

# Cultural and Social Challenges of Diabetes Self-Management Education Through Physicians' Voices

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## ABSTRACT

**Objective:** The aim of this study is to understand how the physician-patient relationship is related to referral practices for diabetes self-management education and physicians' perceptions of culturally competent health care delivery at a large health system affiliated with an academic medical center in a Midwestern city.

**Methods:** Sixteen physicians (6 family medicine, 6 internal medicine, 4 endocrinology) participated in semistructured interviews. Interviews were audio-recorded, transcribed, and coded. Data were thematically analyzed using MAXQDA software.

**Results:** All physicians considered diabetes self-management education a very important part of diabetes treatment, but physician referral patterns to diabetes education varied. Study findings indicated that both high and low referring physicians reported providing care that was responsive to personalized patient needs, including cultural beliefs, attitudes, and behaviors that affect health/health care. Building relationships and rapport with patients led to discussions of understanding barriers to diabetes management.

**Conclusion:** This study highlights physicians' perceptions of and concerns about referrals to diabetes self-management education and the treatment of type 2 diabetes. Physicians understood the personal, environmental, and health care factors that limit the number of racial/ethnic minorities from participating.

**Practice Implications:** In addition to diabetes education, physicians suggested that additional resources or programs will help them address socioeconomic factors beyond their control and to understand cultural preferences.

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## INTRODUCTION

Diabetes health disparities by race, ethnicity, and socioeconomic status continue to be a major public health concern.<sup>1</sup> Racial and ethnic minorities have a higher risk of diabetes complications that may result in blindness, renal disease, heart disease, stroke, and lower extremity amputation than non-Hispanic whites.<sup>2</sup> Tight diabetes control (maintaining hemoglobin A1c levels at or less than 7%, ideally) can prevent or delay complications of the disease. Achieving the best possible glucose control requires an individualized approach including culturally competent health care tailored to ethnic, racial, religious, geographic, or social group needs.<sup>1,3</sup>

In much of the current research describing cultural competence, the focus is narrowly construed to include race and ethnicity only, while the role and definition of "culture" is much more complex. Definitions of cultural competence may differ and overlap with other concepts, such as cultural competence and patient-centered care.<sup>4</sup> Therefore, it is important to distinguish that this study used the Consumer Assessment of Healthcare Providers and Systems Cultural Competence (CAHPS CC) Item Set developed by Dr Robert Weech-Maldonado and collaborators to assess cultural competency. Based on their work, culturally competent care is defined as care that respects diversity in the patient population and cultural factors that can affect health and health care, such as language, communication styles, beliefs, attitudes, and behaviors.<sup>5</sup>

Given that racial and ethnic minorities have higher rates of diabetes and are more likely to develop diabetic complications, interven-

ing earlier and aggressively in the disease process is beneficial. Formal diabetes self-management education is recommended to enhance diabetes self-care knowledge, provide skill training, understand how to overcome identified barriers, and create self-efficacy.<sup>1,3</sup> Despite the solid evidence that diabetes self-management education can improve clinical outcomes and health status, less than half of people with diabetes receive formal diabetes education.<sup>6</sup> In studies on attendance at diabetes self-management education, the most important factor predicting patient participation was the physician's influence.<sup>7</sup> A review of the literature did not reveal any studies evaluating the perceptions of culturally competent health care in high and low referring physicians to diabetes self-management education.<sup>8-12</sup>

A previous quantitative study by our research team found that less than 7% of 9,992 patients with type 2 diabetes received a diabetes self-management education referral within the health system.<sup>13</sup> These findings underscored the need to understand the reasons behind low referral rates. Recognizing that there may be many reasons for underuse of diabetes self-management education, the research question is whether high referring physicians may be practicing health care differently from low referring physicians. To address this question, we conducted in-depth interviews with high and low referring physicians to evaluate their perceptions of self-management education and the integration of cultural competence in their practice areas. A better understanding of how cultural competence is incorporated into the treatment of type 2 diabetes and how the physician-patient relationship influences access to diabetes education might support efforts to decrease the cost of complications and increase quality, especially patient-centered, effective, and equitable services in the health care system.

