



Perceptions of psychosocial and interpersonal factors affecting self-management behaviors among African Americans with diabetes



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ABSTRACT

Background: African Americans are more likely to be diagnosed with diabetes and have diabetes complications as compared to non-Hispanic Whites, but have lesser medication adherence and poorer self-management behaviors. Interventions to improve self-management behaviors may not be successful if psychosocial and interpersonal factors of African Americans are not addressed.

Objective: The study objective was to qualitatively explore perceptions of African Americans with type 2 diabetes (T2DM) regarding self-management behaviors and understand the effect of psychosocial and interpersonal factors on behavior change.

Methods: Adults with T2DM who self-identified as African American/Black were selected from a cohort participating in a mixed-methods study in a midwestern state. The data collection and analysis were guided by the Integrated Theory of Behavior Change. Ten semi-structured, 60-min, theory-based interviews were conducted and content analysis was utilized to identify themes. Themes were then categorized based on theoretical domains.

Results: The sample was mostly female, an average of 52 years old, and had a high school education or more. Four themes were identified. Two themes were categorized as psychosocial factors: 1) attitude and beliefs regarding diabetes and 2) sociocultural influences on self-management, while two were interpersonal factors: 3) role of family and social support and 4) relationships with healthcare professionals. Themes connected back to the theory and directly affected self-management behaviors.

Conclusion: Future research should focus on incorporating these themes when designing interventions that improve T2DM self-management behaviors and outcomes in African Americans. Health care professionals should emphasize individualized and culturally appropriate T2DM education and counseling.

1. Introduction

In the United States, 13% of African American adults currently have type 2 diabetes (T2DM), and they are twice as likely to be diagnosed with T2DM and die from diabetes compared to non-Hispanic white adults.^{1,2} African Americans are also at higher risk of developing complications from diabetes, such as end stage renal disease,^{2,3} heart failure,³ major amputations,^{2,4,5} and diabetic retinopathy.⁶ Diabetes self-management behaviors, such as home monitoring of blood glucose levels, taking medications as prescribed, and following diet and physical activity recommendations, contribute to better control of blood glucose levels and assist providers in making medication changes, if needed.⁷ Regular monitoring of diabetes control and adequate self-management behaviors can reduce the burden of diabetes complications and functional disability status.⁸ However, compared to non-Hispanic whites, African American patients are

less likely to have the recommended number of HbA1c tests per year, get a retinal eye exam and receive a foot exam^{2,9} and are less likely to have adequate glycemic control.¹⁰ Despite these differences in self-management behaviors, research is limited on how to best approach care for African American patients with diabetes to improve self-management behaviors and clinical outcomes.

A common approach to improve diabetes self-management behaviors is enrolling patients in classes that cover topics such as nutrition, medication adherence, and home blood glucose monitoring. A systematic review and meta-analysis of African American patients' outcomes in diabetes self-management education courses showed that quality of life was significantly improved, but HbA1c (a measure of glycemic control) did not change.¹¹ Interestingly, 12 of the 14 interventions were deemed by the authors to be culturally adapted for African American patients, primarily by incorporating dietary recommendations specific to Black culture and having African

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American educators or community health workers deliver the interventions. This demonstrates that, despite efforts to tailor diabetes self-management courses to African American patients, current approaches may not be focusing on what African American patients find the most valuable to help improve their clinical outcomes.

The Integrated Theory of Health Behavior Change (ITHBC) was derived from a systematic review of interventions designed to enable behavior change in chronic conditions.¹² The ITHBC is based on the hypothesis that behavior change is an evolving process with the change occurring at a distant time, gradually influenced by many factors. The theory asserts that behavior change occurs when the social and environmental context of the individual changes. It is thus important to explore the effect of psychosocial and interpersonal factors on diabetes self-management behaviors. Exploring these important factors specifically among African Americans and the impact on their self-management behaviors and clinical outcomes may help investigators better tailor interventions. It can also provide opportunities for healthcare professionals to provide individualized care to African American patients.

