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Barriers to Self-Management in Depressed Women with Type 2 Diabetes

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Abstract

Purpose: Describe the impact of family functioning on the self-management of type 2 diabetes (T2DM) and depression in a subsample of women who completed a randomized clinical trial (RCT) using vitamin D₃ (5,000 or 50,000 IUs weekly) for depression treatment.

Background: Women are at higher risk for increased severity of T2DM when experiencing depression.

Methods: Narrative inquiry was used. A semi-structured interview was conducted to understand helpful strategies and barriers in managing T2DM and depression. In addition, women were asked their meaning of family quality of life (FQOL).

Results: Twenty-one women participated after completion of the six-month final visit in the RCT. The mean age was 55.2 years. Participants were 24% Hispanic, 48% African-American, and 52% Caucasian. The major themes generated related to family issues that impacted their self-management, yet participants did not want to “bring fault” to their families. Three themes emerged: (a) experience of family hardships—“it’s been hard for me”, (b) lack of disclosure to family about being depressed—“no point in talking to them”, and (c) the need for connectedness with family and others—“the way it used to be ... close as a family.”

Conclusion: Family-centered approaches could address barriers to self-management. A ‘family lens’ for practice and research may improve health outcomes.

Keywords

Women; Diabetes; Depression; Family Quality of Life; Self-Management

Background and Purpose

Diabetes, a global health concern, impacts 422 million adults worldwide (World Health Organization [WHO], 2016) and is the seventh leading cause of death in the U.S. (Centers for Disease Control and Prevention [CDC], 2014). Comorbidity with cardiovascular disease leads to a death rate 1.7 times higher than for those without diabetes in the U.S. (CDC, 2014). Diabetes is a complex chronic disease associated with serious life-threatening conditions including heart disease, stroke, blindness, kidney failure, and lower-limb amputation (WHO, 2016).

Diabetes care involves disease self-management such as medication management, monitoring of glucose and blood pressure, and an ability to solve problems (American Diabetes Association, 2017, S7). Poor disease management leads to comorbidities including depression and cardiovascular disease for women with type 2 diabetes (T2DM) (de Groot, Anderson, Freedland, Clouse, & Lustman, 2001). There is significant research to indicate that depression can negatively impact diabetes self-management (Katon et al., 2009; McCollum, Hansen, Lu, & Sullivan, 2005; Gonzalez et al., 2007). Comorbidity of diabetes and depression significantly increases the risk of mortality, a 1.5 times higher risk than when depression is not present (Park, Katon, & Wolf, 2013). Association between diabetes and depression is bi-directional with inflammation and metabolic biomarkers predicting both and contemporary evidence suggesting that inflammation predates the onset of depression (Kan et al., 2013; Penckofer, Doyle, Byrn, & Lustman, 2014).

Women who have diabetes and depression experience additional challenges in everyday life which may lead to challenges with self-management. Women have multiple roles and responsibilities as mothers, caregivers, workers, and volunteers (Langer et al., 2015). “The demands on women challenge their time and energy and, in turn, directly and indirectly impact their health and well-being” (Meleis, Caglia, & Langer, 2016, p. 329). They are both health care providers (home and community) and recipients of health care (Meleis et al., 2016). Thus, the ability for women to care for their own health is challenging given multiple responsibilities and environments that do not support their roles. Further, environmental factors such as limited access to healthcare and availability of diabetes specific disease management programs create challenges to maintain their health (Robinson, Luthra, & Vallis, 2013). A focus group of middle aged women (n = 41, mean age 55 years, 42% African American) living in the Midwestern region of U.S. with T2DM explored the daily issues women face and identified “bearing multiple responsibilities for self and others” as a major theme that negatively affected their moods (depression, anxiety, and anger) and contributed to problems with their self-management (Penckofer et al., 2007). In another focus group study (n = 38) exploring self-management in African American adults with T2DM, regardless of gender, family support from female family members (wife or daughter)

facilitated self-management, specifically medication management (direct assistance and cues to take their medications) (Chlebowy, Hood, LaJoie, 2010).

