

Influences on Day-to-Day Self-Management of Type 2 Diabetes Among African-American Women

Spirituality, the multi-caregiver role, and other social context factors

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OBJECTIVE — Many African-American women are affected by diabetes and its complications, and culturally appropriate lifestyle interventions that lead to improvements in glycemic control are urgently needed. The aim of this qualitative study was to identify culturally relevant psychosocial issues and social context variables influencing lifestyle behaviors—specifically diet and physical activity—of southern African-American women with diabetes.

RESEARCH DESIGN AND METHODS — We conducted 10 focus group interviews with 70 southern African-American women with type 2 diabetes. Group interviews were audiotaped and transcripts were coded using qualitative data analysis software. A panel of reviewers analyzed the coded responses for emerging themes and trends.

RESULTS — The dominant and most consistent themes that emerged from these focus groups were 1) spirituality as an important factor in general health, disease adjustment, and coping; 2) general life stress and multi-caregiving responsibilities interfering with daily disease management; and 3) the impact of diabetes manifested in feelings of dietary deprivation, physical and emotional “tiredness,” “worry,” and fear of diabetes complications.

CONCLUSIONS — Our findings suggest that influences on diabetes self-management behaviors of African-American women may be best understood from a sociocultural and family context. Interventions to improve self-management for this population should recognize the influences of spirituality, general life stress, multi-caregiving responsibilities, and the psychological impact of diabetes. These findings suggest that family-centered and church-based approaches to diabetes care interventions are appropriate.

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Diabetes is a complex, serious, and increasingly common disease that disproportionately affects minority populations in the U.S. (1). African-American women represent one of the highest-risk groups in terms of prevalence and disease burden (1,2). Moreover, increased rates of complications as a result of diabetes among African-Americans (especially women) have been attributed to poor glycemic control

(3–5). With results from the U.K. Prospective Diabetes Study confirming that metabolic control in type 2 diabetes reduces the rates of microvascular complications (6), there is the potential to reduce the negative impact of diabetes through improvements in self-care behaviors that lead to improved glycemic control.

Recognition of diabetes as one of the most challenging chronic illnesses to manage has led to a dramatic increase in diabetes research focused on behavioral and psychosocial issues (7). Based on available, though limited, quantitative data specific to minority populations with type 2 diabetes, it has been suggested that factors such as culture, ethnicity, socioeconomic status, and psychosocial factors (including social support, self-efficacy, coping skills, and barriers to self-care) play a significant role in explaining certain self-care behaviors and outcomes (8–11). Qualitative research has provided some additional information on the many psychosocial factors influencing the self-care behaviors of African-Americans with type 2 diabetes (12–14). Although these data identify a number of important sociocultural and psychosocial influences on self-management behaviors, and particularly dietary behaviors, it is also important to have information on the relative importance of these factors and how they are manifested in day-to-day living of particular groups of African-Americans. In our efforts to design a culturally specific diet and physical activity intervention for southern and mostly rural African-American women with diabetes, we used focus groups to obtain a more detailed conceptualization of how selected psychosocial variables influence self-management behaviors given the social context in which the behaviors occur.

The aim of this qualitative study was to identify how culturally relevant psychosocial issues and social context variables influence lifestyle behaviors—specifically diet and physical activity—of southern African-American women with diabetes. Using an exploratory approach, we also sought to gain insight into the everyday reality of living with

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Abbreviations: QSR NUD*IST, Non-Numerical Unstructured Data; Indexing, Searching, and Theorizing.

A table elsewhere in this issue shows conventional and Système International (SI) units and conversion factors for many substances.

Table 1—Code categories and text pattern searches used for analysis

Spirituality/religiosity	Role of religious beliefs and practices in living with diabetes
Diabetes impact	Influences of diabetes and its complications on the physical, social, and psychological aspects of everyday life
Multi-caregiver role	Feeling of responsibility for providing emotional and/or tangible aid to family and friends; role of “social supporter”
Stress	The amount and sources of perceived diabetes-related and general life stress
Coping styles	Coping strategies (e.g., optimistic, fatalistic, evasive, self-reliant, emotive, and palliative) used in response to perceived stress
Social support	Type, source, and evaluation of perceived help or support
Text pattern searches	
Term	
	God Jesus Lord Bible church
	Tired
	Careful watch (relative to diabetes self-management)
	Worry

diabetes from the shared perspective of a group of southern African-American women.

