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“It’s a Wild Thing, Waiting to Get Me”:

Stance Analysis of African Americans With Diabetes

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Abstract

Purpose—This mixed methods study uses a unique approach from social science and linguistics methodologies, a combination of positioning theory and stance analysis, to examine how 20 African Americans with type 2 diabetes make sense of the practices that led to recurrent emergency department visits to identify needs for more effective intervention.

Methods—In a purposive sample of postemergency department visit interviews with a same-race interviewer, people responded to open-ended questions reflecting on the decision to seek emergency department care. As applied to diabetes education, positioning theory explains that people use their language to position themselves toward their disease, their medications, and the changes in their lives. Transcriptions were coded using discourse analysis to categorize themes. As a form of triangulation, stance analysis measured language patterns using factor analysis to see when and how speakers revealed affect, attitude, and agentive choices for action.

Conclusion—Final analysis revealed that one third of the sample exhibited high scores for positive agency or capacity for decision-making and self-management, while the rest expressed less control and more negative emotions and fears that may preclude self-management. This approach suggests a means to tailor diabetes education considering alternative approaches focused on communication for those facing barriers.

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A recent systematic review¹ reports that diabetes education can contribute to decreased emergency department visits for persons with diabetes. As an essential part of diabetes education and self-care, diabetes communication has been demonstrated to be multidimensional in nature.² To identify how communication contributes to more effective diabetes self-management and avoidable emergency department visits requires closer study by diabetes educators of less explored dimensions of patient perception and perspectives.³ This study unites diabetes education with a unique approach from social science and linguistics methodologies, combining positioning theory and stance analysis, to examine how people make sense of the practices that lead to recurrent emergency department visits. Our goal was to identify needs for more effective intervention.

Approximately 25.8 million people in the United States are living with diabetes, and health care costs for people with diabetes are 2.3 times more than costs for people without diabetes.⁴ People with diabetes have significantly higher emergency department (ED) use and costs as compared to those without diabetes mellitus (DM) and sources of payment for these visits include private insurance (39.7%), Medicaid (25.5%), Medicare (17.3%), and self-pay/uninsured (17.4%).⁵ From 1996 to 2006, ED visits increased by 32%, but those visits considered emergent remained stable over this time. Raising questions about sources of health disparities, the ED visit rate for African Americans or blacks was double the rate for whites in all age groups.⁶ (In this study, the term African Americans will be used for those who identify as African Americans or blacks, and whites for those who identify as European Americans or whites⁷).

In South Carolina, 13 039 persons were discharged from EDs with a primary diagnosis of diabetes and the average cost per visit was over \$2000 in 2008. Almost half of these visits were for treatment of uncomplicated DM, which could be more easily managed with primary care or in another ambulatory setting.⁸ African Americans compose 28 percent of the state's population⁹ but made 60 percent of these ED visits.⁸ An earlier study using medical record reviews attributed 20% of the ED visits to preventable complications of diabetes.¹⁰

At this time, no clear evidence explains this pattern of use overall or sources of racial disparities in South Carolina. Additionally, no empirical evidence has been found that explains ED use from the patient's perspective. Diabetes educators play a significant role in helping people learn to better manage their diabetes and in improving the management of diabetes across all health care settings. However, few studies provide evidence for guiding the diabetes educator and other health professionals to better understand patients' issues associated with avoidable ED use for African Americans or others with diabetes.

Research Design

Funded by National Institutes of Health through the National Institute of Nursing Research, the overall goals of the larger research project that produced this data (Grant #NIH/NINR 1 R15 NR009486-01A1) were to document and understand the factors related to ED use, the reasons for and persons influencing care-seeking by African Americans with a primary ED discharge diagnosis of ambulatory sensitive or uncomplicated diabetes, and to identify an

evidence-based explanatory model for future intervention research. The specific aims were to: (1) describe and understand the factors affecting ED use from the individual's perspective; (2) describe reasons for care-seeking behaviors by African Americans with previously diagnosed DM; 3) develop an evidence-based explanatory model of ED use by African Americans for ambulatory sensitive conditions related to diabetes. The present report describes a subanalysis within the larger study of ED use by African Americans with diabetes.