Family history is an independent risk factor for the development of T2DM, which is prevalent in the U.S. population (Valdez, Yoon, Liu, & Khoury, 2007). Both genetic and shared environmental factors are known to play a role in T2DM incidence and vascular complications (Murea, Ma, & Freedman, 2012), not heritability alone. Recent evidence indicates that T2DM in youth is more aggressive and progresses faster than that of adults (Linder, Fradkin, & Rodgers, 2013). Therefore the next generation of emerging adults need to be identified early and behavioral/environmental risk factors mitigated especially when familial risk is present. Given these facts, the study of diabetes and the family is important. Family support and involvement may strengthen diabetes self-management efforts of the affected person while simultaneously offering an opportunity to detect and prevent or delay the onset of this chronic condition in other family members. Those at moderate or high risk for T2DM may be targets for behavioral lifestyle interventions to promote healthy weight and physical activity.

Family support, a component of family functioning, may help or hinder self-management (Mayberry & Osborn, 2014). Family support is associated with positive self-management adherence as shown in multiple studies (Dingley & Roux, 2014; Penckofer et al., 2007). Conversely, support that includes patterns of negative behaviors such as nagging, criticism, arguments and avoidance can hinder adherence (Rosland, Heisler, Choi, Silveira, & Piette, 2010). Veinot, Kim, & Meadowbrooke (2011) examined family support in the context of several conditions (diabetes and HIV/AIDS) and found the more information family members obtained and used collaboratively, the less perceived support they experienced. The majority of participants with diabetes reported “irritating” experiences when family members used diabetes information to question their food choices. In persons experiencing moderate to severe depression, nonadherence to treatment is found in the presence of such obstructive family behaviors (Mayberry, Egede, Wagner, & Osborn, 2015).

Describing family support from the individual’s perspective can help to identify those behaviors that assist with or hinder their self-management. Evidence is limited on the use of the “family lens” in current treatments for diabetes and depression. Although research usually reports individual self-management behaviors, these occur within the family context, which needs consideration. In a joint position statement by the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics, family involvement includes: (a) providing support and education to patient’s family and caregiver, (b) assessing patient and family needs for behavioral and psychosocial aspects of informed decision making, and (c) including family members and support systems in education and ongoing support processes (Powers et al., 2017). The Canadian Diabetes Association Clinical Practice Guidelines Expert Committee recommends family therapy should be a component of psychosocial interventions in diabetes care plans (Robinson et al., 2013). In a review of family based interventions for diabetes, 7 of 15 of the included studies had substantial family involvement but only two found improvement in hemoglobin A1C (HbA1c) (Baig, Benitez, Quinn, & Burnet, 2015). Additionally, they reported inconsistent definitions of family level participation and a lack of family level outcome measures.

Moreover, in a review of the interrelation between adults with diabetes, their family, and diabetes self-management evidence indicated that family members influence self-management of diabetes in adults, specifically partner/spouse role in dietary management—both positive and negative (Rintala, Jaatinen, Paavilainen, & Astedt-Kurki, 2013). This influence varies by family structure and culture. More information about how family involvement optimizes diabetes outcomes is needed.

Individuals with their families may identify self-management problems and help to find solutions to address them. Current practice guidelines state “using a nonjudgmental approach that normalizes periodic lapses in self-management may help minimize patients’ resistance to reporting problems with self-management” (American Diabetes Association, 2017, p S25). If family members are better equipped to provide helpful support, then individuals may be less likely to cope with the overwhelming nature of self-management by taking a “diabetic break” (Penckofer et al., 2007) from self-care and ultimately, improve diabetes and depression health outcomes. More information is needed about the self-management process in women with T2DM and co-morbid conditions in relation to their family functioning. Understanding how to foster family support to help improve the health status and quality of life of individuals and families may decrease obstructive family behaviors, improve adherence, and lessen the number and severity of complications that stem from poor self-care behaviors.