Previous research has studied the influence of factors such as lack of knowledge about diabetes,^{13,14} depression,^{13,15,16} cultural food choices,^{13,17} health literacy,¹⁸ social or peer support,^{13,19–21} access to transportation,^{13,18} gender,^{22–24} religion or spirituality,^{25,26} and quality of patient-provider communication,^{13,24,27,28} on health behaviors such as medication adherence, adherence to diet or exercise recommendations, and checking blood glucose. Although these studies provide some insights into perceptions of diabetes self-management among African Americans, a theoretical conceptualization of behavior change because of specific psychosocial and interpersonal factors has not been adequately studied in this population.

Research needs to explore the relationships between these factors and describe how they may affect the care provided to African Americans with diabetes. Qualitative theory-based research enables us to gather in-depth data from African American patients with diabetes about their experiences with self-management behaviors. It also allows us to explore the effect of individual and cultural beliefs and experiences on diabetes self-management behaviors and understand how psychosocial and interpersonal factors may affect behavior change. It is important to understand how these factors could be incorporated in the care provided to African American patients with T2DM or develop tailored interventions to improve self-management behaviors. The purpose of this study was to use the ITHBC model to qualitatively explore perceptions of African Americans with T2DM regarding their self-management behaviors and understand the effect of psychosocial and interpersonal factors on behavior change.

2. Methods

2.1. Study design

This qualitative study was part of a larger longitudinal, explanatory, sequential, mixed-methods study that evaluated changes in medication adherence as well as psychosocial and interpersonal factors among African Americans with Type 2 diabetes.²⁹ The ITHBC model asserts that the two domains affecting self-regulation skill and ability are: 1) Knowledge and Beliefs and 2) Social Facilitation. Improved self-regulation skills and abilities result in improved self-management behaviors (outcome).¹² We conceptualized the knowledge and beliefs domain to include psychosocial factors such as health literacy, beliefs in medicines, illness perceptions, and self-efficacy, and the social facilitation domain to include interpersonal factors such as social support and patient-provider communication (Table 1). Although, medication adherence was the only self-management behavior (outcome) considered for the larger study, the qualitative phase was expanded to include outcomes such as blood glucose monitoring, diet, and exercise behaviors.

As part of the larger study, participants ($n = 48$) from a Midwestern state completed a baseline and 6-month follow-up survey that measured changes in the aforementioned factors and self-reported medication adherence. This was followed by the qualitative phase that had two objectives: 1) Explain

Table 1
Theory-based interview guide.

ITBHC Model Constructs [12]	Corresponding Conceptualized Constructs	Interview Question Examples
Knowledge and Beliefs Domain: Psychosocial Factors		
Condition specific Knowledge	Health Literacy	How has your experience been with regards to understanding your provider's (doctor, pharmacist, nurse or other) instructions? When was the last time you checked your blood sugar?
Personal Perceptions	Illness Perceptions	What has your experience been with diabetes? What are some factors that affect how you take medicines/ how you manage diabetes?
Outcome expectancy & Goal congruence	Beliefs in Medicines	What concerns do you have about your diabetes medicines? How necessary do you think your diabetes medicines are?
Self-efficacy	Self-Efficacy	How confident are you in managing your diabetes? What changed regarding your personal ability to take your diabetes medicines?
Social Facilitation Domain: Interpersonal Factors		
Support (Informational) & Influence	Provider Communication	Many patients have trouble communicating with their doctor, how has your experience been with communicating with your doctor about your diabetes? What challenges have you faced in communicating with your doctor? How has your experience been with other healthcare professionals?
Support (Emotional, Instrumental)	Social Support	What kind of support do you receive from friends, family, or community regarding your diabetes?

and provide context for the changes in scores through participant interviews and 2) Explore patient perceptions of self-management behaviors and understand the role of psychosocial and interpersonal factors in improving self-management behaviors. This paper reports findings from the second objective. The quantitative results, qualitative findings for first objective, and mixed integrated findings have been presented together in a previous publication.²⁹ The study protocol was approved by the Institutional Review Board at (blinded). Informed consent was obtained based on participants' return of completed surveys and verbally before the interview.

