a group would not benefit them. Again, the nurse practitioner needs to encourage attendance early on in the disease process to promote health.

Theme 4: Stories Influence

The final theme presented was the influence of stories. Stories influenced the study participants' behavior and feelings towards diabetes. Connecting with others facing similar challenges and sharing stories has been reported as therapeutic for the diabetic patient (Hicks, 2010). The participants felt they gained information about caring for their diabetes through relationships and hearing stories. Support groups can provide an environment for storytelling. Nurses need to lead groups and encourage story telling.

Limitations

Several limitations of the research study exist. The study was conducted in a southern Minnesota rural community, which may not represent all rural communities. The study sample size of six rural resident participants is limiting and cannot represent all rural residents. The sample was primarily female, thus not representative of the male diabetic population. The study contained both insulin dependent and non insulin dependent diabetics, which may also limit the study results.

Qualitative research is subjective and, therefore, researcher bias may come into play. Also, the interviews were conducted by one researcher, which adds to the subjectivity and bias of the research. The researcher did not address all issues relevant to the study, such as privacy issues related to small town living and whether the participants' primary care provider was a medical doctor or a nurse practitioner.

Implications for Practice and Education

Assisting patients to care for themselves is imperative to treating type 2 diabetes. It is important for the nurse practitioner to get newly diagnosed diabetic patients involved in self care education and support groups early. The research showed that social support

through family, friends, and community involvement is needed to promote healthy outcomes for the diabetic patient. The participants felt they were more likely to attend a group when first diagnosed or when new information was presented.

Encouraging diabetic patients to attend groups presents challenges. Offering more diverse groups could improve attendance. Promoting interest in diabetes self care education groups could be done by offering beginner and advanced groups so as not to over or under whelm the participants. Offering more diverse topics to decrease repetition of information, providing time for social interaction to allow the participants to talk to others facing similar life challenges, and offering more options for learning such as online groups and gender specific groups may help promote attendance.

It is imperative for the rural nurse practitioner to address self education for diabetic patients. Self care behaviors are learned from a sociocultural environment and may be altered through the acquisition of knowledge. The participants in this study relied heavily on provider information and education. With resources lacking and patient lack of access to support in the rural area, providers need to be knowledgeable about diabetes self education. Nurse practitioners should assess for self care deficits with all patient contacts and intervene as needed to promote self care. Incorporating diabetic education at every visit, such as a brief explanation of a complication of diabetes and how to prevent it, is needed. Giving handouts at each visit as well as having a list of websites that the provider approves of for the patient to refer to at home would be helpful.

The nurse practitioner primary care provider should refer patients with diabetes annually for dietitian or nurse practitioner diabetic education services. Annual well exams should trigger the referral. Regular visits with a dietitian or nurse practitioner

diabetic educator at least annually would seem appropriate to help motivate and educate. When asked if visiting the dietitian, one participant explains, “She (dietitian) gave me all this information and I did follow it really good for a long time and then you slip.” When asked if visiting the dietitian again reignited motivation, “It does. It gets you going again.”

There is also an enormous implication for the education of the nurse practitioner. Why are patients not getting the information needed from providers? Nurse practitioners are valued for their ability to assess patient needs and intervene to promote health. The nurse practitioner role in educating the patient is imperative to making diabetic self education groups successful. More emphasis on the importance of this role is needed in nurse practitioner graduate education programs. More than 20% of nurse practitioners practice in the rural area (Presley, 2010). Making sure nurses have the tools and knowledge to promote self care is of great importance. Educating faculty members to incorporate self care into nurse practitioner graduate programs is important to the advancement of nursing.

Implications for Research

Diabetes self care in the rural area is in need of more research. The knowledge gained through further research would help to develop interventions to implement diabetes self care education and support groups in the rural area. Studies regarding how the rural diabetic resident learns about diabetes and self care are important.