RESEARCH DESIGN AND METHODS

Participants

African-American women with a diagnosis of type 2 diabetes for >1 year were invited to participate in the focus group discussions. Convenience samples were recruited from a university-based outpatient internal medicine practice (serving many patients from rural communities) and from community centers in urban and rural communities with a large number of African-American residents. In the university setting, patients were invited to participate in a scheduled focus group after obtaining permission to do so from the primary care provider. In the community setting, participants were recruited through posted flyers. The community representative listed on the flyer made the initial contact and provided a list of interested individuals to the study staff.

The Institutional Review Board at the University of North Carolina approved protocols for recruitment and conducting the group discussions. Written informed consent was obtained from each participant before the focus group discussion.

Data collection and analysis

A series of 10 focus group discussions was held over a 5-month period. Each group discussion was scheduled for 90 min with participants receiving \$20 cash payment at the end of the discussion. All group discussions were facilitated by trained and

experienced African-American moderators. A co-moderator responsible for taking notes and audiotaping the discussion was present at each focus group.

Demographic data were collected with a 3-item questionnaire administered at the beginning of the group discussions in community settings. For participants in the university setting, demographic information was obtained from medical records. Collection of demographic data was deliberately limited to foster an informal atmosphere and reduce any apprehension about participating in an unfamiliar research process. Income and education data were not collected because of potential sensitivity.

Topics for the group discussions focused on psychosocial issues related to general diabetes self-care, dietary and physical activity behaviors, and suggestions for developing a community diabetes advisor or peer counselor program component for the diabetes intervention. Of particular interest were issues of social support, self-efficacy, stress, coping, and quality of life (as influenced by the impact of diabetes). In developing the moderator guides to address these issues, we explored how diabetes impacted participants' lives through questions about general life satisfaction and ways in which diabetes interfered with family life. Questions about social support targeted who provided support, the type of support given, and support-seeking behaviors. Social support was also the main focus in the discussions about the role of peer counselors. Diet and physical activity behaviors were explored relative to barriers

and perceived self-efficacy, and the discussion about stress was linked to strategies for coping. For some topics, visuals and scenarios were used (e.g., a stress ladder to assess perceived level of stress and scenarios describing the life of someone with diabetes, to discuss problems experienced and ways to cope).

After each focus group, the moderator and co-moderator reviewed discussion notes, and the audiotapes were transcribed. Transcripts were independently reviewed by 3 research staff members (C.D.S.-H., S.W.H., A.H.S.) who noted major themes and trends among the group responses. A list of recurring themes was generated by consensus among the reviewers. From this list, the dominant themes were selected, and a system of nodes or code categories (Table 1) was derived for further exploratory and interpretive analysis using QSR NUD*IST (Non-numerical Unstructured Data: Indexing, Searching, and Theorizing; Sage, Thousand Oaks, CA) qualitative data analysis software (15). In QSR NUD*IST, nodes are created to store the results of searching the text. Each node may consist of a single code or a category of codes specified in a hierarchical manner. For example, the code category “social support” included subcategories for the “type” of support—instrumental (tangible aid and services), emotional (sympathy, love, or caring), informational (advice or information), and appraisal (information for self-evaluation) (16); “sources” of support (family, friend, church, etc.); and “evaluation” of the support given (positive or negative).

Code categories (Table 1) were determined from both inductive (“up” from the data) and deductive (“down” from project designs and theories) approaches (15). Code categories emerging from the data included “spirituality/religiosity,” “diabetes impact,” and the “multi-caregiver role.” Categories for “stress,” “coping styles,” and “social support” were deductively determined. After titles and definitions for each code category were specified, 2 reviewers (C.D.S.-H., A.F.I.) coded the transcripts.

Analysis of participant responses also included text pattern searching, a method of coding transcript text by identifying all occurrences of related words and/or phrases. Retrievals from this type of search can be examined to describe the context in which frequently occurring words or phrases were used. Table 1 includes a list of text pattern searches used in our analysis.

Table 2—Participant characteristics

Age range distribution (years)	
Total	65* (100)
≤35	2 (3)
36–45	6 (9)
46–55	15 (23)
56–65	22 (34)
>65	20 (31)
Duration of diabetes (years)	
Total	60* (100)
<5	21 (35)
5–10	14 (23)
>10	25 (42)
Treatment	
Total	61* (100)
Diet only	7 (11)
Insulin	26 (43)
OHAs	27 (44)
Insulin and OHAs	1 (2)

Data are n (%). OHA, oral hypoglycemic agent.
*Missing data: age (n = 5), diabetes duration (n = 10), and treatment (n = 9).