2.2. Sampling

Participants were recruited from the (blinded), a practice-based research network of clinicians and academic researchers. Participant inclusion criteria were English-speaking African American men and women ≥ 20 years old with T2DM. Participants were eligible for the interviews if they met the following criteria: (1) participation in both baseline and follow-up surveys and (2) demonstration of a change (increase or decrease) in self-reported medication adherence scores. Of the 48 African Americans who responded to both the initial and follow up surveys, 22 were eligible for the interviews with semi-structured in-depth interviews conducted with a purposive sample of 10 participants.

2.3. Theory and data collection

Two researchers MM (PhD trained) and DR (PhD student) with experience in health-related qualitative research conducted semi-structured interviews with 10 participants from November 2018 to May 2019. The initial focus of the interviews was on explaining changes in their medication-taking behavior as part of the primary objective. However, the interview questions were open-ended and allowed patients to describe diabetes self-management behaviors beyond medication adherence. Appropriate follow-up questions eliciting further details regarding self-management behaviors were also asked. The interview guide was developed based on the

theoretical conceptualization of the ITBHC. Examples of the relevant questions are included in Table 1. The interview guide was pilot tested during two initial interviews and minor modifications for clarity were made for subsequent interviews. The interviews were conducted in a private room located at a publicly available space and were audio recorded and transcribed verbatim by a professional transcriptionist. Participants received \$25 upon completion of the interview based on institutional review board guidelines for incentive amounts.

2.4. Data analysis

Content analysis, defined as “a systematic and objective means of describing and quantifying phenomena”³⁰ was conducted with NVivo 11 to organize and categorize the qualitative themes. This approach was selected to aid its integration with quantitative data in the larger study and allowed for analysis of the specific phenomenon of self-management behaviors as perceived by patients. An initial deductive analysis followed by inductive analysis approach was applied. The transcripts were initially read to achieve immersion, the data were read line by line to capture key thoughts, then codes and categories were developed based on the theoretical constructs and organized into themes.³¹ New categories and themes were developed for data from the inductive approach, that were not part of the theoretical constructs. Two study researchers (DR and JM) initially coded the transcripts independently and then discussed their analytic codes. Similarities and divergences were discussed, and agreement was reached before results interpretation. Any disagreements between coders were resolved by a third team member (OS) who was not involved in data collection. The important themes related to self-management behaviors were then interpreted further by all three researchers (DR, JM, and OS). Finally, DR and OS categorized the themes (especially the new themes from inductive coding) as either psychosocial or interpersonal factors and connected it back to the theoretical domains.

2.5. Rigor

Validity (often termed as credibility in qualitative research) in our paper was established in multiple ways. Firstly, a representative sample of participants who reported either improved or reduced medication adherence was used to get different points of view. A sample of 10 participants met the typical minimum recommended sample size.^{32,33} Interviews were conducted until saturation was achieved (i.e. until data showed no new dimensions) as determined by DR and OS. Probing questions were asked to ensure completeness of data. Also, audio recordings were professionally transcribed verbatim, and DR checked for errors to guarantee transcription quality. Secondly, multiple analyst triangulation was used. Having three researchers (DR, JM, and OS) involved in the analysis addressed potential issues of selective perception and interpretive bias. The credibility of the researchers was established by using researchers with prior experience in qualitative methods and diabetes research among African Americans (DR, MM and OS) and a researcher with clinical experience (JM). Thirdly, a theory was used to conceptualize the study, build interview guides, and guide the data analysis and interpretation. Also, following the deductive approach, inductive analysis was used to identify themes not part of the initial theoretical conceptualization and connected back to the theory for interpretation. Finally, exceptions or opposing findings for any themes have been reported, to ensure credibility. All reporting has been conducted as per COREQ guidelines.³⁴

3. Results

The 10 interviews lasted about 45–60 min each. The final sample had 5 participants with increased adherence and 5 with decreased adherence scores. The sample was mostly female, 52 years old on average, and had a high school education or more. There were four main themes regarding diabetes self-management behaviors and the relationship with psychosocial and interpersonal factors. These are described in detail below. Fig. 1 depicts the ITBHC model and the themes from our study.

