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Diabetes and Psychological Profile of Younger Rural African American Women with Type 2 Diabetes

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Abstract

Purpose—To describe diabetes self-care behaviors, diabetes-related distress, depressive symptoms, and diabetes-related needs among rural African American women with type 2 diabetes ages 21–50.

Methods—A cross-sectional survey, including questionnaires and a single, open-ended question, was used to assess constructs of interest.

Findings—Taking medication was the most frequently reported (5.5 days/week) self-care activity and exercise the least (3.0 days/week). Nearly half (44%) reported worrying about diabetes complications. Approximately one-third (31%) felt guilty about inconsistent self-care or fearful about living with diabetes. Seventy percent had a depression score suggestive of significant depressive symptomatology. Most diabetes-related concerns were about diet (34%) (i.e., what to eat), exercise (30%), taking medications (10%), and finances (8%).

Conclusions—Future research should explore specific diabetes self-care barriers/enablers and interventions should provide women with diabetes education, barrier management, and psychological support. Innovative delivery strategies are needed to provide this support in resource-limited rural communities.

Keywords

Diabetes self-care; African American; women; diabetes; rural; depression

Diabetes-related complications are some of the leading causes of death and disability among African American women.[1] Diabetes self-care is essential in reducing the likelihood of poor diabetes outcomes; it encompasses a complex regimen including blood glucose self-monitoring, healthy eating, incorporating a regular program of physical activity, and taking anti-hyperglycemic medications.[2] For rural African American women with type 2 diabetes, performing these diabetes self-care activities is made more challenging by limited access to comprehensive diabetes care services and relevant community-based resources such as places to purchase healthier food or to walk safely.[3]

Previous research addressing the burden of type 2 diabetes among rural African women has largely focused on older women.[4,5] This focus is due, in part, to the higher prevalence of diabetes is in individuals 65 years of age and older.[6] Moreover, in addition to the physical manifestations of the aging process, older adults with type 2 diabetes typically have comorbid illnesses that negatively affect diabetes self-care.[7] Women younger than 65, however, may also have experiences that affect diabetes self-care. Such experiences include

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being a primary caregiver and working.[8] Hence, there is also a need to address the factors that affect diabetes self-care in younger rural American women with type 2 diabetes. This study addresses this line of research by first assessing diabetes self-care behaviors and needs among this understudied group in order to fill a research gap.

People with type 2 diabetes are at increased risk of depression compared with people in the general population.[9] In addition, depression mediates poor diabetes outcomes, such as treatment nonadherence.[10] For African Americans, women in particular, depression is less likely to be identified and treated, when compared with non-Hispanic White adults.[11] In addition, for lower-income African American women, depression is often attributable to life factors such as traumatic events, daily stress, health problems, and unhealthy coping.[12] Moreover, among rural African Americans with type 2 diabetes, depressive symptoms explain the influence of financial distress, community disadvantage, and educational attainment on blood glucose control.[13] Given these facts, it is important to gain an understanding of psychosocial and psychological constructs among rural African American women with type 2 diabetes. Therefore, in addition to diabetes self-care behaviors and needs, this study assesses diabetes-related distress and depressive symptoms among rural African American women with type 2 diabetes.

Methods

Setting

The Meharry Medical College Institutional Review board approved the study. Over an eight-month period, participants were recruited from two rural community health centers (CHCs) in Mississippi, as designated by U.S. Census guidelines for *rural*.[14] Both centers provide comprehensive health care services predominately to African American clientele.

Subjects

Eligible participants were African American females receiving care in one of the two rural CHCs, between 21 and 50 years of age, able to read and write, and with a clinical diagnosis of type 2 diabetes for at least six months. A research nurse identified eligible patients from the respective CHC central diabetes databases and mailed invitation letters to those patients. If patients had not responded to the invitation letters within a two-week period, the research coordinator made up to two follow-up phone calls. Other recruitment methods included nurse referral during appointments, newspaper ads, and flyers.

Measures

All data were obtained used a self-report, paper questionnaire document. Body mass index (BMI) was calculated from self-reported height and weight. Results from most recent hemoglobin A1c (HbA1c) assessments were collected *via* chart review.