Following Institutional Review Board approval of this mixed methods study at the Medical University of South Carolina (MUSC), a purposive sample of 20 African American participants with previously diagnosed diabetes was recruited by researchers in collaboration with ED nurses. The participants completed the qualitative interviews following their visit to an academic medical center ED in South Carolina. A description of the participants is shown in Table 1.

The interviews were conducted in the home within one month of the ED visit by a same-race researcher, using an established protocol and interview guide, keyed to direct questions about how the participant recognized that some sort of diabetes-related crisis was in process, why they went to the ED, what they thought occurred during their stay at the ED, and whether the participant had been to the ED for diabetes on prior occasions. The interviews were audio-recorded, transcribed verbatim by trained research assistants, and audited for quality by the PI and one student. An analysis of these interviews using grounded theory¹¹ with dimensional analysis¹² will be reported in a later article.

The purpose of this article is to introduce a mixed method analysis that applies an approach from sociolinguistics based on positioning theory,¹³ which proposes that people position themselves as they speak about their diabetes in relation to personal cognitive schema, explanatory models, and other people involved in decision making as well as the interview. To identify such positioning, a related analytical framework called stance analysis¹⁴ was applied to transcribed data. The mixed methods nature of this analysis arises from the quantitative classification of transcribed text as linguistic categories and the subsequent qualitative interpretation of findings (explained in Methods section). The research design responds to a call within diabetes education for potential tools that can document the process of communication with therapeutic alliances and the artful science that can capture how a diabetes educator responds or should respond to patients.¹⁵

Methodology

Using Stance Analysis to Identify Patient-Centered Perspectives

The ED atmosphere may not particularly foster current emphases on the use of patient-centered motivation for diabetes management.¹⁶ However, in the current set of 20 narratives collected postdischarge, narrators do identify causal relationships connecting their frightening visit with other events in their lives as part of a coping strategy that, according to Ville and Khlal, lets them establish both coherence and meaningfulness.^{17(p1004)} Furthermore, they explain that such narratives vary according to how strongly speakers feel about particular causes, their sources, and how integrated these causes seem to be across

events.^{17(p1008)} Health care providers and diabetes educators in particular may find that features in the post-ED interview accounts identify opportunities to infuse cultural brokerage,¹⁸ motivational interviewing,¹⁹ and other potential interventions²⁰ that promote more effective selfmanagement.

At the very least, a careful study of these post-ED narratives can extend the understanding of diabetes educators concerning lay knowledge about causes of “health and illness in particular, as narratives, which have embedded within them explanations for what people do and why,” as Popay and colleagues describe.^{21(p619)} In this discussion, no claims are made that particular features lead to potential future self-efficacy among patients with diabetes post-ED visits, nor as Franzblau and Moore explain²² is the concept of self-efficacy itself portrayed as a socialized response derived from a blame-the-victim perspective. The analysis does focus on the construct of personal agency, contextualized by expressions of emotion, explanation of events and actions, and rationales for behaviors, as a concept that can offer important, even foundational, insights into post-ED narrators’ efforts to explain themselves and their behaviors to themselves and to others.

Accordingly, the stance analysis focuses on agency as concept from sociology that refers to the capability of a person or agent to achieve or act, while recognizing that humans as agents are embedded in a social world in which they are influenced by and are influencing others within the constraints of their world as they monitor their actions and the acts of others, and generate motives and rationales.²³ Extending the concept into discourse and linguistics theory, people position themselves and others in conversations and explanations as they portray assumptions, meanings, intentions, motives, emotions, and agency, or where they feel incapable.²⁴ This social ecological conception of agency differs from more narrow applications of Orem’s theory of self-care agency²⁵ in diabetes that may exclude the person embedded in a broader, more conflicted environment than the disease alone, as demonstrated in the analysis of African Americans with chronic illness.²⁶

For this purposeful sample of 20 interviews from the original study, sequential patients seen in the ED were approached for participation for this analysis to represent typical communication patterns in persons with established diabetes. Using transcriptions from the interviews, the stance analysis method was applied for a computer-supported coding for the following four dimensions of stance in talk:

- agency or personalized assignment of responsibility for actions and choices;
- opinions, commonly seen in explanation of and information about events and actions;
- rationale for explanation, with some notion of speaker’s confidence in explanation; and
- elaboration with details of personalized affect or emotion.