3.1. Attitude and beliefs regarding diabetes

Attitudes and beliefs towards diabetes were important psychosocial factors affecting self-management behaviors. Sub-themes included initial attitudes, health beliefs, and change in attitudes and knowledge due to previous experiences.

3.2. Initial attitudes

Attitudes upon diagnosis of diabetes commonly involved fear, depression, and/or neglect of their health. With time, participants expressed acceptance of their disease and medication side effects while contemplating changes to their diet and exercise.

“I think for people newly diagnosed, they get a little scared, because they don't know what they facing. And so they go into denial. I met this one girl... And she said, well, I'm a Type II diabetic, and they told me if I lose 25 pounds that would go away. I'm like don't believe that hype. I lost weight, and I'm still a diabetic, so that's not true.” [Participant 8].

Initial attitudes among participants were often negative and may indicate a lack of knowledge about diabetes and self-management behaviors.

3.3. Health beliefs

Some participants expressed beliefs that diabetes is curable which affected their perception of the disease and the use of their medications. With increased experience in diabetes self-management, some gained more positive beliefs regarding diabetes and self-management behaviors. Others believed diabetes to be prevalent only among older adults, leading to comparisons with health conditions of older relatives. Many participants also expressed scientifically inaccurate medication beliefs, which affected their medication adherence and blood glucose monitoring behaviors. A perception among some participants was that maintenance medications acted like insulin and were supposed to be only taken when blood sugars were high.

“So they [parents] take one pill, and they're like up in age... my mom is 40 years, my father is 41 years older than me. But when it comes to me, I have to take four pills of the same milligram. But then I was wondering

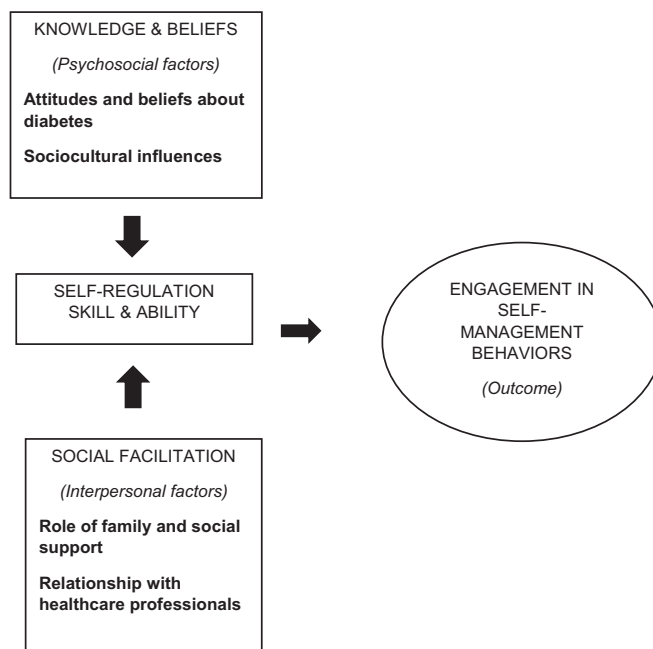


Fig. 1. The Integrated Theory of Health Behavior Change including study themes (bolded).

if it [medication] really was working, because if I'm taking so many pills, why isn't it like real truly helping my sugar levels? So I wasn't trusting the fact that the medicine would, was working... Like what am I doing different that she [mother] can take one pill, and I have to take more?" [Participant 4].

"if I take my normal doses, like I do, it [blood sugar] goes way down, and I be very uncomfortable, and I don't want to cause any other situations with it, with having to call the doctor or having to go... And so I've recently been backing off of my metformin, what I take by mouth. Once I check it [blood sugar] again, then, you know, sometimes it gets to 150. I automatically take my medicine. But if it's down to like 110, 105 or something like that, I won't." [Participant 9].

Scientifically inaccurate health beliefs acted as a barrier to positive self-management behaviors. Beliefs regarding medication adherence and blood glucose monitoring were often inter-related.