Diabetes self-care behaviors were assessed using The Summary of Diabetes Self-Care Activities (SDSCA) questionnaire.[15] The SDSCA was originally designed to measure five key components of the diabetes regimen: general diet, specific diet, exercise, medication taking, and blood glucose testing. The revised version used in this study includes additional questions about foot inspections and smoking.[16] Using a continuous scale ranging from 0 days to 7 days, participants indicated the number of days in the past week they engaged in: 1) eating a generally healthful diet (general diet subscale; two questions); 2) eating a diet high in fruits/vegetables and low in high fat foods (specific diet subscale; two questions); 3) physical activity for at least 30 minutes/a specific exercise (exercise subscale; two questions); 4) taking medications (one question); 5) glucose self-monitoring (glucose monitoring subscale; two questions); and 6) foot care (foot care subscale; two questions);

and 7) number of cigarettes smoked (one question). For subscales with two questions, an overall score was calculated by averaging individual item responses. For the "taking medications" question, the single item response represented the overall score. Consistent with other studies, the inter-item correlation for the "special diet" subscale was low (0.06).[16] Therefore, as recommended by Toolbert et al.,[16] the two questions were scored separately. A score of zero indicated no participation in a specific diabetes self-care activity while a maximum score of seven indicated participation every day of the week. Numbers of cigarettes smoked were scored as actual number of cigarettes smoked.

The Problem Areas in Diabetes Scale (PAID) was used to assess diabetes-related distress.[17] This 20-item scale assesses the degree to which specific components of diabetes management and/or feelings about diabetes are problematic to patients. Response options range from "0-not a problem" to "4-serious problem." The reliability and construct validity of the PAID was previously established in this participant sample.[18] A two-factor solution provided a better understanding of determinants of glycemic control and weight than the overall PAID scale. However, further research is needed to validate these findings. Therefore, in this study, we calculated PAID scores as originally proposed.[17] An overall PAID score was calculated by adding individual item responses and multiplying by 1.25. Scores range from zero (no diabetes-related distress) to 100 (high diabetes-related distress). While there are no widely utilized score cutoffs for low *versus* high levels of diabetes-related distress, a previous study categorized scores greater than 40 as high diabetes-related distress.[19] Internal consistency was high (Cronbach's alpha = 0.94) in our participant sample.

Depression was measured using the 20-item version of the Center for Epidemiological Studies Depression Scale (CES-D).[20] Each statement assesses behaviors and feelings within the last week. Response options range from "0—rarely/none of the time" to "3—most/all of the time." Possible scores range from zero (no evidence of depression) to 100 (significant evidence of depression). A score greater than 16 signals the need for additional screening for depression.[20] Internal consistency was high (Cronbach's alpha = 0.85) in this participant sample.

The Principal Investigator constructed a single open-ended question to assess specific diabetes-related needs. Participants were asked to identify, by writing in their own words, the one element of diabetes self-care management where they needed the most help.

Procedures

In each of the two study sites, CHC conference rooms served as sites for questionnaire administration. Participants completed the questionnaires either individually or in groups (two to 25 participants/group) under the direct supervision of either the study research coordinator or the Principal Investigator. Prior to administration of the questionnaires, the IRB-approved informed consent process was implemented. The average time for group questionnaire administration was 30 minutes. After completing questionnaires, each participant received a $20 general use gift card to offset participation-related expenses.

Statistical analysis

All questionnaire data were analyzed using STATA Intercooled Version 7 (STATA Corporation, College Station, TX). Means and standard deviations were used to summarize questionnaire scores. Reliability of the SDSCA subscales were assessed using inter-item correlations. Internal consistency of the PAID and CES-D were assessed using Cronbach's alpha. For the single diabetes-related needs question, individual *verbatim* statements were typed into Microsoft Excel. The Principal Investigator reviewed all statements and

developed coding categories (diet, exercise, medication-related) based on the content. The coding categories were entered into Atlas.ti (Scientific Software Development, Berlin), a qualitative data analysis software, as the coding template. The *verbatim* statements were then imported into Atlas.ti and assigned to relevant code categories. The numbers of *verbatim* statements assigned to each major coding category were enumerated and expressed as percentage of total diabetes-related needs statements.

Results

Participant characteristics

One hundred sixty women participated in the study. Seven did not meet the age inclusion criteria. One hundred thirty-five completed all SDSCA questions, one hundred thirty-one all PAID questions, and 108 all CES-D questions. For each questionnaire, demographic characteristics were comparable between those who completed all questions and those who did not. In addition, there were no differences in response between those who reported previous diabetes education and those who did not. Table 1 provides a demographic and clinical profile showing a young, low-income, obese participant group with sub-optimal glycemic control.