After reports were generated for each code category, 5 reviewers—2 dietitians (C.D.S.-H., A.F.I.), a diabetes nurse practitioner (A.H.S.), a health educator (E.J.J.), and a social psychologist (S.W.H.)—summarized their interpretations of each code category in a set of consensus statements. To facilitate culturally sound interpretations, 4 of the 5 reviewers were African-American women and 3 were from the south.

RESULTS — A total of 70 African-American women with type 2 diabetes participated in 10 focus group discussions. We conducted 7 group discussions at the university-based site and 3 at community centers. The average group size was 5 in the university setting and 10 at the community sites. Most participants (65%) were >55 years of age and had diabetes for ≥5 years. Similar proportions of participants were treated by oral hypoglycemic agents (44%) and insulin (43%) (Table 2). With the exception of participants at the urban community center, most participants were from rural communities.

The emerging themes are presented by code category in Table 3. Results of the text pattern searches are presented within the context of the related code category (e.g., text searching for “God” and related terms is presented with “spirituality/religiosity,” “tired” and “watch/careful” with “diabetes impact,” and “worry” with “stress.”

Spirituality/religiosity

The role of spirituality/religiosity was explored by searching the text for occurrences of the words “God,” “Jesus,” “Lord,” “church,” and “Bible.” From a contextual point of view, these terms were used in discussing health, life satisfaction, social support, coping techniques, and stress management. Respondents mentioned “God” and related terms in the context of their health—thanking God for the health they have even with diabetes and for taking care of their diabetes (particularly for disease treatment without having to use needles/insulin). “Church” was mentioned in terms of enjoyment and life satisfaction (i.e., being able to participate in church activities or simply attend church services). “Church,” “God,” and other related terms were also mentioned in describing sources of social support and techniques for coping. Reading the Bible and talking to God were strategies used to cope with daily hassles and stresses. Participants mentioned asking God for help in controlling diabetes, and when faced with difficult problems (related and unrelated to diabetes), they would “turn it over to the Lord.” Church members and pastors were described as additional sources of emotional support.

“...I’ve had 3 heart attacks. I just ask God to give me strength to do the things that I have to do. Sometimes I think if I would stop and sit down long enough, I would die. But I’m thankful for having God on my side.”

“My main doctor is Dr. Jesus.”

“...I just said, Lord, I didn’t know I had it [diabetes]. But, if it’s your will, let me go

back tomorrow and my blood sugar be down. ... I went back the next day and it was down to 200, and my doctor said “What did you do?” I said, “The Lord did it.”

Spirituality/religiosity was a main theme in all focus groups. Participants reported that God plays a central role in providing the strength to deal with daily challenges, including those associated with diabetes. Their spirituality was seen as a source of emotional support, a positive influence on health, and contributing to life satisfaction.

Diabetes impact

The impact of diabetes was expressed in both physical and psychological terms. Many reported feeling physically tired and sometimes physically sick. Feeling physically sick was often associated with having other chronic conditions such as hypertension, heart disease, and arthritis. The psychological impact of diabetes was stronger and emerged as feeling “nervous” and “tired,” “worrying” about diabetes complications, and feelings of dietary deprivation.

“When I think about the people that ...already have diabetes and they lose their limbs, you know. Sometimes I get kind of numb, my legs. And I’m worried am I next. It bears on your mind a lot.”

“...if I don’t have me some sweet, I go out of my mind. I wake up all through the night. I guess it’s this sugar [diabetes].”

The importance of being careful when you have diabetes, particularly with your feet, and watching your diet was revealed in the text pattern search of “watch/careful.”

Table 3—Summary of emergent themes

Psychosocial issue/code category	Emergent themes
Spirituality/religiosity	Spirituality and religiosity as significant factors in coping and emotional support
Diabetes Impact	Impact of diabetes expressed as fear of suffering, deprivation (diet-related), and a physical and emotional “tiredness”
Multi-caregiver role	Care-giving responsibilities to multiple family members as a significant stressor and potential barrier to self-management
Stress	General life stress as a major barrier to diabetes self-management Stressors were related to life stage, a multi-caregiving role, and health (including fear of diabetes-related suffering)
Coping	Several styles of coping used, with reliance on God and prayer as the most significant
Social support	Significant emotional and instrumental support from daughters God as a source of emotional support

Several participants mentioned being “tired,” “worn out,” or “fatigued.” This tiredness stemmed from 3 sources. There was tiredness related to having diabetes or taking insulin daily, a physical tiredness resulting from being overworked at home and/or on the job, and stress-induced tiredness related to worrying. In many instances, >1 source was contributing to the overall tiredness, and there was an apparent lack of awareness of why diabetes was associated with being tired. Being tired seemed to be viewed as a symptom of having diabetes in general, rather than a sign of poorly controlled diabetes.