3.4. Change in attitudes and knowledge due to previous experience

Some participants were motivated to maintain positive self-management behaviors because of the fear of negative diabetes-related consequences. Participants also gained knowledge of diabetes self-management to improve their behaviors.

"And they [blood sugar] have been up before, [I was] kind of scared because it was 235 one time, and they put me in the hospital and had to give me insulin to bring it back down. So I try my best to not let my sugar get up... You can't consume the whole thing [candy] all at once, especially if you a diabetic. And that's the mistake I had made, so I try not to get that way anymore... And it [blood sugar] ain't never been high since then, so I think I'm really doing pretty good in that, taking food and... that's when I really did some research on diabetes. I have a computer, so I could look that up and have different things that I, areas I want to work on. I'll do the research and find out exactly what it is and how to handle it." [Participant 7].

This was an example of a participant discussing the consumption of high sugar foods, and the resulting experience with hospitalization and other negative health outcomes. The incident led to subsequent improvements in their self-management behavior related to diet and increase in knowledge.

3.5. Sociocultural influences on self-management

Another psychosocial factor related to self-management behaviors was the influence of social norms and culture. Among the self-management behaviors explored, participants experienced most difficulties with dietary restrictions, especially when it contradicted sociocultural norms of food preparation and meal types. Some participants also described the benefits of religious fasting. A few of the participants reported help from nutritionists, who were cognizant of their culture. They described getting help in modifying cooking practices to make it healthier. Participants also wondered about how diabetes self-management may be different for African Americans in particular.

"If we should sit together,... there is no good food there. We are from Africa. We eat a lot of rice... We eat a lot of bread. We eat like other good stuff, but then, I mean, these are the main food that we eat, so it's just hard... So when, like during the Ramadan my sugars are excellent. ... this is the month of fasting. So when we fast, obviously, you know, it's like you eat limited during the day, [or] don't eat, so if, they [blood sugar] are excellent during that month. But after that, oh, my God, because I can't continue fasting forever. I wish I could, but then I can't." [Participant 2].

"I have to learn how to cook all over again. But I was cooking wrong, you know, but that was hereditary through the family. I mean, my mom cooked. My sister cooked. And I found out I had to change, and it

[nutrition class] changed my way of cooking. And I was telling them [nutritionists], I said, I feel healthy, but I wasn't healthy. My cholesterol was high. The diabetes [blood sugar] was a little high. So I had to learn how to cook and learn how to cook healthy." [Participant 7].

Socio-cultural aspects of food intake may directly affect the dietary behaviors of African Americans with diabetes. Findings indicated that tailored care that addresses these aspects is beneficial and can lead to improved diet adherence.

3.6. Role of family and social support

An important interpersonal factor on self-management behaviors was the role of family and social support. Prior negative experience regarding a family member's health or their own health was a strong motivator for changing diabetes management behaviors. Many patients expressed a lack of social support for their self-management behaviors. Most participants described a need to feel independent in their self-management and hesitated to get help from family or friends. However, they expressed interest in engaging with other African Americans with diabetes via online or in-person support groups. In contrast, some participants were comfortable receiving help and valued it highly because diabetes was hereditary for them.

"I just feel like, at times, maybe with help of people around you eat healthy, then, obviously, you will. But then, I don't have that. I don't even have people, I have people around, of course, family is around, but then everybody is on his or her own schedule, rarely we sit together." [Participant 2].

"One other thing that I normally don't do is exercising because I don't have the time. So, yeah, they're [peer support group] always on my neck. They say, hey, did you exercise this week? How many hours did you do? So I have all of them, and we are in a group, and then they would be watching the number of steps that I have taken... the support is there. I have, I've joined a group race, like a competition. So every week you have to lose 100 more calories, [do] more steps." [Participant 1].

Participants expressed both a presence and absence of social support. Support was most beneficial when it came from persons with diabetes.

3.7. Relationship with healthcare professionals

Another interpersonal factor affecting self-management behaviors was relationships with healthcare professionals. Although participants described currently having a good relationship with their healthcare providers, some noted communication issues with prior providers, mainly regarding effects of medications and co-morbidity complications. Participants benefited from pharmacists' help with medication adherence and nutritionists' assistance with diet management. Many participants described getting written information and medication counseling from pharmacists that helped with medication adherence as well as their overall disease experience.