More research related to gender, the presentation of information, and provider ethical issues in regard to diabetes self education in the rural area are needed. Several questions to consider in further research include: Do people living in the rural area feel

more supported in caring for their diabetes by the nurse practitioner care provider or the physician care provider? Do men and women living in the rural area have similar views on what a self care education group looks like or do they differ? Are primary care providers responsible for diabetic complications if the patient does not have the knowledge to provide self care or is it the patient's responsibility to acquire the knowledge about self care? Is the information presented at the groups or the manner in which the information is presented contributing to the lack of interest in self care education groups in the rural area?

Summary

Research has shown self management of diabetes important to decreasing costs, improving outcomes, and improving quality of life (CDC, 2011). Self management education and community support groups help effectively manage diabetes. This study suggested rural residents in a southern Minnesota community had limited access to diabetes education and support groups and several barriers were identified affecting attendance to groups. Barriers identified by participants in the research study included driving distance, time, unawareness of groups, personal preference/lack of interest, and not feeling a group would be of benefit.

The study echoes the research of others that intervening early after the diagnosis of diabetes is essential to promoting self management. This is when interest is peaked and patients are most open to learning. Orem believed self care behavior is learned from a sociocultural environment and may be altered through the acquisition of knowledge. The window of learning opportunity needs to be fully utilized to increase knowledge acquisition.

Nurse practitioners should assess for self care deficits and intervene to promote self care knowledge not only at the initial diagnosis of diabetes, but at all patient contacts. Nurse practitioners practicing in primary and acute care settings have ample opportunity to assess and intervene to promote self care for the diabetic patient. Incorporating diabetic education, such as handouts, websites, connecting with support groups, and brief explanations of complications at every visit promote self care. Public health nurses have the opportunity to intervene with home health visits and one on one teaching to promote self care. Connecting newly diagnosed type 2 diabetics with support groups early on may improve attendance and long term interest. Neighborhood groups lead by the public health nurse could improve attendance as well. Annual visits with the nurse practitioner diabetic educator and or dietitian may also be beneficial to help motivate and encourage diabetic patients with self care. These measures will help the diabetic patient to acquire knowledge and understanding of their disease and encourage self care behaviors.

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Appendix A

Literature Review Worksheet

<u>Article</u>	<u>Type of article</u>	<u>Size</u>	<u>Purpose</u>	<u>Themes</u>	<u>Results</u>	<u>How it relates</u>
Brems et al, 2006	survey	1555	determine barriers to rural healthcare access	confidentiality	the smaller rural area	rural areas report more barriers to healthcare services
				remoteness, language, travel time, weather	confidentiality	which may include support
				lack of specialty	specialist	groups as well
Bruce et al, 2003	observational	1264	attended program	empowerment	greater DM knowledge	DM ed programs increase knowledge
	study		is r/t DM knowledge	improved QOL	with attendance	
				attended DM ed self care	less attendance for older population	
					& non-English speaking	
					2/3rd attended DM ed program	
Chen et al, 2011	cross sectional	387	explore health status	DM support group	Rural res did not	Rural DM pts need support
	correlation design		& behaviors of rural DM	Improve QOL	control DM well-	groups to improve outcomes
				self care	suggests support group	
					foot care, exercise	