## METHODS

### Study Design

This is an exploratory study using in-depth interviews with physicians from family medicine, internal medicine, and endocrinology practices who treat patients with type 2 diabetes. In-depth interviewing is a method of qualitative research in which the researcher explores extensively the participants' perspectives, typically with a small number of individuals.<sup>14</sup> Qualitative methods can provide important insights about social beliefs and behavioral and cultural considerations to improve diabetes management.<sup>15</sup> The study was approved by the institutional review board at the Medical College of Wisconsin prior to any study activities. Informed consent was obtained from each participant, and a lunch incentive of \$15 was provided.

**Recruitment**—Criterion sampling, a type of purposeful sampling, was employed to recruit physicians by selecting participants who met specific criteria ensuring data quality and achieving data saturation.<sup>16</sup> The selection of ordering physicians to determine referral rates was based on the formal referral process to the 2 Diabetes and Health Education Centers, within 1 health system (Diabetes Education Accreditation Programs). This was the best approach to assess access to diabetes education in the health system.

A physician's referral rate to diabetes self-management education was derived from the referrals placed in the electronic health record. Eligibility criteria for the study included the following: (1) endocrinologist, family practice clinician, or general internist; and (2) a clinical practice that includes patients with type 2 diabetes served at a specific, single health care system. A list of eligible physicians was generated from the electronic medical records system from the period 2006-2015 to designate physicians as high referrers versus low referrers. The referral numbers were attributed solely to the ordering physician.

Practice referrals were calculated using the number of referrals placed to self-management education (CPT code G0108) by the ordering physician as a numerator and the number of patients with type 2 diabetes in their patient panel as a denominator (referral range: 2-267, patient panel size range: 42-1,156). The literature does not provide average national or local referral rates to diabetes education. Main information about referrals came from the American Diabetes Association Standards of Medical Care guidelines, which recommend referrals at 4 key points: a diagnosis of diabetes, on an annual basis, when new complicating factors (diabetes-related or other) influence self-management, and at the time of transitions in care.<sup>1</sup> Therefore, this study calculated meaningful referral rates for physicians by dividing the total number of referrals by the total list size (patient panel).<sup>17</sup> Seventy-nine physicians were designated as high referrers (rates above the median >0.16; eg, 28 referrals/169 patients with type 2 diabetes=0.17) and 81 physicians were designated as low referrers (rates below or including the median ≤0.16). Using the complete list, physicians were contacted via email by their respective clinic medical directors to announce the study and encourage participation. Physicians who wished to participate voluntarily contacted the research coordinator for an interview appointment.

**Data Collection**—Interviews were conducted between March and July 2016. Physicians were recruited from a health system that includes an academic medical center-based practice and community-based practice, with both having primary and specialty care practices located in and around a mid-sized Midwestern city. Interviews took place at the physician's clinical office space.

Individual interviews were conducted using a semistructured guide based on specific study objectives, with content following the CAHPS CC Item Set (the cultural competence index is available as Appendix A at [https://www.wisconsinmedicalsociety.org/\\_WMS/publications/wmj/pdf/117/5/Appendix%20A\\_Azam.pdf](https://www.wisconsinmedicalsociety.org/_WMS/publications/wmj/pdf/117/5/Appendix%20A_Azam.pdf)).<sup>4</sup> The research team designed the interview guide and ensured the flow and clarity of the questions. The guide included questions regarding physicians, practice patterns, perceptions of diabetes self-management education, how they identified social and cultural needs, and how they aligned the treatment of diabetes and culture (physician interview questions are listed in Appendix B, found at [https://www.wisconsinmedicalsociety.org/\\_WMS/publications/wmj/pdf/117/5/Appendix%20B-Phys%20Int%20Questions.pdf](https://www.wisconsinmedicalsociety.org/_WMS/publications/wmj/pdf/117/5/Appendix%20B-Phys%20Int%20Questions.pdf)).

**Data Analysis**—Interviews averaged 30 minutes. Interviews were audiotaped and transcribed verbatim for analysis. MAXQDA version 11 (VERBI GmbH, Germany) was used to facilitate coding and analyses.<sup>17</sup> Interviews were analyzed using the framework method<sup>18</sup> combined with thematic analysis.<sup>14</sup> The framework approach focuses on using structured topic guides to elicit and manage qualitative data. Specifically, the codebook started with some a priori codes developed from the most relevant literature and expanded during analysis using the thematic analysis approach.