Family functioning, how families operate or behave, is an important consideration in the development and management of diabetes. Family functioning is characterized by family environments that are cohesive, satisfying, and supportive. Only a few recent studies explore relationships between family functioning, depression, quality of life, and diabetes outcomes. One study of 261 participants with T2DM, both with and without depression, used the Family Assessment Device to explore family functioning, which assesses six dimensions. The researchers found that there was an association between family functioning and depression. In the group with depression, family functioning was worse, specifically in the dimensions of communication, roles, affective involvement, and behavior control (He, Zhang, Zhao, & Wang, 2014). In another study using the same family functioning measure, in persons with and without T2DM, it was reported that those with diabetes had a significant impairment in the affective involvement dimension of family functioning compared to those who did not have diabetes (Wang et al., 2015). Further evidence suggests family cohesion (both extremes, enmeshed or disengaged) has been associated with higher glucose levels in persons with T2DM (n = 133) living in Japan (Takenaka et al. 2013). In a U.S. sample (n = 192) with T2DM, it was reported that when supportive behaviors were low, obstructive behaviors were significantly related with worse HbA1c using a diabetes-specific measure of family functioning (Mayberry & Osborn, 2014). It was also noted that family support moderated the effect of obstructive behaviors on HbA1C, while no relationship was present between obstructive behaviors and HbA1c when family environment was highly supportive. Research that explores family functioning and women’s self-management is needed to improve both individual and family health outcomes. Currently, knowledge of how family functioning affects self-management in women with diabetes and co-morbid depression needs further study.

Individual and family quality of life (FQOL) perspectives can enhance our understanding of what is important while managing chronic conditions that impact both physical and mental health. Family quality of life, an emerging construct, “is the overall appraisal of the domains of life important to the family” (Ridosh, Sawin, Schiffman, & Klein-Tasman, 2016, p. 288). FQOL has primarily been explored in families with children with chronic conditions, not in an adult family member with a condition such as diabetes or depression. Increased knowledge will be useful to develop family-centered self-management interventions for women living with diabetes which will enhance individual quality of life and FQOL. Therefore, the purpose of this study is to describe the impact of family functioning on the self-management of T2DM in women who have significant depressive symptomology.

Method and Procedures

Study Design.

A qualitative study using narrative inquiry was used (Chase, 2008). This method was selected as it is intended to focus on the relationship between individuals’ life stories and their family life. Further, narrative inquiry guides data synthesis to represent the participants’ stories as a whole. The need for storytelling arises from the desire for the participant to have their stories heard (Chase, 2008).

Face-to-face interviews were conducted using a semi-structured interview guide. Women were asked about strategies and barriers in managing their conditions, and what role their family plays in this process. Women were also asked to share perspectives of their individual and family quality of life.

Participant Recruitment.

The primary study, *Sunshine 2 Study for Women with Diabetes*, is a controlled trial of women with T2DM and co-morbid depression randomized to vitamin D₃ supplementation groups (5,000 vs 50,000 IUs weekly) for six months. The estimated completion of the primary study is December, 2017. Participants complete four study visits: baseline 1 visit for assessment of qualification, baseline 2 visit for script pick up, three month visit for assessment and refill, and six month visit for final evaluation.

Once this qualitative study was approved by the University Institutional Review Board, women were recruited at the final visit of the primary study where the research nurse asked if they would be willing to discuss how their family affects their ability to care for their diabetes and depression. If women expressed interest, they were given an informational flyer and informed that they would be contacted for participation. The principal investigator for the qualitative study called these individuals, explained the study, and scheduled an interview date which was typically two weeks after their last study visit. All participants who completed the six month visit during the year were informed about potential participation for this sub-study. A few participants declined due to the time commitment. When saturation of the data was reached and a variety of family structures were observed, recruitment was stopped. Participants included single women, those raising a family with a significant other, single parents raising children independently, women raising

grandchildren, and women with same-sex partners. The variation in family structure provided breadth and depth to the experiences of women and family functioning.

Participant Interviews.

Informed consent was obtained and a face-to-face interview was conducted in a private room at the primary research study site. Before the interview was initiated each participant completed a researcher-developed demographic tool that included items not collected in the larger study—such as family size; gender, age, education level of family members; and the type of household residence. The semi-structured interview guide was developed in collaboration with the research team to guide engagement of the researcher and participant. A sample of the interview questions is provided in Table 1.

The participants were subsequently asked to think back when they began managing their condition and discuss what was most helpful, how their family supported them, their greatest barriers, and what they would have liked their family to do differently. Additional questions were asked about family support resources. Participants were asked to describe what quality of life means to them and their family as an approach to elicit narrative of the relationship between their story and the quality of their lives. The interviews were audiotaped and notes were documented by the investigator immediately after the interview. The notes included a description of the participant's personal appearance, nonverbal cues, voice tone, and expression of emotions such as smiling, laughing, sadness, worry, and crying. The investigator used the notes to identify important components of the narrative that produced emotional responses. No one asked to stop the interview due to their emotional state. The participants were compensated financially (\$40). At the conclusion of the interview, they were provided with a mental health resource sheet developed by the study team.

