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Multidisciplinary Coordinated Care for Type 2 Diabetes: A Qualitative Analysis of Patient Perspectives

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Abstract

Aims: To explore the patient perspective on coordinated multidisciplinary diabetes team care among a socioeconomically diverse group of adults with type 2 diabetes.

Methods: Qualitative research design using 8 focus groups (n=53). We randomly sampled primary care patients with type 2 diabetes and conducted focus groups at their primary care clinic. Discussion prompts queried current perceptions of team care. Each focus group was audio recorded, transcribed verbatim, and independently coded by three reviewers. Coding used an iterative process. Thematic saturation was achieved. Data were analyzed using content analysis.

Results: Most participants believed that coordinated multidisciplinary diabetes team care was a good approach, feeling that diabetes was too complicated for any one care team member to manage. Primary care physicians were seen as too busy to manage diabetes alone, and participants were content to be treated by other care team members, especially if there was a single point of contact and the care was coordinated. Participants suggested that an ideal multidisciplinary approach would additionally include support for exercise and managing socioeconomic challenges, components perceived to be missing from the existing approach to diabetes care.

Conclusions: Coordinated, multidisciplinary diabetes team care is understood by and acceptable to patients with type 2 diabetes.

Keywords

Type 2 diabetes; team-based primary care; qualitative research

Optimal diabetes care is interdisciplinary and complex. For example, even a patient with well-controlled diabetes might regularly see a physician, a diabetes nurse educator, and a dietitian just for direct diabetes management. To address difficult-to-control diabetes, or prevent or manage diabetes complications, the number of providers expands considerably:

endocrinologists, ophthalmologists, and podiatrists might all be a regular part of some individuals' care. When possible, team provision of comprehensive diabetes care is the recommended approach, ideally as part of the patient-centered medical home, with team members working at the top of their license.[1, 2] This differs from prior care models, in which the individual doctor-patient relationship was the paramount, and often the sole, relationship.

Very little is known regarding the patient experience of care in the relatively new team care model, and important questions remain unanswered: do patients feel that care is coordinated or fragmented?[3] Do patients feel deprived of time with individual providers?[4] Do patients see themselves as part of the team, or, as one recent study of interprofessional team meetings found, might some feel that "They are talking about me, but not with me"?[5] Further, patient perceptions of care quality may diverge from other quality assessments used in healthcare.[6]

Our academic medical center implemented a diabetes team care model within 20 primary care practices that were part of our practice-based research network between 2012 and 2014. [7] The model shifted the focus of diabetes care from a model that centered on the doctor-patient relationship with referrals to certified diabetes educators and dietitians as needed, to one that emphasized more protocolized, multidisciplinary care involving practice-based nurses and dietitians, embedded locally in clinics.[7] An evaluation of the model found significant improvement in glycemic control for patients with hemoglobin A1c > 9.0%. [7] In this project, we sought to understand the patient experience of diabetes care and patient perspective on team care, as well as to determine preferences for the provision of ideal diabetes care, both to shape the model and to identify any potential pitfalls of this approach. Specifically, our goal was to obtain patient perspectives that could drive implementation of patient-centered diabetes care in the primary care setting.

Methods

Setting and Study Sample

The study was conducted in an academic primary care network with 20 affiliated primary care practices in eastern Massachusetts. The diabetes population of the primary care network was approximately 12,000 at the time of the study. Practice types were diverse, including hospital-based academic practices, small group practices, and community health centers. The program has been previously described in greater detail.[7] In brief, the program had the following core elements, shared by all practices: 1) A physician leader for support of the project, 2) A nurse (or nurse practitioner) diabetes champion who managed a population health diabetes registry, served as a single point of contact for patients, and coordinated diabetes management plans with the patient's primary care physician and specialists, and 3) An assigned dietitian who accommodated and expedited referrals for nutrition counseling. [7] The diabetes champions used management protocols that specifically incorporated motivational interviewing techniques, scheduled 'check-ins' that were not tied to a clinic visit, and evidence-based protocols for insulin initiation and titration.[7] Implementation varied across clinics in two main ways—whether or not the dietitian was located on site, and whether the practice added other members of the practice to their core care team, such as

medical assistants or front desk staff. All diabetes team care members attended semi-annual conferences to support program implementation. Our sampling strategy took variation in implementation into account, aiming to enroll participants from practices with team care approaches representative of the range of model implementation.