Stance, or how a person takes a stand toward an issue, topic, or other speaker, is a feature of language interaction frequently studied by communications²⁷ and linguistics specialists.²⁸ In communication, discourse studies, and linguistics, the idea of stance is keyed to evidentiality or where the source of information is attributed, to epistemicity or the amount of confidence

in the talk by the speaker, to appraisal or how the speaker evaluates topic and presents rationales, and to affect or the emotions invested in talk. The computer-assisted coding and the four categories (agency, opinion, rationale, affect) results from an application of 24 preidentified linguistic codes that identify how speakers categorize themselves, others, intentions, motives, and expectations in discourse. Transcripts of speakers are standardized into 100-word segments, after which 24 categories of language features are coded by an adaptation of the software package, Code-A-Text.²⁹ Coding is subjected to a principal components factor analysis, leading to the creation of numerical scales created from the factors and used to identify significance relative to the speaker's mean.³⁰ In this way, stance for each interviewee is analyzed relative only to that interviewee's production of speech. The coding enables the researcher to identify sections with constellations of features above the mean for a particular dimension throughout that person's production of speech. Though diabetes educators may not use this methodology routinely, they may collaborate on interdisciplinary teams with social or behavioral scientists who may use the method.

Findings

As an example of typical output, Figure 1 illustrates a spreadsheet for the successive sections in the interview with "Mr/Ms 43" with red signals sections significant above the speaker's mean for a particular dimension.

The four dimensions for this interview set can be considered the major themes, as seen in the following explanations.

Personalization/agency

When the speaker uses the stance of personalization/agency in this set of interviews, the speaker is disclosing private ideas and feelings—a personal concept of disease as an *it*, a thing—that needs control (underlying metaphor of wildness that emerged as an interesting example), how to recognize crisis, and how to monitor either disease or crisis on a daily basis. Some examples of personalization/agency are as follows:

- how to recognize the onset of a blood sugar change that sends one to the ED;
- use of "how I feel" as a quick check of energy, to monitor disease;
- view of the disease as an IT that typically is outside me;
- control as the crucial action (in contrast to "I can sneak my favorites/won't give up favorites"); and Stance Analysis of African Americans With Diabetes ER Visits
- roller coaster of emotions, from irritation at hassle to depression.

Elaboration/affect

When people use a stance of elaboration, they are typically giving details about some event preoccupying them. Some of the examples that were typical were as follows:

- detailed descriptions starting with the ED visit and its associations with eating and the emotions invested in descriptions of eating;

- offering details about emotions, typically fear as low to high on a scale, but always there (the invisible disease);
- revisiting sugarland (theme)—want it, eat it, don't understand it, can't find its impact, must stop cooking with it; and
- safety net has holes, details about doctor-patient interactions and difficulties.

The body parts that received focus with emotional content here most often were feet, compared to the blurred vision typically discussed in personalization/agency.

Opinions/information

When people take an opinion-giving stance, they are going to share what they think about eating, about doctors, about the disease, and about their emotions. These assertions come across as more objective or as pronouncements in identifying feelings, instead of re-experiencing them as part of their story. Because the patient has recently had a danger-of-death episode, more information leaks out in the emotionally loaded stance of personalization than in opinion.

Rationale

When people present a stance of rationale, they are explaining the “why” for choices, such as the following:

- identifying the “symptoms,” the physical feelings, though usually not what could have been associated with those symptoms biomedically; and
- who-say—they-say dynamic, a rationale for ED, giving other choices often keyed to what others, either medical personnel or, more often, family/friends, say.

Word-Level Analysis

A word-level analysis of the significant sections for each dimension was conducted, using WMatrix2,³¹ an online corpus analysis and comparison tool. The top 15 words in sections significant for agency are as follows: “I, me, my, it, you”; “and, to”; “a, the, that”; “do, was, so”; and “just, you know.” Figure 2 illustrates that causation is a key feature of this dimension, because “so” is in the top 15 words, with 122 occurrences, making .93% of all words in sections marked as significant for agency:

WMatrix includes a word-tagging feature that permits identification of themes using semantic domains. Word frequencies can identify what words speakers tend to revisit, such as “food.”