The investigator who conducted the interviews had no previous contact with participants at any of the visits for the primary study. The investigator did have pre-existing knowledge of participant diagnoses of diabetes and depression since those were eligibility criteria of the primary study. Generally, interviews lasted an average of 90 minutes with a range of 45 minutes to three hours. The interviews were completed over a period of one year. The interviews were conducted until data saturation was established and no new data emerged.

Data Analysis.

The audiotaped interview data were transcribed by a trained transcriptionist from a service for qualitative research. The transcription was then verified by the investigator who conducted all the interviews. Once the data had been verified, a narrative analysis was conducted by two authors. Using the research method described by Chase (2008), narrative inquiry requires that the researcher become an interpreter of the participant's voice, focusing on the relationship between the individual's life stories and the quality of their lives. This method of analysis introduces "retrospective meaning making", using past experiences to understand over time how actions inform the reality of the experience as a whole (Chase, 2008). The participants were asked to share their stories as they reflected on their experiences of caring for their conditions. The interpretive process was enhanced by

identifying emotions, thoughts, and interpretations as expressed within each narrative (Chase, 2008).

Standards of rigor to ensure trustworthiness in qualitative research as delineated by Lincoln and Guba (1985) included credibility, transferability, dependability, and confirmability. Credibility was established as a result of the in-depth interview and notes taken by the investigator used to accompany interview data. The notes provided context for each participant's emotional state, appearance, and quality of the narrator-researcher interaction. Verbatim transcription of the audio recording enabled multiple investigators to analyze and interpret narratives. Confirmability and dependability were achieved by discussion between two qualitative researchers from the team who repeatedly read the transcripts and completed the analysis independently. The two researchers subsequently compared findings and conducted a further joint analysis. Two clinical experts from the team who were engaged in assessment of participants at multiple visits over the preceding six months during the primary study reviewed the analysis for transferability and dependability of the findings. Actual quotes from the participants provided a "voice" through use of storytelling in the interpretive process. The narratives include the perspectives of women in multiple family structures (single, married, widowed, lesbian, with and without children).

The narrative analysis included three steps to define the elements and refine data: detection of substantive content, categorization with descriptive data, and classification of categories to a higher level of abstraction (Spencer, Ritchie, & O'Connor, 2003). Each step was completed independently and then agreed upon by two investigators. Substantive content throughout the narratives were first identified. Then components of the narratives (descriptive data) were clustered together and re-examined for use of "I" and emotional responses in narrative to categorize data. Classification of the categories involved the interpretive process of reframing the information. Themes derived from the interpretive process are used to tell the story which is descriptive of the whole. Participant quotes and contextual data were presented for each theme.

Results

Twenty-one women participated in the interview after they completed the six-month final visit of the larger RCT. Table 2 describes demographic characteristics of the participants. The mean age was 55.2 years (SD 9.4). About half of the participants were African American (48%) or Caucasian (52%). Twenty-four percent of the participants were of Hispanic ethnicity. A third of the participants were married (38%) or never married (33%), 19% were divorced, and 10% were widowed. At the baseline visit of the RCT, 33.3% earned less than \$20,000, 14.3% earned between \$20,000–50,000, and 52.4% earned greater than \$50,000. The mean HbA1C was 7.6% (SD 1.47), which was slightly higher than optimal control (< 7%) (American Diabetes Association, 2017, S50). All participants enrolled in the primary study had a diagnosis of depression determined by a structured mental health interview by a research nurse. Additionally, the mean depressive score on the Center for Epidemiologic Studies Depression (CESD) scale was 28.2 (SD 7.96), well above the reported cut-off for clinically relevant depressive symptoms (greater than 16) (Radloff, 1977).

The majority of the participants' narratives focused on barriers to self-management. Themes illustrating barriers to self-management were the following: (a) experience of family hardships, (b) lack of disclosure about being depressed, and (c) a stronger need for connectedness with family and others. In the following sections, we present the narratives that give voice to the participants.