Analysis occurred in 2 stages, corresponding with the inductive approaches of open coding and axial coding.<sup>14</sup> For the open coding, 2 coders (LA and SY) separately conducted line-by-line coding of a sample of transcripts to create codebooks. The codebooks were then refined into a master codebook through comparison and categorization, with discrepancies resolved through discussion on the interpretation of the codes and their properties and dimensions. Axial coding followed the open coding, wherein transcripts were reviewed and references to each of the elements identified in the codebook were highlighted. The analysis of key words, phrases, and texts allowed the coders to take the next step of extracting and identifying themes. Datasets were categorized into high and low referral groups looking for similarities and differences within the data. The themes identified in each group had a high degree of overlap. Therefore, the low group data set and high group data set were combined into one file.

To support credibility/validity and dependability/reliability of the data, the coders triangulated data sources and methods.

## RESULTS

Sixteen physicians participated in this study: 6 from family medicine (4 low and 2 high referrers), 6 from internal medicine (4 low and 2 high referrers), and 4 from endocrinology (1 low and 3 high referrers). Eight of the physicians self-identified their race as white, 2 as African-American, and 4 as other. Half of the physicians were male. Seven participants reported having received cultural competence training within the last 5 years and 6 participants reported having received patient-centered care training. Additionally, participants had an average of 30% racial and ethnic minorities in their practice and estimated referring to diabetes education an average 10% of the time regardless of whether categorized as high or low referrers. Other characteristics are summarized in the Table.

### Interview Findings

Three themes emerged that overlapped across the high and low referring physicians: (1) diabetes self-management education referral patterns; (2) understanding patient culture and preferences; and (3) shared physician and patient decision-making. Results are presented in the order of their frequency within the raw data of the interviews.

### Diabetes Self-Management Education Referral Patterns

Three different types of physician practices were identified for

**Table.** Demographic Characteristics of Physicians (n=16)

Characteristic	n (%)
Specialty	
Endocrinology	4 (25.0)
Family Medicine	6 (37.5)
Internal Medicine	6 (37.5)
Sex	
Female	8 (50.0)
Race	
White	8 (50.0)
African American	2 (12.5)
Other	6 (37.5)
Cultural competency training	7 (43.8)
Patient-centered care training	6 (37.5)
Aware of diabetes self-management education	15 (93.8)
Recognized by the National Committee for Quality Assurance for Excellence in Diabetes Care	
Yes	8 (50.0)
No	7 (44.0)
Don't know	1 (6.3)
Median years (and range) in practice	15 years (5-34 years)
Median years (and range) in current role	8 years (2-24 years)
Median patient care time spent in clinic	80.0%
Median distribution of racial and ethnic minority patients	30.0%
Median percent of referrals	10.0%

referring to diabetes self-management education: (1) refer to the off-site diabetes education center (2 formal diabetes education health centers using CPT Code G0108); (2) on-site, clinic-based education and refer to the off-site diabetes education center; and (3) on-site education only. Significant variation existed in how diabetes education took place within a single health system based on perceptions and use of available resources.

Patients were referred to a diabetes nurse educator, pharmacist, or nutritionist. Referrals were tracked only if they were ordered in the electronic health record system via the CPT code G0108. When patients attended the diabetes education session, the referring physician received a note from the diabetes educator. In general, physicians did not track if a referral was verbally offered and declined.

**Referrals to the Off-site Diabetes Education Center**—Nine physicians [3 high and 6 low referrers] reported sending patients to the diabetes education center. Physicians provided basic diabetes education; patients with difficult-to-control diabetes received repeated referrals to reinforce nutrition and other aspects of diabetes management. If patients had been diagnosed years ago, participants reported that they still refer to diabetes education to keep patients up-to-date with new information:

“So I usually send my patient the first time I meet the patient, the patient has uncontrolled diabetes, A1c is high, so I tell the patient that they really need to go and see the diabetes educator. And many of them will tell me, but I already saw the educator when I was diagnosed with diabetes ten years ago, 20 years ago. I say, yes, but there's new information that

you need to learn, like what is your A1c, what are the newest goals, new medications.” (*Female Endocrinologist 101*)