Major themes identified across the significant sections in the four dimensions could be used as an inventory to elicit concerns people with diabetes have that could lead them to seek ED treatment. These themes were identified by frequency of semantic domain and frequency of multiword expression. Figure 4 displays an inventory of statements quoted from the interviews whose themes were repeated frequently. As predominant themes, these statements could support the initiation of cognitive mapping, or motivational interviewing.

Discourse-Level Characteristics

WMatrix uses the CLAWS tagset (the tagset used for major dictionaries) to tag each word by its part of speech. Figure 5 displays the tabulation of the 15 most frequent parts of speech representing 2% or more of all speech in the significant sections of the agency dimension. This tabulation suggests a number of discourse-level characteristics in this dimension across the 20 interviewees. Not surprisingly, self-reference is the most frequent part of speech—the speaker is being interviewed about a personal experience and this dimension represents the speaker’s accounting of present and past symptoms, choices, behaviors, and intentions, which, as content or lexical nouns, represent the next most frequent part of speech. Clearly, the agency sections are notable for lexical density, which is underscored by the prevalence of prepositions and articles. Evidentiality, or where information was acquired, and from which choices were made, is marked in the agency section by the high proportion of first and third person pronouns and possessive pronouns (I, we, me, us, my, ours, mine; she/he/his/her, it, they). The high use of the second person pronoun forms (you) typifies conversational speech where a speaker monitors with phrases such as “you know” to make sure the other person is listening or to construct a temporary alignment or short-term assumption of intimacy. Verbs signal past tense actions—the person is being interviewed about a past event, and future intentions—the interviewer’s probes focus on awareness about diabetes, which is probably only beginning to develop, because the person has just been discharged from an ED visit for a perceived diabetic crisis. Coordination is achieved by “and,” which is associational linkage typical of rapid conversation, as is the frequent use of interjections. Speakers in this interview set frequently comment on their own utterances with interjections and pile up choices with “and.”

Frequency of semantic domains echoes the array of parts of speech. WMatrix uses the UCREL semantic analysis system. (For a list of publications, many downloadable, see the WMatrix site section on semantic tagging at <http://ucrel.lancs.ac.uk/usas/>). The most frequent semantic domains include pronouns, grammatical and discourse particles, cautiousness, food, future time, medicines, and cause-and-effect. When compared with a general spoken corpus from the British National Corpus,³² the 100 million word-collection of words used by linguists to study language, there were strongly significant differences between the two, using log-likelihood ratios. The Agency sections were significantly higher in the following: medicines and medical treatment, money, disease, food, cause and effect, being alive, and not understanding. These semantic domains also index the major themes underlying the concerns voiced and revoiced in the interviews, which are noted in the common statements (Figure 4). The concerns are linked to the state of knowledge and the psychosocial mediators affecting the choice of behaviors in the analytical framework for diabetes self-management education interventions,³³ illustrated in Figure 6.

A cluster analysis with a series of scattergrams was conducted for scale score combinations in the four stance factors. The analysis found that in the scattergram showing the greatest significance, six of the participants were strongest and most informative in the top right quadrant representing the combination of agency with affect (details and feelings). In Figure 7, numbers on the axes represent scaled significance above the mean, with quadrants representing areas of high and low affect and agency. That is, the six participants in the top

right quadrant had the greatest number of sections of text that scored above the individual's mean and above the group's mean for word patterns identifying agency and also identifying affect. Such a combination is understandable when recalling that the interviews took place just after a release from the ED, which would involve high affect, and in the case of these six participants, also involved their reflections about what they could and should do to avoid future ED visits.

A secondary analysis of the significant agency and affect sections for these 6 participants examined the most highly scaled sections to identify commonalities in their communication patterns. The primary thematic focus of all these sections was participant awareness of their diabetes in terms of their self-disclosed efforts to "control" (manage, deal with, guide) the disease. Some persons voiced more willingness and efforts to control the disease. A review of semantic domains identified that personal pronouns were the predominant feature, with "I," "it," "you," "that," and "my" being the most frequent. Concordance analysis of the pronouns showed that the "I," the "my," and the projective "you" signaled the emphasis on self-disclosure and personal choices for action to the "it" of the disease. "That" indexed a list of actions or understandings. "My" was particularly interesting as its use indexed ownership of my problems in my life or for my family caused by my disease and my management of it. Of the 20 total interviews, these six people were most open to change, most aware of their role in self-management, and most positioned for the advice of diabetes educators and providers.