Choudhury et al, 2009	Ed program and survey	42	Is DM program useful	self mgmt	~half signed up	Dm program positive for
				improve outcome	for program	those who attended
				DM support group	actually attended	peer educators most important
				peer educators	reported positive	
				empowerment	ed program	
Clarke, 2009	correlation,	150	perceptions of new dx	self mgmt, social support	women slower to attend	Groups are helpful when attended
	longitudinal		DM and adaption	group, DM perceptions,	ed program, more women	but benefits decrease after,
			of self mgmt behaviors		w/ DM, ed group had	also found differences w/ gender
			w/ group DM education		more positive attitude	and should consider gender based
					short term while attending	groups as well
Fukunaga et al, 2011	focus group	74	barriers to DM mgmt,	social support	want more social support,	More social support is needed,
	interviews		perceptions, and services	time and money major	see time and money as	though time and money seen as
			needed to keep people	barriers to self mgmt	barriers to self mgmt,	barriers to self mgmt
			healthy and working	emotional effects	emotional and physical	
Funnel et al, 2009	Review of current		Review of current DSME	improved outcomes	ed and support improve	ed and ongoing support
	DSME standards		standards and update	and QOL	QOL and outcomes	important
				self mgmt		
Graves, 2008	Editorial	0	rural healthcare access	travel time, distance	health disparities and	need more research in rural

			need for research	privacy issues, language,	poor health outcomes	areas; lack of resources and fear of confidentiality
				education, financial		
				specialist, transportation		
Hicks, 2010	focus article	0	managing type2 DM,	self mgmt, social support	Group ed classes,	Group ed and support groups
			encouraging self mgmt	education to empower,	storytelling, goal setting	recommended
Jack, 2003	lit review	8	examined effects of DM	DM self mgmt ed, self	community partnership	community support important
			self mgmt ed in	esteem, self efficient,	programs in collaboration	to improving outcomes
			community setting	improved QOL, community	with clinical care best	
				based ed	at improving self mgmt	
					and outcomes	
Johnson, 2009	Editorial	0	To ed and provide	DM support group	Ed topics provided	groups provide ed, hope,
			support to new dx DM	DM ed	and group discuss	improve self care and QOL
				Improve QOL		
				self management		
Kent et al, 2010	system review		To determine healthy	self mgmt, support gr,	DM ed need to incorporate	awareness of barriers to healthy
			coping w/ DM	improved QOL and coping	healthy coping strategies	coping needed, support groups,
						self mgmt ed, improve QOL

Nagelkerk et al, 2006	focus group	24	To determine perceived	knowledge, time, lack of	Awareness of barriers	Need to be aware of barriers to
			barriers to DM self mgmt	social support barriers	helps problems solve and	improve self care and QOL
			in rural setting	to self mgmt	improve self mgmt	
Shaw et al, 2006	survey/interview	208	To examine self care	self care behaviors,	Support stronger in	Rural area need more support with
			support in rural and urban	social support, family	urban areas vs. rural, more	more connections to others
			settings	importance,	access and availability	
Strom et al, 2011	data analysis	52,817	Determine differences	self care, DM ed,	less ed available to rural	rural residents need more DM
			between self care and		res, but more foot exam	education, provider quality good,
			provider care in rural vs.		and BGM in rural area, no	
			urban areas		difference found in	
					provider quality care	

Appendix B

Themes Worksheet

	P	P	P	P	P	P
Access and knowledge of groups in area	No-not aware of any	Yes-friend is leader	Yes-Provider referral	No-not aware of any	Yes-provider referral	No-not aware of any
Experience with groups	No	Yes- “interesting”	Yes-“talked about stuff you got when you were diagnosed...wasn’t much interaction”	No	No	No
Barriers to attending	Unaware of area group, personal preference, do not feel it would benefit	Driving distance, time, personal preference	Driving, no new information, no social support, personal preference	Unaware of area group	Personal preference	Unaware of any groups-no interest in attending
What would make attending easier	If felt it was needed, such as if had to take insulin, may have when first dx	Maybe if closer and different times	More new information, more socialization	may attend if in her building complex	Schedule, not really interested	No interest