**On-site Education and Referral to the Off-site Diabetes Education Center**—Five physicians [3 high and 2 low referrers] conducted most diabetes education on-site with the physician or another provider, such as a nurse or pharmacist. This group focused on educating patients themselves and referred out to the diabetes education center only when it was difficult to control their patient's HbA1c level. Participants discussed the barriers to attending off-site diabetes education for patients, including the need to schedule a different appointment, lack of coordinated care, or costs for an additional visit:

“So when I first started a couple years ago doing all this for diabetes I trained my nurse. She went and talked to a diabetes educator and she got on board. However, those visits are free and there's no reimbursement and that takes about an hour or so of my nurse's time. So just as activity got busy it was not that sustainable, but I try to send them if they are not well controlled or if they're maybe diagnosed to one of the larger centers.” (*Female Internal Medicine Physician 102*)

**On-site Education Only**—Two endocrinologists [1 high and 1 low referrer] did not refer to an external diabetes education program because they have on-site nurses and dietitians integrated into their practice model. Education is mainly incorporated into the clinic visit and, therefore, is not billed separately. A possible exception would be if a patient needed to return for specific education such as how to take insulin. In this case, a nurse would teach the patient how to do it and the education would be a billable service.

“But we've had the luxury of being able to use, for the most part, one-on-one diabetes education for our patients, whether it be learning to take insulin, learning, you know, [sic] and a dietitian who's here and referred to and she can instruct them in dietary changes. So we've had that luxury.” (*Male Endocrinologist 103*)

### Understanding Patient Culture and Preferences

Physicians in this study considered the alignment of patient culture as challenging to the treatment of type 2 diabetes. They noted how diet is a fundamental part of diabetes care, and described culture as playing a role in beliefs about diet, exercise, and medications. They further described how complex culture can be to understand present dietary choices, lifetime dietary history, and patterns of exercise within their families and communities.

Some physicians described patient culture as being difficult to decipher, because culture is ingrained into individuals. One physician stated:

“I think trying to explore who they are and what their background is important, but once you've identified some of those things, I don't know how you overcome that cul-

ture because that culture is so deeply embedded, and then so much of how they manage their diabetes is beyond my control.” (*Male Internal Medicine Physician 104*)

Participants spoke more about individualizing the treatment of diabetes instead of focusing on the patient's background as noted in this quote: “I try to align the treatment of diabetes with every specific patient, and I don't know that I've had to make too many adjustments based on specific cultural preferences or issues.” (*Female Internal Medicine 105*)

Finally, most physicians reported regularly encountering patients' socioeconomic needs instead of cultural needs. They expressed concerns about the difficulties of directing patients to community resources due to a lack of time and knowledge. Most physicians described directing patients to food pantries, prescription assistance programs, or getting in contact with a social worker.

### Shared Physician and Patient Decision-Making

Most physicians relied on patients to describe what is important to them or any existing barriers to self-care they might have. While participants described building relationships and listening to their patients to understand their values and backgrounds, as important, most physicians did not find a need to inquire further unless their diabetes, weight, or blood pressure were out of control. One physician stated, “Why are we not able to exercise regularly, why are you not able to change your diet, why are you not able to take your medication every day?” (*Female Family Medicine 106*) Some physicians found strategies with patients with uncontrolled diabetes and acknowledged the need for understanding and collaboration to manage diabetes.

## DISCUSSION

The aim of this study is to understand how the physician-patient relationship is related to referral practices for diabetes self-management education and physicians' perceptions of culturally competent health care delivery. In general, physicians strongly support and value formal and informal diabetes education. In this study, formal diabetes education was only 1 type of diabetes education, and the strength of this study is that additional types of education emerged, such as on-site diabetes education by physician, pharmacist, nurse, or other health care providers. As a result, some of the low referring physicians did not refer to the diabetes education health centers because they had a diabetes educator on-site. Therefore, more research is needed to determine the best strategies for incorporating unstructured and flexible approaches to self-management education.