Results

In general, with the exception of the six just discussed, the interviewees in this set have not linked knowledge with psychosocial mediators, and are at the mercy of their beliefs and attitudes, not always related to biomedical explanations. Tailored interventions can use these observations because speakers in the set of six express concerns for knowledge acquisition and signal a strong sense of personal agency. Identifying persistent or pervasive themes across this group of interviews is useful to the extent that it can identify self-disclosed states of participant awareness about the condition, can begin to tap perceived barriers and facilitators to increasing diabetes self-management, and can ground the next steps toward the development of supportive interventions.

Implications for Diabetes Educators

In this sample, the six with high agency scores seem ready to hear information about aspects of their disease that they can handle, and to learn more about diet, exercise, foot care, and eye care. Their use of "I" and especially of "my" signal their growing readiness to own their disease. The other 14 are not yet high in agency and reflect emotional distress that may offer barriers to self-management strategies. Diabetes educators can recognize the limitations of the remaining 14 clients by their avoidance of plain statements about what they do or do not know about how they feel or what they have done in the past to recognize symptoms of trouble. Often they speak with uncertainty and hedging, shading their intentions with phrases such as "might be able to," "usually," and "should do it."

Implications

Though diabetes educators do not have the luxury of extended linguistic analysis, many of these observations parallel experience in communicating with persons who have diabetes and confirm lessons of experience. Problem-solving in diabetes self-management has been shown to be related to diabetes distress, as measured by the Diabetes Distress Scale.³⁴ The majority of those interviewed in this study (14 out of 20) identify through their speaking practices that they are not ready for effective diabetes management and have unresolved psychosocial issues regarding diabetes that result in repeated and avoidable visits to the ED. Though diabetes-related anxiety, depression, and lowered self-esteem are demonstrated to be part of the barriers that interfere with diabetes self-care,³⁵ this linguistic analysis presents the mechanisms of diabetes distress in the process of care that have received less attention. The integration of these observations for diabetes educators requires sharpening the skills of active listening in attending to the needs of people with diabetes and more focused diabetes educator-patient communication research.

Though 30 years of doctor-patient communication research in primary care provides a basis to evaluate interaction effects on decision making,³⁶ the speech practices that patients use and how diabetes educators respond to particular cues that denote minimal agency requires investigation. In this analysis, specific metaphors, rationales, and discourse related to emotional distress occur in recounting ED encounters for the 14 with low agency, but how diabetes educators respond to similar cues in practice remains to be identified. Shared decision making is advocated as essential to diabetes self-management,³⁷ yet the mechanisms that enable participatory decision making with a diabetes educator or signal the need for more effective cognitive behavioral therapy offer exciting avenues for future research.

Recommendations that Summarize How Findings Can Be Applied to Diabetes Education

In summary, effective diabetes management strategies that are socially and culturally appropriate may be more likely to be adopted, but require strategies that can be tested for tailoring care.³⁸ Diabetes educators play a significant role in working with patients and families to better manage diabetes. Active listening and recognition of verbal cues within narratives of patients better equip the diabetes educator to employ coaching techniques that encourage patient problem solving skills and a more activated patient. Furthermore, as diabetes educators become more confident in identifying and acting on cues from our clients, the clients may be more apt to selfdisclose concerns and/or problems encountered in daily self-management routines. This enhanced active listening and engaged two-way communication helps to create a milieu more open to participatory diabetes education. The commitment of the American Association of Diabetes Educators (AADE) to more patient involvement and culturally appropriate diabetes education³⁹ requires more focused communication strategies that allow diabetes educators and providers to identify the learning needs and barriers of persons with diabetes more readily in the process of care. Furthermore, the diabetes educator is uniquely positioned within interdisciplinary care teams to disseminate lessons learned to enhance patient outcomes as this evidence emerges.

