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Program ACTIVE: Cognitive Behavioral Therapy to Treat Depression in Adults With Type 2 Diabetes in Rural Appalachia

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Abstract

High rates of type 2 diabetes (T2DM) and depression exist in rural Appalachia with limited access to psychotherapeutic treatment. No manualized cognitive behavioral therapy (CBT) treatment materials exist that are culturally tailored for individuals in this region with T2DM. We describe the development of the Program ACTIVE CBT intervention for use with adults with T2DM and depression by mental health providers in rural Appalachia. Qualitative and quantitative methods were used to test the feasibility and acceptability of Program ACTIVE. Intervention materials were rated at the 6th–7th grade reading level. Key informant interviews evaluated materials as culturally sensitive and accessible. Participants indicated high levels of satisfaction with therapy (94%), support from their therapist (86%), and usefulness of therapy and depression improvement (80.3%). Program ACTIVE was found to be a feasible and acceptable culturally tailored manualized CBT treatment for adults with T2DM and depression living in rural Appalachia. Implementation of these materials on a regional scale needs to be assessed.

Keywords

cognitive behavioral therapy; depression; diabetes; Appalachia

The prevalence of type 2 diabetes (T2DM) continues to rise in epidemic proportions in the United States and globally. Currently within the United States, T2DM accounts for 90% of all diabetes cases and is overrepresented among ethnic minority and other underserved populations including the rural Appalachian region (Huang, Basu, O'Grady, & Capretta, 2009; Schwartz et al., 2009). The overall prevalence of T2DM is approximately 9% nationally, with rural and urban underserved communities experiencing rates exceeding 15% (Huang et al., 2009; Schwartz et al., 2009). Poverty and low levels of education have been shown to increase the risk for the development of T2DM (Pincus, Callahan, & Burkhauser,

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1987; Robbins, Vaccarino, Zhang, & Kasl, 2001) as well as morbidity and mortality of T2DM in the United States and abroad (Pincus et al., 1987; Robinson, Lloyd, & Stevens, 1998; Tang, Chen, & Krewski, 2003).

Patients with T2DM have been found to be two times more likely to experience depressive symptoms compared to people without diabetes, with one in four patients reporting elevated depressive symptoms and diagnosed depressive disorders affecting approximately 15% of adults with type 1 or T2DM (Anderson, Freedland, Clouse, & Lustman, 2001). These prevalence rates exceed those found in the general population and are particularly troublesome when diabetes outcomes and associated costs are considered. Depressive symptoms have been shown to be associated with worsened blood glucose levels (Lustman et al., 2000), greater severity of diabetes complications (de Groot, Anderson, Freedland, Clouse, & Lustman, 2001), increased financial costs (Egede, Zheng, & Simpson, 2002), greater functional disability (Ciechanowski, Katon, & Russo, 2000), and early mortality from all causes (Lin et al., 2009).

Cognitive Behavioral Therapy Interventions for Depression and T2DM

Cognitive behavioral therapy (CBT) is recommended by the American Psychiatric Association as a standard tool for the treatment of moderate depression with or without antidepressant medication use (American Psychiatric Association [APA], 2010). Although the efficacy and cost-effectiveness of this approach is well-established (Jonsson et al., 2016; Katon et al., 2012), access to adequate treatment remains a significant barrier for most of the patients (Shafran et al., 2009) with greater restrictions to access observed among ethnically diverse and underserved communities (H. M. González et al., 2010). Barriers to the implementation of effective CBT approaches include therapist perceptions that materials developed in clinical trials have limited relevance to clinical practice, therapist preference for flexibility of treatment which may be hampered by the use of manualized treatment approaches, and therapist concerns that manualized treatment materials may lack relevance to their clinical populations (Shafran et al., 2009).

In Appalachia, these issues are combined with culturally based patient perceptions and values endemic of this predominantly rural region. Appalachian women have identified cultural values of self-reliance, a taboo on negative thinking, perceptions of mental health stigma, and feelings of ambivalence about the quality of care that may be available to them as factors that limit patient willingness to engage in treatment (Hill, Cantrell, Edwards, & Dalton, 2016; Snell-Rood et al., 2017).

Finally, effective CBT implementation for adults with T2DM and depression treatment in the Appalachian region has been limited by the absence of culturally tailored, empirically validated manualized treatment approaches. Prior clinical trials have established the efficacy of CBT in adults with T2DM in predominantly urban samples (J. S. Gonzalez et al., 2010; Katon et al., 2004; Lustman, Griffith, Freedland, Kissel, & Clouse, 1998). For example, Lustman et al. (1998) conducted the benchmark randomized controlled trial for CBT in 51 patients with diagnosed major depression and diabetes. Patients randomized to 10 weeks of individualized CBT showed significantly greater rates of remission at posttreatment and 6-

month follow-up assessment time points compared to diabetes education. Unfortunately, the CBT materials were not manualized in this study.

In the Pathways Study, problem-solving therapy (i.e., a variation of CBT) was integrated within the primary care setting to treat depression in adults with T2DM (Katon et al., 2004). Participants randomized to a stepped-care 12-week problem-solving therapy intervention reported higher levels of treatment exposure, satisfaction with care, and improved depression outcomes compared to patients in the usual care group (Katon et al., 2004). Intervention materials were designed to be used by trained nurses within primary care hospital settings in coordination with medical care.