Diabetes self-care activities

Table 2 summarizes participants' self-reported diabetes self-care activities. Women reported they were most likely to take their diabetes medications (5.5 days/week) and check their feet (4.3 days/week) and least likely to engage in exercise (3.0 days/week) and eat high fat foods (3.2 days/week). Sixteen percent of women reported smoking over the most recent seven days (data not shown). The average number of cigarettes smoked on an average day was 7.5.

Diabetes-related distress

Responses to individual PAID items are highlighted in Table 3. Almost half of the patients (44%) reported that worrying about the future and complications was a somewhat serious or serious problem. Nearly one-third reported feeling guilty or anxious when they were unable to adhere to self-management goals (31%) or feeling fearful about living with diabetes (31%) as somewhat serious or serious problems. More than half indicated that the following were not a problem: Feeling that friends and family are not supportive of your diabetes management efforts (64%); feeling alone with diabetes (54%); and not accepting diabetes (54%). The average PAID score was 34.6±23.0.

Depression

Table 4 provides a summary of CES-D responses based on participants' feelings during the past week. Nearly half (46%) of the women reported that they "enjoyed life" most/all the time and over a third expressed being "happy" (38%) or feeling as if they were "just as good as other people" (39%) most/all the time. Thirteen percent felt "depressed" most/all the time. The average CES-D score was 20.9±9.4.

Specific diabetes-related needs

Table 5 summarizes participants' diabetes-related needs as assessed by written responses. The majority of the statements participants identified diet (34%) and exercise (30%) as areas where help was most needed. Specific dietary issues were related to uncertainty about what to eat. For instance, one participant wrote that she needed help with "… eating the right kind of food." Another expressed her diet-related needs in this way: "Eating the right food, how much of it and how often if I can just learn how not to crave the wrong food, I would just be thankful." For exercise, a general lack of motivation for initiating and/or maintaining a

regimen was a pervasive theme. The lack of an appropriate place to exercise was also a common sentiment, albeit to a lesser degree than lack of motivation. Medication adherence was also an identified area of need. Other statements (10%) reflected participants' inconsistency in taking prescribed medications or lack of understanding about how to take medicines. Participants' statements (8%) also acknowledged that finances were an area of need. For instance, relative to glucose testing strips, one participant wrote, "But, I run out of strips for my machine. They cost so much when I run out it takes a while to get more." Participants also considered the higher price of healthier foods as a barrier. Other less frequently reported areas of need (data not shown) included time management, social support, general motivation, and depression.

Discussion

The study results offer a unique and comprehensive summary of diabetes-self-care behaviors, diabetes-related distress, depression, and diabetes-related needs among rural African American women with type 2 diabetes ages 21–50. Overall, women reported moderate levels of most diabetes self-care activities but also negative diabetes-related emotions and evidence of depressive symptomatology. Diabetes-related needs were variable but were mostly related to diet, exercise, medications, and finances. These findings provide greater clarity into the type of diabetes-related support younger, rural African American women need and desire in their daily lives.

The extant literature indicates that rural locale alone can negatively influence diabetes health-related practices and outcomes. [21,22] However, information about enablers of diabetes self-care is limited. Based on SDSCA responses in this study, our data show that women were able to engage in all measured diabetes self-care activities at least three out of seven days with medication-taking being reported most frequently (5.5±2.4 days) and exercise least frequently (3.0±2.1). While it is indeed important to help women with barrier management, these findings suggest that something was working for these women at least three days out of the week. Given the importance of every diabetes self-care behavior in reducing the risk of diabetes-related complications and deaths,[23] it is important to understand any enablers for diabetes self-care activities. This is particularly important among those at highest risk for complications and deaths such as African American women.[24] Future research should include an exploration of enablers as well as barriers to self-care among younger rural African American women with type 2 diabetes. It is noteworthy that the same diabetes self-care trend reported here, medication-taking on most days and exercise the least amount of days, emerged for urban African American women with type 2 diabetes.[25] These similarities, in the midst of geographical differences in diabetes-related resources, suggest that there are common factors that influence diabetes self-care in African American women regardless of where they live. This observation further suggests that supporting diabetes self-care behaviors of rural African American can have a measurable impact on diabetes self-care behaviors and outcomes, even in the presence of known access- and availability-related geographical barriers.[3]

The PAID analysis showed that diabetes-related negative emotions were reported as the most serious problems. Previous psychometric evaluation of the PAID in this same patient group showed that PAID survey items such as worrying about complications or feeling scared or depressed loaded on a "Negative Emotional Consequence of Self-Care Implementation" subscale.[18] This subscale was positively correlated with depressive symptomatology and negatively correlated with diabetes self-care behaviors in a statistically significant manner. In combination with the results presented here, these data suggest that negative diabetes-related emotions among younger, rural African American women with type 2 diabetes potentially affects overall emotional health and diabetes self-care efforts.