Additionally, the term *culture* varied depending on the physician's perspective. The researcher did not ask physicians directly to define culture, but made inferences based on responses about how they align culture with the treatment of diabetes. The interviewer did not define culture for the physicians to decrease social desirability bias in their responses.<sup>6</sup> High referring and low referring physicians reported providing care that was responsive to

personalized needs, including beliefs, attitudes, and behaviors that affect health and health care. Findings highlight that most physicians did not report cultural or religious ideas conflicting with how they educate or communicate with their patients. Physicians thought that only foreign-born or limited English proficient patients may have explicit needs based on cultural beliefs and values. Thus, interventions need to recognize the differences between and within group variation.<sup>4</sup>

Physicians believed the strongest factors for patient diabetes outcomes were socioeconomic rather than cultural. In line with previous research, some physicians were still able to reveal barriers that patients were facing by having strong physician-patient relationships built on time, effective communication, trust, and commitment.<sup>19,20,21</sup> While no differences were found with respect to communication patterns, this study is still clinically relevant as both low and high referring physicians were equally attuned to the social and economic needs of their patients. Physicians suggested additional resources or programs (eg, social workers) would help them address socioeconomic factors beyond their control. This study indicates that a physician's cultural competency does not influence access to diabetes self-management education. High referring physicians understood the patient's perspective and gained insight into their personal world views; however, that did not always lead to positive clinical outcomes.

### Limitations

This study has some limitations. One is that the findings are specific to physicians within a single health system and thus may not be generalizable. Another potential limitation is that the 16 physicians who volunteered to be in the study may have been different than those who declined or did not respond. Additionally, there was a striking difference in referral patterns and patient panel size for each of the 16 physicians—some with very low volumes and some with very high volumes (referral range: 2-267; patient panel size range: 42-1,156). This explains why the median value of 0.16 was relatively low.

### CONCLUSION

Cultural competence is an important factor in diabetes care delivery. Broadly, this study shows that physicians perceive that they provide care that is responsive to personalized needs, including cultural beliefs, attitudes, and behaviors that affect health and health care. Although no differences were found between high and low referring physicians to diabetes self-management education, the key lies in building trust and relationships to consider opportunities for redesign. Innovative approaches may be found and implemented in redesigning formal structured diabetes self-management education programs that may improve referral rates, attendance, self-management, and well-being.

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**Appendix A- Consumer Assessment of Healthcare Providers and Systems Cultural Competence (Weech- Maldonado et al., 2012).**

<b>Domain</b>	<b>Items</b>
Doctor Communication-Positive Behaviors	Explains things in a way that the patient understands, listens carefully, spends enough time with the patient, respect, easy to understand instructions about taking care of health problems or concerns, asks for understanding, teach-back
Doctor Communication-Negative Behaviors	Interruptions while patient talks, doctor talks too fast when talking to patient, doctor uses a condescending, sarcastic, or rude tone or manner with patient
Doctor Communication-Health Promotion	Discusses healthy eating habits, talks about exercise or physical activity, talks about things that worries patient or causes stress, discusses patient feelings such as sad, empty, or depressed.
Doctor Communication-Alternative Medicine	Allows other people to help with illness to stay healthy (e.g. acupuncturist or herbalist), uses natural herbs
Shared Decision Making	Discusses pros and cons of each choice for treatment of health care, doctor asks patient what is best if there is more than one choice for treatment or health care
Equitable treatment	Establishes personal rapport, non-verbal body communication, verbal communication, differential treatment
Trust	Comfortable sharing information with doctor, honest and open communication, doctor cares about the patient and his/her health, appropriately explores patient perspective
Access to Interpreter Services	Interpreter available, appointment starts late because the patient had to wait for an interpreter (Family and friends should not be included)

## **Appendix B- Physician Interview Questions**

### **Practice patterns**

1. Please tell me about your practice patterns for delivering care to patients with type 2 diabetes? Can you speak about the metrics that you are held accountable to by the health system?

### **Diabetes self-management education (DSME)**

2. What is your perspective on diabetes self-management education (DSME)?
3. What criteria do you use for DSME referral?
4. Tell me about a case when you referred a patient to DSME who refused the referral. How are patients becoming aware of DSME? How do you keep track of who has been referred, refused the referral, attendance at DSME, etc...?
5. How do you find out about patients experience with the DSME program?
6. Please describe other ways patients receive diabetes education.

### **Cultural competency in health care**

7. How do you align patient culture and the treatment of diabetes?
8. What has been your experience treating patients from diverse racial and ethnic populations?
9. If you suspect a patient was experiencing challenges due to cultural or socioeconomic reasons, what steps would you take to understand these reasons?
10. How have you been able to guide patients who identified barriers to optimal health?

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