Theme 1: Family Hardships – “. . . *it's been hard for me.*”

The experience of family hardships was pervasive and at the root of the stories told by participants. Family hardships interfered with their ability to care for themselves. Many of these participants had adult-dependent children with chronic conditions (e.g., intellectual disabilities, neuro-muscular disorders, diabetes, and depression). Participants shared their family's experiences of multiple adversities related to substance abuse and violence. Several participants faced dealing with imprisonment of a family member. The family's impact on self-management was illuminated as participants spoke of their inability to care for themselves due to their family circumstances. A participant who cared for her adult-dependent son with autism, diabetes, and depression shared her struggle to care for herself while managing his care. When asked what her family could do differently she said,

I think if I was able to get him back on key, I would get back on key because it's trickle-down. It affects me. Even though I try to be one of the happiest persons I know. It's hard to do that now. It's been hard for me. . . . Me unable to care for myself like I should. Me to get the right exercise, the right sleep, the right—my medication like I supposed to taking it and doing what I'm supposed to do as far as my health-wise.

The following participant specifically identified her barrier as her family circumstance of being a caregiver living with a partner who also experienced diabetes and depression: “*I think just sort of managing all of that has been the greatest barrier to really taking care of myself.*”

The accumulation of adverse life events in participants' stories was heard repeatedly. One participant, also a cancer survivor with difficult family circumstances, framed it in terms of relinquishing control to a spiritual power.

It's always something what I'm thinking about or going through. The stress. My kids. My grandkids. The one in jail. You know what I have to say to myself? I'm not in control. I give it to you, Lord. I can't think about this 24/7. I just can't.

Theme 2: Lack of disclosure about being depressed—” . . . *do not talk about being depressed.*”

Most participants said that their families knew about their diabetes but not their depression. This theme emerged after a few interviews and became a point of clarification in subsequent interviews. Participants described symptoms of depression which manifested in, for example, the inability to leave the home and not being able to get out of bed. This loss of function in their daily lives caused them to become more isolated. The women spoke about being alone in their journey to care for themselves. A participant shared her perception of what others think about depression and why it is not worth talking about it: *I don't wanna be*

depressed. People don't understand. There's no point in talking to them. People that don't believe in a mental illness, it's almost like a racist thing." This participant shared her perception of black women who are ashamed of having a "disease." *"It's a cultural thing. We do not talk about being depressed. Just like me saying I went to talk to a therapist or something. We are ashamed of that. We really are."*

This participant was still experiencing grief from the loss of her husband 20 years prior and now dealing with her life circumstance of supporting an adult dependent son with multiple sclerosis and depression. When asked about her family support for depression, she said: *"I don't think they know too much about it. The oldest one might, the one that stays with me, but the other two, I don't think so, no."*

Theme 3: A need for connectedness with family and others—" . . . the way it used to be . . . close as a family."

FQOL included connectedness with those who participants identified as their family, which often were their own siblings. The need for connectedness emerged when women described their perception of the meaning of FQOL. Participants lamented that their families and friends were disconnected and did not spend time together. While some participants attempted to maintain relationships with others at a distance over the phone or through visits, those living in proximity to each other such as living in the same building or neighborhood also had difficulties. Many times women spoke of the history of family conflict creating the division. Participants expressed a need for connectedness between family members to better support each other. Many participants experienced conflicts between mother and a son or daughter, between partners, and among siblings. They voiced a desire for stronger family unity. One participant put it this way:

To be united, to stick to each other, to help each other and to support each other. Unity and not being in conflict and problems. I hate problems. Yeah, I don't like conflict especially in family. There's no place for it.

Another participant described the need in more detail:

Family bonding, being able to get together, being comfortable around each other. They all used to be good friends and get along and go to things with each other's kids . . . I would like it to be back the way it used to be. I mean we had—we've been close as a family.

Participants shared some activities and lifestyle strategies that helped them to manage their depression. Many women expressed having faith in God or a spiritual connection whether through prayer or organized religious activities that helped them. One participant saw *"... going to church as helping her spiritual soul and exercising her physical soul"*. She also found her participation in a monthly support group had helped her meet others, share experiences, and identify resources. Participants also mentioned getting out of the house, going to the gym, walking with a pet, and visiting family as helpful strategies.