"Oh, the [clinic] has been great. The [clinic] is very easy because of the portal. You can go in and send a message via email, and then she [physician] will respond... And the doctors are very accessible, and the nurses are very helpful. So if I'm having a problem with a medication, I can just call even the pharmacy... The nice thing about the [pharmacy], they also add documentation instructions on whatever. So when the doctor tells me, you have to be doing this, this, I also read what they [pharmacists] give. And I keep those documents just to be sure that I am following what they're saying." [Participant 1].

"...new initiative saying that if you're taking more than two medications for a specific diagnosis, that it should be handled by the pharmacist... The only difference was that the medication that I'm now taking via mouth was converted from the regular pills to extended release, so I could take all four pills at once versus trying to remember taking

some in the morning before I ate or during my eating period, then in the afternoon. So, yes, which by using this method there's less chance of me forgetting to take my dosage... Actually, it was a pharmacist who changed the prescription. After we were talking, he said, do you miss any of these dosage? And I said, yes." [Participant 5].

Overall, participants expressed positive perceptions of the healthcare they received. They described having efficient communication with providers as well as nutritionists. Pharmacists, were especially helpful in enabling medication adherence, and together with providers helped patients improve self-management behaviors.

4. Discussion

Our study aimed to explore perceptions of psychosocial and interpersonal factors affecting self-management behaviors among African Americans with T2DM. Four themes emerged: 1) attitudes and beliefs about T2DM and self-management behaviors, 2) sociocultural influences on self-management behaviors, 3) family and social support, and 4) relationships with healthcare providers. The first two themes were categorized as psychosocial factors and the other two as interpersonal factors and were linked to the ITBHC model domains. These themes were also related to each other with all participants describing multiple themes. This is consistent with our theoretical conceptualization that psychosocial and interpersonal factors are inter-related and together may affect self-management behavior change.

Attitudes and beliefs regarding T2DM and its self-management was the most discussed factor affecting behavior. A recent systematic review concluded that psychosocial factors including favorable attitudes, beliefs, and knowledge of disease were important facilitators of diabetes self-management behaviors.³⁵ Research suggests that negative attitudes and beliefs can act as barriers to effective T2DM self-management.³⁶ Initial negative attitudes towards diabetes upon diagnosis were discussed, which may become more negative by the tendency to want to be self-sufficient. Beliefs that losing weight would cure diabetes or thinking they do not need medications were frequently expressed. The lack of knowledge resulting in these beliefs have been discussed previously and were commonly associated with long-term diabetes complications.^{13,37} Our findings indicate that among African Americans with diabetes, negative beliefs due to a lack of knowledge may be present at diagnosis as well.

Providing instructions regarding T2DM self-management immediately after diagnosis may not be sufficient or the most useful for all patients. A better approach may be to first address any negative or misguided beliefs and attitudes regarding T2DM to ensure patients have the correct information and are able to accept their condition and are motivated to change behaviors. It is also important for healthcare professionals, especially pharmacists, to recognize and address inaccurate beliefs regarding use of medications and the chronic nature of T2DM because these are commonly occurring findings.^{13,14} Understanding that diabetes may not be cured but medications can be used to maintain their health will help patients sustain positive self-management behaviors.

Sociocultural influences on T2DM self-management behaviors was another important theme. Although, this theme has come up in previous literature,^{13,25,26} research on how particular cultural influences on diet are related to other psychosocial and interpersonal factors is rare. In our study, participants struggled with following dietary recommendations when they conflicted with traditional practices but described improving dietary management over time. The positive changes were related to receiving social support from healthcare professionals who were cognizant of their culture. Practitioners must focus on the cultural impact of adherence to dietary recommendations when counseling T2DM patients on their diet. However, practical limitations in preparing healthier food for all household members or preparing separate meals may still act as barriers towards adhering to dietary restrictions.¹³