Multi-caregiver role

The multi-caregiver role is a term coined by the transcript reviewers to describe the feeling of responsibility for providing emotional and/or tangible aid to extended family members and friends. Care was generally provided to homebound parents and adult children and grandchildren living in the home or spending extended periods of time there. Emotional support was provided to family members and friends who came seeking advice or just wanted someone to listen to their problems. This role of social supporter was generally described in the context of stress or barriers to appropriate self-management behaviors (particularly lifestyle behaviors of diet and physical activity). With the increased level of responsibility, many described themselves as tired, both physically and psychologically. They also believed the added stress and pressure made their diabetes go out of control.

“What causes me a lot of problem, gets my nerves out of shape and cause my diabetes to flare up [is that] I live around family. And they come to my house, you know, and everything... when they get off the school bus, here they come. When they get out from work, here they come.”

“They look for me to do it all, and you get tired. You don't have the vim. I say ‘hey!’ I'm the one sick, and ya'll look for me to pick up and do all the cooking and washing and all. And then they don't like the way I cook the food. ‘I don't want no baked chicken.’ I said well, I can't cook it the way ya'll want it because my will power is not that strong. If I cook it, I'll eat it.”

“... they'll usually call me because they live out of town. And I'll relax, sort of meditate, say dear Lord, please help me through this because I know why they're coming to me.

And they don't mean to burden me, but it's me. It's me letting that happen. And people can't get on your back if you don't bend over. So I just sort of get that extra strength to deal with them.”

Stress

Women in the focus groups described a considerable amount of stress in their lives, with the majority not related to diabetes. We identified 3 categories of stressors: stress related to life-stage, multi-caregiving, and health. Women of various ages or stages in life (e.g., child-bearing age, retired, etc.) had varying levels and sources of stress. Women who described themselves as retired and/or living alone reported little to no stress, whereas working women and those caring for other family members mentioned many stressful situations. Work-related stress was associated with shift-work, multiple jobs, and stressful work environments. Probably the biggest source of stress for many participants was the stress associated with caring for family members (the multi-caregiver role). Contributing to this type of stress was the apparent lack of empathy from family members. The diagnosis of diabetes did not seem to translate into reduced expectations from family members in terms of performing physical tasks related to caregiving or an increased amount of emotional support from family members.

Health-related stress was also described in terms of “worry” and fear of being sick or “suffering” from diabetes, and feeling “tired” or “nervous”:

“Sometimes I sit around and think about some of the things that could happen because I have a brother with diabetes with no legs. And then I had a brother that died with diabetes because he didn't follow the instructions like he was supposed to.”

“I just worry about having sugar because you do have to be real careful. So it's kind of like a sickness. At times I'm just nervous... It's like a heavy burden.”

“By being diabetic... I guess I get nervous a lot. I get tired more easily now than I did earlier on.”

Coping

Focus-group participants acknowledged using a variety of coping styles in dealing with the stress in their lives. The more frequently used coping styles were self-reliant (dependence on self rather than others: for example, keeping feelings to oneself) and

prayer/God-reliant (relying on God to take care of the problem or situation: for example, turned the problem over to God).

“A lot of what's my stress I've taken on myself, and it chokes me sometimes. And sometimes I get by myself and I cry it out rather than talk it out.”

“...when I get to the place where I can't handle it, I usually turn it over to the Lord.”

“When I get something I can't handle, I usually sit down and pray or either walk through the house and pray. Sometimes I go through the house just thanking the Lord for what He done done.”

Social support

The most frequently mentioned source of instrumental support in “getting things done” was daughters. Daughters and other adult female family members or friends were also the main providers of support in diabetes-related care, such as giving reminders to take medication and to follow diet plans, helping with housework when the participant was sick, and providing transportation to doctor's appointments. For emotional support, women relied heavily on their relationship with God.

“God is always there. I talk to him when I don't have nobody else to talk to.”