Discussion

This study contributes to a greater understanding of the impact of family functioning on self-management, barriers to self-management, and the meaning of FQOL for women with co-morbid diabetes and depression. The participants shared many stories of family hardships. A lack of family cohesion and limited family support resources interfaced with the longstanding multiple adversities they faced. The lack of support in the family system hindered the ability for the women to care for themselves. These women described circumstances of being consumed by their family difficulties which resulted in distractions from adherence to self-management for both diabetes and depression.

The barriers to self-management emerged at the root of their stories. When asked what was most helpful to them in managing their conditions, they briefly mentioned understanding the disease, glucose monitoring, following proper diet and exercising when they could do it, as well as fear of complications. They listed these in a perfunctory manner. The responses that were most detailed and evoked emotion addressed barriers, limited family support, and what they wished families could do differently. While some participants clearly made the connection between their family circumstances as barriers to self-management, many did not. There was a lack of acknowledgement of the effect of their families on their adherence to a medical regimen. Most participants described their hardship and limitations of family support, but they did not seem to want to “bring fault” to their families. Few participants expressed an environment of family cohesion or successful self-management. This is an important consideration for nurses and interprofessional health providers as they work to help women address and navigate barriers to self-management.

The experiences of family hardships were as salient as they were pervasive. Multiple adverse events in the life stories of these participants predisposed them to a family environment in which obstructive support is more prevalent. Obstructive support specific to diabetes care can take the form of arguing or nagging about adherence or eating or bringing food into the house that is not healthy for a person with diabetes (Mayberry & Osborn, 2012). This places participants at risk for nonadherence as confirmed by Mayberry et al. (2015) in a study of adults with T2DM. Obstructive family behaviors have been associated with more stressors and more depressive symptoms (Mayberry et al., 2015). Both stressors and depressive symptoms have been associated with nonadherence and the association between them is stronger as obstructive behaviors increase (Mayberry et al., 2015).

As participants shared their meaning of FQOL they identified domains of life that were important to them which included unity, help and support of each other, family bonding, spending time together, and getting along. This meaning of FQOL was interpreted as a need for connectedness or stronger unity of the family. In our qualitative study, the participants’ recognition of a need for connectedness with family shows some insight into the importance which supportive family resources may have on their FQOL. Acknowledgement about the influence of their family on health management is lacking. Previous studies and these findings highlight the need for practice strategies and research interventions that cultivate family support and resources to be emphasized in interprofessional care models for women with diabetes.

The lack of disclosure about being depressed was an unexpected finding. These participants were clinically depressed, many requiring medication and intensive treatment regimens; yet this aspect of their care was hidden from family members and friends. The lack of disclosure facilitated participants' denial of depression, which several stated was their greatest barrier to self-management of their depression. The participants often isolated themselves when experiencing symptoms of depression. This isolation hindered the participants' ability to draw on individual or existing family support resources. The isolation meant the participants had to rely solely on themselves to deal with the depressive symptoms. When evaluating T2DM and family functioning, it was found that participants with depression had worse family functioning (He et al., 2014). As these women already experienced disjointed family functioning, their lack of disclosure and minimal social interaction was a deeper barrier to their self-management of diabetes and FQOL.

Themes identified in this study suggest that clinicians need to initiate early assessment and identification of women potentially at-risk for barriers to self-management. With early recognition, referrals and implementation of tailored interventions can enhance the potential for successful management of diabetes and depression. Brief, reliable tools that are applicable in quick-paced practice environments are needed that may tap into the individual or family aspects that impact self-management. The *Inner Strength Questionnaire* (Dingley & Roux, 2014; Lewis & Roux, 2011) is one example of a measure for resilience in women living with chronic conditions or experiencing adverse life events. The tool has a reliability of .91 and can be completed in practice in about ten minutes (Lewis & Roux, 2011). To assess comfort level of emotional disclosure related to illness and the partner's willingness to talk, the *Couples' Illness Communication Scale* (Arden-Close, Moss-Morris, Dennison, Bayne, & Gidron, 2010) may be useful. It is a short measure (4-items) with reliability of .84. Measures of traumatic or chronic life stress and patterns of family communication regarding facilitators of disclosure of conditions could inform practice. Opportunities exist for quantitative researchers to develop and test practical screening tools for clinicians to identify at-risk women. Further collaboration with researchers and clinicians is needed to identify women with diabetes who are at risk for depression.