Eligible patients were adults (age > 18 years old) with diagnosed diabetes who received their primary care at a network primary care practice. All patients included in the study had type 2 diabetes.

Focus Group Guide Development

The focus group guide was developed via an iterative process. The authors included topics that covered issues in the development and enactment of the team care, drawing from the Chronic Care Model,[8, 9] shared decision making models,[10] theory of planned behavior, [11] and models of diabetes self-management.[12] The guides contained open-ended questions and prompts. These were then reviewed and modified based on the suggestions of multi-disciplinary practitioners (dietitians, nurses, psychologists, and physicians) involved in diabetes care, but outside of the study team. The modified guide was then tested in a pilot focus group of individuals with diabetes (not analyzed thematically), and further modified based on feedback from this session.

Procedures

This study used standard qualitative research approaches. Participants were identified by electronic health record review, and then approved for contact by their primary care provider. Up to 5 attempts were made to contact participants. Participants who participated in the focus groups received \$25. Descriptive data regarding the participants (e.g., recent hemoglobin A1c and average of up to 3 recent blood pressure readings) were collected from the electronic health record.

We conducted 8 focus groups (n=53) from December 2014 to March 2015. Focus groups sizes ranged from 4 to 9 participants, and lasted approximately 90 minutes. Enrollment continued until thematic saturation was reached. Groups were conducted by one of the authors (SAB) and audio recorded.

Focus group recordings were transcribed verbatim. We used an iterative process to develop the coding framework.[13] Each transcript was coded independently by 3 reviewers. Using the immersion/crystallization technique,[14, 15] issues and themes that emerged were identified and discussed by the co-authors; any disagreements were resolved by consensus.

The study protocol was approved by the Human Research Committee at Partners HealthCare.

Results

Participant Characteristics

The mean age of the 53 participants was 59 years (range: 33 to 84 years) (Table 1). The number of participants in the 8 focus groups ranged from 4 to 9. The groups were diverse

with regard to race/ethnicity and socioeconomic status: 63% had not attended college, and 43% had Medicaid insurance.

Themes

Major themes and representative quotes are presented in Table 2. The discussions focused on two broad areas—experiences with members of their diabetes care team in the current system, and desired components of ideal diabetes care.

Experiences with current system

Opinions were divided among those who thought the current system was working well for them, and those who felt the system was overly complex, or left them feeling adrift or unsupported.

Facilitators in the current care model—Participants noted positive elements of the current system, including that they generally liked their primary care doctors and saw the doctor as trying to help. Further, participants reported establishing a close relationship with nurses and nurse practitioners who specialized in diabetes management, who were often seen as being more available than physicians. Some participants also appreciated the concrete advice dietitians offered.

Barriers in the current care model—Perceived barriers in the current system included a sense that primary care doctors were overwhelmed, often overbooked, and unable to devote time specifically to diabetes management. Some participants also felt that diabetes was too complicated for any one clinician to fully master. Lack of coordination among many care providers, and simply the large number of appointments with many different providers, was also seen as a barrier.

Regarding interactions with dietitians, some participants felt the advice was too ‘preachy’ and not specific to their experience. One respondent noted that it was difficult to identify with a dietitian, as the dietitian did not appear to struggle with weight issues or diabetes personally. Finally, limited insurance coverage of nutrition counseling, generally capped at 3 visits per year, was noted as a barrier.