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Segment	Speaker	Opinion	Rationale	Feeling	Agency	
38	61207	0.44	1.03	-0.68	0.40	#38 %: –I don't know if you under
39	61207	0.07	0.20	-0.96	-2.96	#39 %: to go there I feel embarra:
40	61207	2.96	0.39	-1.01	-2.45	#40 %: sugar. I want to say, hey,
41	61207	0.17	-0.79	-1.05	-0.12	#41 %: vitals my weight .
42	61207	1.02	-0.98	0.69	-0.45	#42 %: listen to the sermon and .
43	61207	1.60	-1.36	3.91	-0.14	#43 %: I'm sorry, I didn't mean to
44	61207	-0.79	-1.16	0.67	-1.43	#44 %: that's going. When I get t
45	61207	1.32	-2.03	1.64	1.63	#45 %: and talk to the head docto
46	61207	0.84	-0.05	-0.41	-0.49	#46 %: talking when I tell him abo
47	61207	-1.65	0.88	0.75	0.23	#47 %: And even though my husb
48	61207	-0.96	-0.22	0.62	0.63	#48 %: Why is my sugar always s
49	61207	-0.66	0.06	-0.61	-0.70	#49 %: I started out being a diabe
50	61207	-0.22	-0.35	-1.54	-1.11	#50 %: whether he was being dis
51	61207	-0.11	-0.64	-0.01	0.36	#51 %: . . . (pause for call to husb
52	61207	-1.35	-0.54	-0.71	1.23	#52 %: provider. For what? We
53	61207	-0.40	0.60	-0.76	-0.47	#53 %: take Avandia I ha
54	61207	-0.25	1.27	-0.42	2.08	#54 %: I . . . have un, uncontrolla
55	61207	0.39	-3.30	2.99	1.65	#55 %: Yes, ma'am. A lot . . . It

Figure 1.
Example of segments color-coded to display scale significance.

Figure 2.
Top 15 words in the agency dimension.

Figure 3.
Types of food discussed across all four dimensions.

This disease has a life of its own
I want my doctor to listen to me better
Rice and potatoes aren't bad for you like sugar is
I never know where and when my disease will get me
I can track my condition by how I feel on any given day
My family and friends monitor how I look and act
I have to control this disease no matter what it tries to do to me
A little bit of sugar is OK for me
There's always a worry in the back of my mind
The ER is the best place for me to go if I suddenly feel bad

Figure 4.
Common statements.

Part of speech	Tokens	% of whole	Explanation
PPIS1	1081	8.24	personal pronouns 1st person
NN1	995	7.58	content nouns
VV0	735	5.60	base form of verb
II	497	3.79	preposition
VVI	495	3.77	infinitive
CC	485	3.69	coordinating conjunction
PPH1	451	3.44	personal pronouns 3rd person
UH	446	3.40	interjections
JJ	441	3.36	adjective
PPY	425	3.24	personal pronouns 2nd person
APPG	318	2.42	possessive pronouns
AT	313	2.38	article
VVD	287	2.19	past tense
NNU	284	2.16	measurement
TO	262	2.00	infinitive marker

Figure 5.
Top 15 parts of speech in significant agency sections.

Figure 6.

Analytical framework for diabetes self-management education interventions (DSME) by Norris et al.³³ Reprinted from *American Journal of Preventive Medicine*, 22 (4 Suppl), Norris S, Nichols P, Caspersen C, Glasgow R, Engelgau M, Jack L, Snyder S, Carande-Kulis V, Isham G, Garfield S, Briss P, McCulloch D. Increasing diabetes self-management education in community settings: A systematic review, pp. 39-66. Copyright 2002, with permission from Elsevier.

Figure 7.
Affect by agency.

Table 1

Overview of Participants

Participants (n = 20)	Race/Ethnicity	Age Range in Years	Years With Diabetes	Persons Living in Household	Household Income Per Month	Insurance Status ^a
Females (n = 12)	African American	30-88	3 weeks to 36 years	1-6	\$800-\$8000	None (n = 5)
Males (n = 8)						Medicare or —Medicaid (n = 10) Private Insurance (n = 7)

^aTotal may add to >20 as some participants had >1 type of insurance.