CONCLUSIONS — Several important and unanticipated findings were revealed in this study of southern African-American women. Our findings relative to the multi-caregiver role and the symptom of “tiredness” are 2 of the more unexpected and rather complex issues. Being tired was attributed to multiple causes including general life stress, physical overexertion, and diabetes. Diabetes-related tiredness was described in terms of its psychological impact through fear and worry, and, surprisingly, attributions were not made to poor diabetes control. These attributions not only suggest some deficits in diabetes knowledge, but may also signal a need for probing on the part of healthcare providers when patients report being tired. Moreover, if the response to tiredness is “rest,” there may be implications for behavior changes in physical activity.

The multi-caregiver role represents another complex sociocultural factor influencing diabetes self-management. With the expectation that the family should function as an extended unit, provision of

tangible support by parents and grandparents seems to be a cultural and personal expectation held by family members. When several family members or friends need help, this multi-caregiver role places enormous pressures on the women that may interfere with appropriate self-care (particularly lifestyle behaviors). In the context of a large extended family network, size does not necessarily translate into more (or positive) support.

The complexity of the multi-caregiver role lies in the delicate balance between the positive and negative aspects of the role. Attempts to reduce the barriers to self-care associated with the role should also consider the psychological impact of a diminished role (e.g., the woman who says no to family members seeking help may later feel guilty for doing so). One possible approach is to teach patients how to help rather than focus on decisions about whether to help.

Religious beliefs and practices played a very prominent and positive role in the lives of the women and were related to issues of life satisfaction, coping, and emotional support. Although the role of religious beliefs and practices in coping, social support, and health protection among older African-American women has been described (17–19), the way in which spirituality was integrated into the lives of these women suggests a level of importance that is not generally appreciated. Our findings relative to spirituality and the multi-caregiver role may both be related to regional factors. This prominence of spirituality/religiosity may reflect the study population's location in a Bible-belt state. Likewise, the multi-caregiver role is implicitly linked to physical proximity of family members, which may be more common in southern populations. Behaviors consistent with the multi-caregiver role have also been identified as a social barrier to diet therapy in another southern, though urban, population of African-Americans (13).

Many of our findings were consistent with data from other African-American populations. The frequent provision of social support by daughters to older, single, or widowed African-American women with diabetes (19,20) was also found in our sample. Consistent with other qualitative findings are the themes of positive and negative family support (13,14,21), diabetes-related fear and worry (21), and dietary deprivation (21).

African-American women face a number of challenges to adopting appropriate

self-management behaviors that potentially reduce the burden of suffering and death caused by diabetes. Our findings suggest the need for an ecological approach to understanding diabetes self-management behaviors. This perspective specifies that health behaviors are influenced by continuous interactions of intrapersonal factors with the social and cultural environment (22).

From an ecological perspective, these findings suggest that emphasis on the family and the role of the church within the social and cultural context may be important to understanding and improving self-management behaviors among southern and more rural African-American women. Using a family framework for understanding diabetes self-management integrates characteristics of the patient, characteristics of the patient–healthcare provider relationship, and stresses that affect disease outcomes from the perspective of a family context of care (23). This shared social context is linked to disease management such that instead of educational interventions targeting the family member with diabetes, they are directed at relationships within the family structure (23). Application of this approach begins with an evaluation of family factors such as those described in this study (e.g., type of family relationships, stresses of family members, etc.).

Our findings also have implications for interventions incorporating a role for the church community. This role would not only address issues of social support and spirituality in patients' self-care, but would also serve as a means to educate patients, their families, and the community about improving diabetes management. Participation of the church community in diabetes care provides a component well suited for addressing the sociocultural issues influencing diabetes self-management.

Qualitative research methodology was used to expand our understanding of the sociocultural context in which diabetes self-care occurs and its influences on self-management behaviors. Our use of analytic software made it possible to explore more thoroughly the nature of and the interrelationships among psychosocial factors. Although our findings may be applicable to other southern and predominantly rural African-American women, such generalizations should be made with caution. These data are best used to generate hypotheses for a more integrated framework of understanding diabetes self-management.