Ideal Team Care

Participants strongly endorsed the idea that diabetes should be managed as part of a team, and noted that highly interdisciplinary teams were desirable. Disciplines mentioned as being important included primary care physicians, specialist endocrinologists, dietitians, nurses and nurse practitioners with diabetes expertise, social workers/case managers (to help navigate socioeconomic barriers to care), and physical therapists or others who could help promote physical activity. Because of the expense of diabetes management, including food, medications, transportation, and out-of-pocket costs for healthcare visits, participants thought financial counselors could also be an important part of the care team. Participants did not express concern that such a diverse team would lead to care fragmentation. However, participants emphasized the importance of having a single point of contact for their care, and the importance of receiving a timely call back if they had questions. Participants also noted

that having a single point of contact, as experienced by those seen in practices that had implemented the team care model, could help ensure that care being received was indeed patient-centered, and that care team members were talking with patients, not merely about them.

Physical activity, in particular, was seen as an area where an ideal program would differ from current care. Within the healthcare system, in contrast to the availability of resources to promote adherence to medications and diet, there was little instruction about how to exercise. Beyond the healthcare system, participants noted barriers accessing exercise equipment, such as high costs of gym membership, and inconvenient locations and hours.

Participants noted that education would be an important part of ideal care, and should occur in a group, face-to-face setting, approximately once a month. Groups were felt to inspire commitment and forge interpersonal relationships that could shore up flagging motivation. Additional content delivered via telephone or internet was seen as useful by some participants. Participants were clear that information should have a component of skill building and real-world application, not simply provision of information. Further, goals should be developed in partnership with the participants, rather than set in a 'top-down' manner.

Participants noted that work obligations would be a major reason they might not attend in-person educational sessions, and expressed interest in flexible scheduling options. Other barriers to attendance they thought merited consideration included time need for care-giving, weather, traffic, and the expense of transportation and parking.

Discussion

Patient focus groups revealed that patients with type 2 diabetes are very open to a team care approach, with little concern about fragmentation and an expansive view of the care team, one that encompasses a wider range of providers than is conventionally envisioned. Patients generally felt that the complexity of diabetes care was too great for a single provider, and looked to nurses, dietitians, and ideally, support for exercise and help navigating socioeconomic barriers as potential components of a care plan. A strong theme was the desire to identify with others, whether it be a dietitian who was relatable or other members of a diabetes support or education group.

Patients' current experience with diabetes care identified known barriers, such as the lack of physician time to attend to complex management, as well as financial barriers, such as difficulty with insurance coverage for dietitian appointments.

This study of patient perspective of diabetes team care extends prior work. Other reports have found that patients with type 2 diabetes can be overwhelmed by referral to many health professionals with a sense of fragmentation of care, particularly when those professionals were not co-located.[3] Co-located team care is more convenient, and may have a lasting impact on patient perceptions even after patients are no longer supported by a care team.[4] This report suggests that patients are very open to team care, with a variety of non-

traditional team care members (e.g., physical therapists, social workers) seen as potential members of a coordinated care team.

This study suggests some practical next steps for future work. First, this was a qualitative study, and we did not attempt to quantify the proportion of participants who held the viewpoints elicited in the study. Further work could help determine which viewpoints are most common, or are concentrated among a subset of the population. Next, participants expressed a desire to learn skills, not just knowledge, a finding that is consistent with other reports.[16] They were willing to attend a monthly group program in theory, though potential practical barriers were noted. This supports the development of further team care models, including group visits and group programs that focus on self-management skill building, not merely self-management education.

The results of this study should be interpreted in light of several limitations. The participants in these focus groups were drawn from a single primary care network in a single state. Though thematic saturation was reached, other themes may have emerged had the study drawn from a different population. Next, though we used random sampling of potential participants, those with particularly strong feelings or fewer or greater barriers may have been most likely to participate. Finally, our focus groups were conducted only in English, the primary language for >90% of our sample. Results may have differed if other language groups had been included. These limitations were balanced by several strengths. The groups had significant racial/ethnic and socioeconomic diversity, and included patients who have experienced different models of primary care practices and diabetes management efforts.

Conclusions

As diabetes team care is more widely adopted, differing approaches to implementation will represent opportunities to learn what is and what is not working. We believe it is imperative that evaluations of new care models include the patient perspective, and that team care implementation efforts incorporate lessons learned from patients. Broad, multi-disciplinary, and well-coordinated teams, guided by patient experience, implemented well, can improve diabetes management.