This information supports the relevance of identifying, testing, and implementing methodologies that provide young, rural African American women with type 2 diabetes with emotional and psychological support as part of behavioral research interventions.

The average PAID score of 34.6±23.0 was comparable to levels in other groups of African American women with type 2 diabetes where mean scores ranged from 33.4[26] to 49.3.[23] Scores for urban African women in another study were much higher (PAID score = 72 type).[25] Among urban African Americans in another study (74% female), the score was much lower (PAID score = 15).[27] This variability in PAID scores suggests that there may be specific factors that might affect variation in individual PAID item responses and overall scores. Therefore, future research should explore such factors (specifically, demographic characteristics, and perceived importance or relevance of each PAID question) among younger, rural African American women with type 2 diabetes. Moreover, though cutoff levels for low *versus* high PAID scores were not originally proposed,[17] a recent study categorized scores greater than 40 as high.[19] Using this criterion, 40% of the women in this study exhibited high levels of diabetes-related stress. This further underscores, as noted previously, the need for identifying and applying relevant emotional and psychological support mechanisms in the realm of diabetes self-care management among younger rural African American women. Given the difficulty of recruiting mental health professionals to rural settings,[28] alternative forms of support may be helpful (e.g., diabetes support groups).

The CES-D analysis revealed that many women exhibited characteristics of good emotional health during the week prior to study implementation. However, the average CES-D score of 20.9 was beyond the cutoff of 16, which signals the need for further screening for depression.[20] Moreover, 70% of all women had a CES-D score that exceeded this cutoff. A study involving urban and rural African American female caregivers[29] (mean age of 54 years) revealed an average CES-D score of 8.99±8.32 with 18% of women having scores greater than the cutoff for significant depressive symptomatology. In another study involving older African Americans[30] (75% women, mean age of 74 years), the average CES-D scores was 7.99±7.95 with 14% of all participants having a score greater than the high depressive symptomatology cutoff. Therefore, by comparison, the younger, rural African American women in this study exhibited higher depressive symptomatology. Independently, a pronounced prevalence of depression among people with type 2 diabetes has been established.[9] Moreover, depressive symptomatology mediates the effect of socioeconomic status on blood glucose control among rural African Americans with type 2 diabetes.[13] Therefore, diabetes self-management support for younger rural African American women should include not only routine screening for depression but accessible methods for treatment. Alternative strategies for diagnosing and treating depression may be needed (e.g., questionnaires for screening and referral mechanism for treatment) in rural communities.

The addition of the “diabetes-related needs” question provided the women in this study an opportunity to express their needs in their own words, something that would not have been possible using the questionnaires alone. Though the majority of the needs were specifically related to diet, exercise, medication adherence, and finances, the related statements represent two overarching categories. First, a need for education on certain topics was evident in comments about diet and medication (e.g., not knowing what foods to eat, not knowing how to take medication). Second, the need for increased availability of and/or access to diabetes self-care resources was also pervasive (e.g., no place to exercise, high cost of diabetes supplies). Both categories of need are consistent with other research in southern rural African American women.[31] Our data suggest that education and access-related factors play a major role in women’s ability to initiate and maintain daily diabetes self-care; though these data do not minimize the importance of less frequently mentioned factors (e.g., general lack

of motivation). In reference to health care in rural communities, a rural health care provider noted that, "Patient education is one of the strongest tools we have in our armamentarium for controlling disease."[32] Though there has been some success in remedying health care professional shortages in rural communities,[33,34] the persistence of these shortages[35] limit the availability of health care professional-mediated diabetes education. Therefore, it remains an important task to identify cost-effective and sustainable ways to deliver basic diabetes education in rural areas. Moreover, diabetes education involves imparting knowledge about the resources needed to engage in diabetes self-care (e.g., glucose self-monitoring supplies). For this reason, it is also important to explore and develop strategies for helping younger, rural African American African women manage access-related barriers and direct them to relevant community-based resources, where applicable. Feedback and input from younger, rural African American women with type 2 diabetes should inform the development and implementation of such strategies.