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References

1. Carter JS, Pugh JA, Monterrosa A: Non-insulin-dependent diabetes mellitus in minorities in the United States. *Ann Intern Med* 125:221–232, 1996
2. Harris ML, Flegal KM, Cowie CC, Eberhardt MS, Goldstein DE, Little RR, Wiedmeyer H, Byrd-Holt DD: Prevalence of diabetes, impaired fasting glucose, and impaired glucose tolerance in U.S. adults. *Diabetes Care* 21:518–524, 1998
3. Bell RA, Summerson JH, Konen JC: Dietary intakes by levels of glycemic control for black and white adults with non-insulin dependent diabetes mellitus (NIDDM). *J Am Coll Nutr* 14:144–154, 1995
4. Weatherspoon LJ, Kumanyika SK, Ludlow R, Schatz D: Glycemic control in a sample of black and white clinic patients with NIDDM. *Diabetes Care* 17:1148–1153, 1994
5. Wisdom K, Fryzek JP, Havstad SL, Anderson RM, Dreiling MC, Tilley BC: Comparison of laboratory test frequency and test results between African-Americans and Caucasians with diabetes: opportunity for improvement. *Diabetes Care* 20:971–977, 1997
6. American Diabetes Association: Implications of the United Kingdom Prospective Diabetes Study. *Diabetes Care* 21:2180–2184, 1998
7. Cox DJ, Gonder-Frederick L: Major developments in behavioral diabetes research. *J Consult Clin Psychol* 60:628–638, 1992
8. Fitzgerald JT, Anderson RM, Funnell MM, Arnold MS, Davis WK, Amam LC, Jacober SJ, Grunberger G: Differences in the impact of dietary restrictions of African Americans and Caucasians with NIDDM. *Diabetes Educ* 23:41–47, 1997
9. Chipkin ST, de Groot M: Contextual variables influencing outcome measures in minority populations with diabetes mellitus. *Diabetes Spectrum* 11:149–160, 1998
10. Bell RA, Summerson JH, Konen JC: Racial differences in psychosocial variables among adults with non-insulin-dependent diabetes mellitus. *Behav Med* 21:69–73, 1995
11. Gilliland SS, Carter JS, Perez GE, Two Feathers J, Kenui CK, Mau MK: Recommendations for development and adaptation of culturally competent community health interventions in minority populations with type 2 diabetes mellitus. *Diabetes*

- Spectrum* 11:166–174, 1998
12. Anderson RM, Barr PA, Edwards GJ, Funnell MM, Fitzgerald JT, Wisdom K: Using focus groups to identify psychosocial issues in urban black individuals with diabetes. *Diabetes Educ* 22:28–33, 1996
 13. El-Kebbi IM, Bacha GA, Ziemer DC, Musey VC, Gallina DL, Dunbar V, Phillips LS: Diabetes in urban African Americans.V. Use of discussion groups to identify barriers to dietary therapy among low-income individuals with non-insulin-dependent diabetes mellitus. *Diabetes Educ* 22:488–492, 1996
 14. Maillet NA, D'Eramo-Melkus G, Spollett G: Using focus groups to characterize the health beliefs and practices of black women with non-insulin-dependent diabetes. *Diabetes Educ* 22:39–45, 1996
 15. Sage Publications Software: *QSR NUD*IST*. Thousand Oaks, CA, Sage, 1997
 16. Heaney CA, Israel BA: Social networks and social support. In *Health Behavior and Health Education: Theory, Research, and Practice*. 2nd ed. Glanz K, Lewis FM, Rimer BK, Eds. San Francisco, CA, Jossey-Bass, 1997, p. 179–205
 17. Wilson-Ford V: Health-protective behaviors of rural black elderly women. *Health Soc Work* 17:28–36, 1992
 18. Degazon CE: Coping, diabetes, and the older African-American. *Nurs Outlook* 43: 254–259, 1995
 19. Ford ME, Tilley BC, McDonald PE: Social support among African American adults with diabetes: part 2: a review. *J Natl Med Assoc* 90:425–432, 1998
 20. Chatters LM, Taylor RJ: Intergenerational support: the provision of assistance to parents by adult children. In *Aging in Black America*. Jackson JS, Chatters LM, Taylor RJ, Eds. Newbury Park, CA, Sage, 1993, p. 69–83
 21. Samuel-Hodge C, Ammerman A, Skelly A, Headen S: Diabetes-related attitudes, beliefs, and barriers to dietary adherence among African Americans with NIDDM (Abstract). *Diabetes* 46 (Suppl. 1):376A, 1997
 22. Sallis JF, Owen N: Ecological models. In *Health Behavior and Health Education*. 2nd ed. Glanz K, Lewis FM, Rimer BK, Eds. San Francisco, CA, Jossey-Bass, 1997, p. 403–424
 23. Fisher L, Chesla CA, Bartz RJ, Gilliss C, Skaff MA, Sobogal F, Kanter RA, Lutz CP: The family and type 2 diabetes: a framework for intervention. *Diabetes Educ* 24: 599–607, 1998