Social support from the family may help in such situations. Social support, especially from family and friends, is a commonly studied factor

affecting self-management behaviors in this population.^{38–40} It was interesting that in our study, participants discussed both the presence and absence of social support. Many described not wanting support from family or friends in general. Cultural factors may have a role to play in the need to feel independent regarding their health. However, having friends and family who also had diabetes provided a good source of health-related social support for study participants. Along with positive attitudes and beliefs towards T2DM and related self-management behaviors, prior negative experience with a family member's health helped participants improve their behaviors. Also, some participants who had family members with T2DM became more experienced by observing positive T2DM self-management behaviors in family members. In contrast to others, participants with diabetes that was hereditary in the family wanted social support. Although the role of family members in improving self-management behaviors has been studied previously,^{19,20} the distinction between support from family members who have diabetes versus those who do not was a unique finding in our study.

Healthcare professionals should emphasize the patient's role in their care and provide tools such as pillboxes and culturally appropriate classes or information on diet and exercise to help patients effectively manage diabetes self-reliantly. Participants also expressed being part of online or in-person diabetes support groups which helped them improve their diabetes self-management behaviors. These findings indicate that African American patients may benefit from peer support in their self-management behaviors, especially if they receive it from family, friends, or externally through online or in-person peer-based groups of individuals who can share the experience of having diabetes. While social determinants of health factors and limited digital health literacy can affect access to these groups, culturally-appropriate peer support interventions with face-to-face and telephonic contact have been shown to improve diabetes self-management behaviors among African Americans.^{41,42}

Relationships with healthcare professionals were important in maintaining positive self-management behaviors. Positive interactions with nutritionists, that addressed sociocultural influences helped change and maintain good dietary habits. Pharmacists helped provide guidance with medications and in making changes to prescriptions to improve medication adherence. Contrary to previous research,^{27,28} most participants described having good relationships with healthcare professionals and having efficient communication through portals, secure messages, and in-person visits. However, some mentioned poor communication with previous providers. Results indicate that the participants in our study highly value open and honest communication with their healthcare providers. It is important to keep communication channels open for patients to discuss diabetes self-management behaviors.

There are some important limitations to be noted in the study. Firstly, this project was part of a larger study of specific changes in medication adherence. Therefore, the primary focus of the interviews was medication-taking behaviors among all self-management behaviors. However, participants were asked open-ended follow-up questions when describing their experiences and perceptions. Future qualitative research should focus on all self-management behaviors including eye and foot care, especially because results show that these behaviors are interrelated. Secondly, although we meet the recommended sample size of 10–25 participants,^{32,33} it was the lower end of the recommended range. We reached data saturation with our sample, so this limitation may not have a large effect on our results. Finally, our sample was mostly female and had high-school education or more which may have affected the themes.

Despite these limitations, the study resulted in important themes concerning the perspectives of African Americans with T2DM about their self-management behaviors. Although some psychosocial and interpersonal factors have been individually discussed previously, our study identified unique aspects to these factors such as initial attitudes upon diagnosis and subsequent attitude change after their disease experience, differences in peer support and general social support perceptions, and good relationships with healthcare professionals due to patient-centered and culture-competent communication and care. These themes

were linked back to the theoretical model, which enables researchers to develop theoretically-driven interventions that are tailored to African Americans. Using the theoretical conceptualization in the study design, data collection and analysis, as well as the interpretation of findings facilitated inferences on how these factors may affect self-management behaviors.

5. Conclusion

The themes presented and the relationships between them indicate the need for healthcare professionals and future research to address the psychosocial and interpersonal factors that affect T2DM self-management behaviors in African Americans. Study results showed specific cultural and behavioral nuances and relationships between the psychosocial and interpersonal factors that have not been previously explored together as relating to behavior change. The study findings indicate the need for culturally appropriate and individually tailored interventions for African American patients with T2DM. These results can be used to enhance patient-centered diabetes counseling, especially education regarding self-management behaviors.

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Ethics statement

The study protocol was approved by the Institutional Review Board at University of Wisconsin-Madison (No. 2017–0835).

Declaration of Competing Interest

The Authors declare that there is no conflict of interest.

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