Our study has both limitations and strengths. Though our data provide a unique diabetes self-care and psychological profile of young, rural African American women with type 2 diabetes, the cross-sectional nature of survey implementation does not allow for causality assumptions. Though the majority of participants were 40 and older, the wide overall age ranges and the smaller sample sizes for younger age categories limit a rigorous comparison of diabetes self-care and psychological between women of different age groups. Moreover, the seven-day time anchors used in the SDSCA questionnaire and CES-D scale limit the ability to determine whether reported patterns represent typical self-care and depression profiles for women. Though self-report data has inherent limitations,[36] the measures used in this study were previously validated in the exact participant group surveyed here.[37] Further, Cronbach's alpha estimates for the PAID and CES-D, as noted above, suggest a high degree of reliability. Our recruitment efforts and study design are noteworthy. We successfully recruited African American patients, a group that is often perceived to be hard to reach.[38] Moreover, we were able to recruit patients from rural locales, a success that is invaluable for involving geographically underserved populations in research.[39] Our inclusion of the open-ended "diabetes-need" question was an additional strength. Participants' responses to this question provided greater insight into factors that influence diabetes self-care than would have been possible using the SDSCA, PAID, or CES-D alone.

We described diabetes self-care activities, diabetes-related distress, depressive symptomatology, and specific diabetes-related needs among younger rural African American women with type 2 diabetes. Our findings indicate a need for further exploration of explore barriers/enablers of diabetes self-care activities and for providing women with educational, barrier management, and psychological support. Given the limited health care personnel and diabetes care resources in rural communities, creative and innovative strategies will be needed to provide this support.

Notes

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Table 1

DEMOGRAPHIC AND CLINICAL CHARACTERISTICS OF RURAL AFRICAN AMERICAN WOMEN WITH TYPE 2 DIABETES

n	**160**
Average Age	39.1±8.1
21–29 years old (%)	21
30–39 years old (%)	29
40–50 years old (%)	50
Married (%)	24.4
Live alone (%)	16.0
Income greater than 20K (%)	24.2
Some college or above (%)	46.6
Average diabetes duration (yrs)	6.4±6.0
Average hemoglobin A1c	9.0±2.4
Average BMI	36.2±9.1
Insulin-Requiring (%)	39.1
Diabetes self-care education from someone	34.0
Smoker (%)	19.3

Table 2

SUMMARY OF DIABETES SELF-CARE ACTIVITIES (SDSCA) ITEM RESPONSES AMONG RURAL AFRICAN AMERICAN WOMEN WITH TYPE 2 DIABETES

	Scores (mean days)[a]
General Dietary Self-Care	
How many of the last 7 DAYS have you followed a healthful eating plan?	4.1±1.8
On average, over the past month, how many DAYS PER WEEK have you followed your eating plan?	
Specific Dietary Self-Care	
On how many of the last 7 DAYS did you eat five or more servings of fruits and vegetables?	3.9±2.1
On how many of the last 7 DAYS did you eat high fat foods such as red meat or full-fat dairy products?	3.2±1.8
Physical Activity/Exercise Self-Care	
On how many of the last 7 DAYS did you participate in at least 30 minutes of physical activity? (Total minutes of continuous activity, including walking).	3.0±2.1
On how many of the last 7 DAYS did you participate in a specific exercise session (such as swimming, walking, biking) other than what you do around the house or as part of your work?	
Blood Glucose Testing	
On how many of the last 7 DAYS did you test your blood sugar?	3.6±2.6
On how many of the last 7 DAYS did you test your blood sugar the number of times recommended by your health care provider?	
Foot Inspections	
On how many of the last 7 DAYS did you check your feet?	4.3±2.4
On how many of the last 7 DAYS did you inspect the inside of your shoes?	
Medications	
On how many of the last 7 DAYS, did you take your recommended diabetes medication?	5.5±2.4
Smoking	
Over the past 7 DAYS, how many cigarettes did you smoke on an average day?	7.5±5.8

[a]For Self-care categories, scores represent the mean of responses to both questions; for “Medications,” the score reflects the response for one question; for “Specific Dietary Self-Care” questions are scored separately due to low inter-item reliability and as previously recommended.[16]