Research recommendations for treatment of diabetes and depression from a report from the NIDDK International Conference on Diabetes and Depression include "empirically validated treatment approaches that make use of support systems (e.g., ecological approach)" (Holt, de Groot, Lucki, Hunter, Sartorius, & Golden, 2014, p. 2073). This report highlights the need for a life course perspective to examine impact of life stress on depression and diabetes (Holt, et al., 2014). Our research suggests family relationships are an important treatment target to modify associations between diabetes and depression. Therefore to address barriers to self-management and establish parameters for future research, a shift in approach from the individual to the family is warranted. Including this perspective will allow women to better care for themselves and may help to reduce the number and severity of complications of diabetes.

Participants expressed a spiritual connection or that participation in their faith community was helpful. In a grounded theory study of spirituality in African Americans with diabetes, 'self-management through a relationship with God' was a core construct (Polzer & Miles,

2007). Spirituality was a source of strength and support identified by the participants with one stating she would “relinquish” control to a higher power. This disposition to surrender to God as healer may be incorporated in self-management interventions to ensure self-management behaviors continue while acknowledging values and beliefs of participants.

Future research should also focus on family-specific interventions for women such as developing women’s ability to access and maintain family support, enhance connectedness, and improve health outcomes. Interviews with women who are less depressed and have achieved good diabetes control may inform development of interventions using positive strategies for self-management. Additionally, educating women to identify a member of their network who has the capacity to offer family support and training a family member or friend on how to provide support are also important. Future tailored intervention studies should focus on promoting connectedness with family and spirituality to improve self-management for women living with diabetes and depression.

One study limitation was that the interview guide as well as participants’ knowledge of this being a study about how their family impacts their self-management may have influenced their responses. Other themes may have emerged if these interviews were conducted using a different method such as focus groups, although women may not have been comfortable sharing family hardships or their lack of disclosure about depression. In addition, participants were asked about their meaning of FQOL, which prompted them to think about their appraisal of life domains important to them. Another limitation is that these data are collected from a subsample of women from a larger RCT who self-selected their participation in this sub-study. These women may have agreed to participate due to their family circumstances and desire to share their story which may limit generalizability to women who did not participate in the RCT. Also, the participants in this sub-study reported a higher income than the larger study. Thus, study of this phenomena in women with low income is warranted to ensure representation in future research. Lastly, although there was diversity in the participants by race and family structure, it was limited by geographic location in proximity to a large academic medical center in a Midwestern city in the U.S. Specifically, these findings may not be universal to women in rural or other communities.

Conclusion

Implications of this research include a need for a ‘family lens’ when caring for women with diabetes and depression. Women shared experiences of family hardship that were at the root of barriers to self-management for their conditions. Providers can help women identify family members who have the capacity to offer support and modify lifestyle strategies to effectively navigate barriers to self-management. These findings gave voice to the women who were living with diabetes and depression in the midst of family difficulties. Further research on family-centered interventions for women with chronic conditions are needed to address the needs of women in the context of the environments in which they live to optimize their health and that of their family.

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Table 1**Selected Semi-Structured Interview Questions**

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1. As you think back when you began managing your own care, what was most helpful for you to manage your diabetes?
 2. What has contributed to you caring for yourself?
 3. How does your family support you in caring for your condition?
 4. What has been your greatest barrier to managing your condition?
 5. What would you have liked your family to do differently?
 6. What do you think quality of life means for you?
 7. What does quality of life mean for your family? (what goes into making a good quality of life for you and your family)?
 8. How has your family helped you to overcome obstacles in managing your condition?
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Note: Sample questions 1-5 were asked about diabetes and depression separately.

Table 2*Characteristics of the Participants (n = 21)*

Characteristic	Percent (count)
Participant age (mean/SD)	55.3 years (9.44)
Marital status	
Married	38.1 % (8)
Never married	33.3 % (7)
Divorced/separated	19.0 % (4)
Widowed	9.5 % (2)
Race	
African American	47.6 % (10)
Caucasian	52.4 % (11)
Ethnicity (Hispanic)	23.8% (5)
Health status (baseline)	
HbA1c (mean/SD)	7.61 (1.47)
Depression score (CESD) (mean/SD)	28.24 (7.97)