Feel they have diabetes under control/knowledge, Do not see need for group now, maybe at diagnosis time	Yes, "I think I have my DM pretty much under control", talks about weight	Yes, "It's fairly well controlled", talked about being overweight	Yes-feels knowledgeable, controlled, overweight	Yes, but has trouble with hypoglycemia at night, overweight	Yes-feels knowledgeable and controlled, mentions a foot ulcer he has and being overweight	Yes, "I'm doing ok. I can tell my body pretty good", talks about weight
Get information from internet, mailings, brochures	Yes, but feels there needs to be more available	No	Yes-DM magazine, internet	No	Yes, internet, DM magazine	Yes, internet, brochures
Interested in online support group	Yes	No	Yes	No	No	No
Get info from PCP	Yes-but would like more	Yes-some, asks questions sometimes	Yes-only if asks-would like more	Yes-only if asks	Yes	Yes
Stories influence behavior and feelings about DM	Yes-friends dad had amputation due to DM-"I take really, really good care of my feet"	Yes-friend is "quite severe diabetic"	Yes-heard wiping finger with alcohol can "up your numbers"	Yes-sister DM and nurse, told her about	Yes-heard "you can eat all the meat you want"	Yes-friend with DM
Lifestyle changes	Eating habits/diet, exercise, med	Diet, exercise, med changes, appointments	Diet, goes to PCP for other things- no increase w/ DM,	Diet, goes to PCP for other things-no	Diet, appointments q1-2 mo, denial-	Diet, no increase in appointments

	changes, appointments Q3mo	Q6mo	“internal” changes; “one day you’re ok living with it and the next day it’s like why me, you know?” Grieving, denial...”believe it”	increase w/ DM	“no fear of it- healthy too long to worry about it.”	

Appendix C

Consent Form

Type 2 Diabetes Research Study

You are invited to take part in research about diabetes self help and support groups. The research is being conducted by Professor Dr. Hans-Peter deRuiter and Liz Waters, graduate nursing student researcher. We ask that you read this form before agreeing to be in the research.

Purpose

The purpose of the research is to find out more information about the use of diabetes self help and support groups in rural southern Minnesota. We are interested in learning more about how people can use the groups better. We also want to learn more about the things that might get in the way of people using to the groups.

Procedures

If you agree to be in this research and sign this consent form, we ask that you participate in an interview. The interview will be digitally recorded and take 30 minutes or less of your time.

Risks and Benefits

You will be asked questions about your age, gender, distance you live from Blue Earth, MN, when you were diagnosed with diabetes, and about living with diabetes. You may refuse to answer any questions or stop the interview at any time. There are no direct benefits of the study other than being able to talk about your diabetes. The risk level of this research is considered to be less than minimal, though there is a risk of uncomfortable feelings coming up while talking about your diabetes. You may stop the interview at any time you are uncomfortable and do not have to finish it.

Confidentiality

Anything you tell us will remain confidential. The information will not be shared with anyone else, including family members or health care providers. The records of this study will be kept private. We will not include any information that will make it possible to identify you in the study such as your name, address, or phone number. The interviews and recordings will be kept in a locked file and only the researchers for this study will have access to the records. Consent forms will be locked at the MSU campus office by Dr. deRuiter. The recordings, interviews, and consent forms will be destroyed after 5 years.

Voluntary nature of study

Your decision whether or not to participate in this research will not affect your current or future relations with the Minnesota State University, Mankato, or the staff helping with this study. Even if you sign the consent form, you are free to stop the interview at any time. If you feel uncomfortable for any reason, you do not have to continue the interview.

Contact

The researchers conducting this study are Dr. Hans-Peter deRuiter and Liz Waters, graduate nursing student. You may contact the Dr. deRuiter at (651)399-1932 or Liz Waters at (507)401-1939. If you have any questions or concerns regarding the treatment of human subjects, contact: MSU IRB Administrator Minnesota State University, Mankato, Institutional Review Board, 115 Alumni Foundation, (507) 389-2321.

I have read the above information and understand that this interview is voluntary and I may stop at any time. I consent to digital recording of the interview. I consent to participate in the study.

Signature of participant

Date

Signature of researcher

Date

Copy to participant

MSU IRB LOG # 287241-2

Date of MSU IRB approval: 11/30/2011