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Table 1:**Participant Characteristics**

	Mean (SD), or %
	N=53
Age, years	59.4 (12.0)
Female	43
Race/ethnicity	
Non-Hispanic White	70
Non-Hispanic Black	15
Hispanic	11
Asian/Other/Multi	4
Education	
<High School Diploma	7
High School Diploma	56
> High School Diploma	37
Insurance	
Private	23
Medicare	34
Medicaid	43
Hemoglobin A1c	7.8% (1.7%) [62 mmol/mol (18.6 mmol/mol)]
LDL Cholesterol, mg/dL	89.5 (26.7)
Average Systolic Blood Pressure, mmHg	130.7 (13.8)
Average Diastolic Blood Pressure, mmHg	75.2 (8.8)

LDL = low density lipoprotein. Hemoglobin A1c and LDL cholesterol results were the most recent available at the time of the focus group, up to 18 months prior. Average systolic and diastolic blood pressure represent the mean of up to 3 blood pressure readings.

Table 2:

Themes regarding diabetes team care and illustrative quotes

Theme	Quote
Current System Facilitators	"[T]he nurse clinicians in my book are the best resource. That's what I think."
	"I've dealt with the nurse practitioner who's great. Um, you know, always returns your call"
	"I did see a nutritionist and she told me something that for years I have wanted to know: how many grams of sugar could I have a day. And um... and she told me that and I stayed with that and didn't exceed it and I did—I lost weight. It was amazing."
	"I would credit her [the dietician] with, uh, ... both the way in which she delivered the information and uh... how well she persuaded me um—she would be a substantial part of why I lost all that weight."
Current System: barriers	
	"[N]othing toward the docs, but the docs don't have the time. They don't. You know, and from my own experience, double booking, triple booking doesn't leave a lot of time for discussion so..."
	"It would be great if they would focus more attention because I—the way I see it... when I was a kid, the doctor was in the neighborhood. He delivered you. You saw him on a regular basis. After the exam, you sat down at the desk with him and you talked. Now you go see the primary care physician, he runs in. He's got people in three other rooms. He's running back and forth. It's, you know, try and compact everything into it. You don't really get to really go over everything..."
	"No that's—I think that's ridiculous because I see [my primary care doctor] as struggling"
	"You know, when I call my doctor, I always get the nurse and then she talks to my doctor and then the doctor talks to her and she talks to me and I never get to talk to my doctor unless I'm in the office and then its rush rush rush rush. You know?"
	"I think that a GP [General Practitioner] even a very good one—diabetes is a very complicated disease and I think a good GP can only know so much about diabetes."
	"Yeah we all know we're heavy and stuff like that and it's hard to lose weight and they just don't seem to... care. You know? They're skinny anyways, you know. They don't care. Yeah this girl was a little slim girl."
	"[W]ith me it basically was in one ear and out the other..."
	"The only thing is um... I'm on Medicare and I could only be allowed three visits with her... So I was really, you know, getting rolling and I enjoyed going to her and um... and then it was like you can't come anymore, you know so, uh... but I did keep it up for a while by myself."
Ideal Team Care	
	"An exercise crew you know I think... Yeah, exercise crew as a group..."
	"I like to see people face-to-face... It doesn't have to be one-on-one but if I don't have a commitment then I don't go. If it's up to me then I can snuff it real quick."
	"Maybe once a month [for group meetings] would be good"
	"When I was working I blew off more appointments. I didn't make anything 'cause I had trouble getting time off of work."
	"But if you just had a person's telephone number and you could call them. That might be a better way."
	"I think that's the worst possible thing you can do is try to impose your will upon the [patient]."
	"I think we need something extra. Um you know, my doctors are fine. But there's something else – not talking about a nutritionist or an exercise person or something like that, but giving you a better idea of what's going on with diabetes itself"
	I didn't know that there was financial help out there. So for about 2 or 3 months I went without all my medications and that's when the right foot started acting up and the right big toe started turning black and I had to go in. But finally went to the financial people at the MGH and you know there's-- I didn't realize how much there is out there.