Table 3

RESPONSE DISTRIBUTION OF PROBLEM AREAS IN DIABETES (PAID) ITEMS AMONG RURAL AFRICAN AMERICAN WOMEN WITH TYPE 2 DIABETES

	Responses (%)				
PAID Question	**Not a problem**	**Minor problem**	**Moderate problem**	**Somewhat serious problem**	**Serious problem**
Not having clear and concrete goals for your diabetes care?	34.4	30.5	16.0	6.9	4.6
Feeling discouraged with your diabetes treatment plan?	44.3	28.2	16.0	6.9	4.6
Feeling scared when you think about living with diabetes?	24.4	22.9	22.1	11.5	19.1
Uncomfortable social situations related to your diabetes care (e.g., people telling you what to eat)?	32.8	25.2	19.9	13.7	8.4
Feelings of deprivation regarding food and meals?	31.3	32.1	17.6	12.2	6.9
Feeling depressed when you think about living with diabetes?	28.2	29.0	16.8	13.0	13.0
Not knowing if mood or feelings are related to your diabetes?	20.6	33.6	21.4	13.0	11.5
Feeling overwhelmed by your diabetes?	31.3	29.8	19.1	10.7	9.2
Worrying about low blood sugar reactions?	28.2	29.8	16.7	13.7	11.5
Feeling angry when you think about living with diabetes?	38.9	25.2	15.3	7.6	13.0
Feeling constantly concerned about food and eating?	20.6	31.3	23.7	10.7	13.7
Worrying about the future and the possibility of serious complications?	13.0	21.4	21.4	15.3	29.0
Feelings of guilt or anxiety when you get off track with your diabetes management?	17.6	30.5	20.6	16.8	14.5
Not “accepting” your diabetes?	54.2	16.8	8.4	11.5	9.2
Feeling unsatisfied with your diabetes physician?	68.7	16.0	5.3	6.1	3.8
Feeling that diabetes is taking up too much of your mental and physical energy every day?	38.9	35.1	9.2	7.6	9.2
Feeling alone with your diabetes?	54.2	21.4	10.7	7.6	6.1
Feeling that your friends and family are not supportive of your diabetes management efforts?	62.6	19.9	9.9	4.6	3.1
Coping with complications of diabetes?	34.4	24.4	20.6	12.2	8.4
Feeling “burned out” by the constant effort needed to manage diabetes?	31.3	26.7	17.6	12.2	12.2

Table 4

RESPONSE DISTRIBUTION OF CENTER FOR EPIDEMIOLOGICAL STUDIES-DEPRESSION SCALE (CES3D) ITEMS AMONG RURAL AFRICAN AMERICAN WOMEN WITH TYPE 2 DIABETES

	Responses (%)			
CES-D Question	**Rarely or none of the time (less than 1 day)**	**Some or a little of the time (1–2 days)**	**Occasionally or a moderate amount of time (3–4) days**	**Most or all of the time (5–7 days)**
I was bothered by things that usually don't bother me.	39.81	34.26	15.74	10.19
I did not feel like eating; my appetite was poor.	38.89	40.74	13.89	6.48
I felt that I could not shake off the blues even with help from my family or friends.	39.81	37.96	15.74	6.48
I felt I was just as good as other people.	22.22	21.30	17.59	38.89
I had trouble keeping my mind on what I was doing.	41.67	35.19	15.74	7.41
I felt depressed.	40.74	31.48	14.81	12.96
I felt that everything I did was an effort.	29.63	33.33	23.15	13.89
I felt hopeful about the future.	24.07	20.37	30.56	25
I thought my life had been a failure.	56.48	24.07	15.74	3.70
I felt fearful.	51.85	35.19	9.26	3.70
My sleep was restless.	35.19	24.07	28.70	12.04
I was happy.	15.74	25	21.3	37.96
I talked less than usual.	42.59	33.33	17.59	6.48
I felt lonely.	46.3	29.63	15.74	8.33
People were unfriendly.	62.96	24.07	7.41	5.56
I enjoyed life.	15.74	15.74	22.22	46.3
I had crying spells.	50.93	30.56	8.33	10.19
I felt sad.	42.59	33.33	14.81	9.26
I felt that people dislike me.	64.81	21.3	11.11	2.78
I could not get "going."	39.81	31.48	23.15	5.56

Table 5

SELF-REPORTED DIABETES NEEDS AMONG RURAL AFRICAN AMERICAN WOMEN WITH TYPE 2 DIABETES

Support Need Category	Percent of Total Needs Statements	Specific Needs
Diet	34	Confusion about what to eat
Exercise	30	Lack of motivation; lack of appropriate space for exercise
Medication Adherence	10	Inconsistency in taking medication; confusion about how to take medication
Finances	8	High cost of healthy food; High cost of supplies (i.e. test strips)