J. S. Gonzalez and colleagues (2010) conducted a study of depression treatment using CBT combined with adherence support adapted from treatment approaches used for the treatment of HIV/AIDS. Participants received a single session of treatment designed to address adherence to diabetes medications followed by 9–11 sessions of individual CBT delivered using a collaborative care model which included a psychologist, nurse educator, and a dietitian implemented in an academic health setting. Participants receiving CBT showed significant improvements in depressive symptoms following treatment (i.e., 6.4-point decrease on the Montgomery–Åsberg Depression Rating Scale) compared to participants receiving enhanced usual care (J. S. Gonzalez et al., 2010).

Taken together, there is a need to develop and disseminate depression treatment materials to community mental health providers in rural and underserved regions, such as Appalachia, that experience high rates of T2DM and depression. In this article, we describe the development of the Program ACTIVE CBT manualized treatment approach and associated patient workbook that was developed for use by community therapists and their patients with T2DM and major depression.

Methods

Participants

Participants ($N = 50$) were adults with T2DM for 1 year or longer who met *DSM-IV-TR* criteria for major depressive disorder (APA, 2000). Participants were assessed at baseline, immediately following the intervention (POST) and at 3 months following intervention (3MFU). Participants were not paid for their participation in the study's assessment or intervention activities. A detailed description of study inclusion/exclusion criteria and assessment procedures is provided elsewhere (de Groot et al., 2010).

Study Design

Program ACTIVE was a behavioral translational pilot and feasibility study using a single-arm design that tested the combination of 10 sessions of CBT delivered by individual therapists in conjunction with 12 weeks of community-based exercise. The study was conducted in two phases. In Phase I, materials for all components of the intervention were developed and tested for relevance and fidelity using qualitative methods. In Phase II, materials were implemented into the intervention. In the intervention, participants received a combination treatment approach for depression: Ten sessions of individual face-to-face CBT

and 12 weeks of community-based exercise. The goal of CBT was to provide individuals with skills and concepts that they could use to (a) manage and reduce depressive symptoms, (b) prevent the onset and severity of future depressive episodes, and (c) generalize these skills to diabetes management. Primary outcomes from the trial are described elsewhere (de Groot et al., 2012). Eighty percent of participants enrolled at baseline completed the post-intervention and 3-month follow-up assessment visits.

Cognitive Behavioral Therapy Material Development

A survey of commercially available materials was conducted to define the core elements of current CBT interventions based on the foundation of cognitive therapy (A. T. Beck, Rush, Shaw, & Emery, 1979; J. S. Beck, 1995). Evaluation of literacy levels of these materials indicated reading levels at the 12th grade level or above which impedes comprehension for many rural and urban patients with T2DM. None of the existing commercial materials were tailored to treat depression and T2DM or to address issues common to a rural Appalachian cultural environment (e.g., financial worries in an economically limited area, stressors associated with supporting multiple generations in a single household, the effect of stressors within kinship networks that may affect the patient).

Health literacy principles, as described by the Centers for Disease Control and Prevention (CDC, 1999), the American Medical Association Foundation (Weiss, 2007), and Seligman et al. (2007) were applied to the creation of the workbook. These included limiting the number of core concepts within each chapter and each page; preserving margins and white space throughout each page; translation of core concepts into common terms (i.e., reducing jargon language); numerous examples and interactive activities to illustrate concepts; creating prototypical first person narratives to illustrate thoughts, feelings, and behaviors concepts discussed in each chapter; and creating activities (i.e., “Take Home Exercises”) that provide participants opportunities to implement core concepts between sessions.

Core concepts were organized into 10 chapters, one for each session of CBT. An introduction was created to provide psychoeducation including prevalence and empirically validated treatments for depression and diabetes, a description of the process of psychotherapy and a definition of common treatment orientations (e.g., CBT, interpersonal therapy), rationale for treatment, emergency contact information of study staff, and a behavioral contract to outline expectations and reinforce commitment of participants and therapists to engage across the 10 sessions. The content of the remaining 10 chapters, including a session-by-session description of CBT topics and take home activities, can be found in Table 1. To tailor the CBT materials to the needs of patients with T2DM, activity examples in each chapter were designed to include common diabetes scenarios, difficulties, and cognitive distortions to serve as examples and applications of CBT principles. For example, the first person narrative of “Ann” incorporates a scenario in which Ann has struggled with her weight which has involved catastrophizing and overgeneralization when she encounters changes in her weight and blood glucose levels. CBT principles were applied to identifying these negative automatic thoughts, labeling the cognitive distortions, and identifying and replacing core beliefs underlying her low self-appraisal. Such examples were designed to operationalize CBT tools and apply these to depressed thoughts and behaviors

manifested in diabetes self-care as well as demonstrate changes in thoughts and behaviors when depressive symptoms remit.

To tailor the materials to the needs of individuals in the Appalachian region, focus groups stratified by gender were conducted in a separate study prior to the development of materials. Themes associated with understanding of diabetes, etiology, management, and depression were identified and incorporated into the first person narratives of "Ann" and "John." For example, economic hardship, kinship networks, and commitment to helping family members beyond the point of self-sacrifice (e.g., emotional, financial) were woven into the scenarios for each of these fictional characters. Although these themes are not unique to the Appalachian cultural context, they resonate with the lived experience of people in this region and contribute to barriers to self-care behaviors needed by many patients with T2DM in this region.

Measures

Cultural adaptations to standardized CBT were evaluated using qualitative and quantitative methodologies. A description of each type of evaluation is presented in the following discussion.

Qualitative Evaluation of the Program ACTIVE Cognitive Behavioral Therapy Workbook Materials

Evaluation of Literacy Levels—Consistent with the principles outlined by Seligman et al. (2007), consultation on low literacy techniques was sought from an expert in health communication and an expert in health care delivery within the Appalachian region. Feedback from each expert was incorporated into the final version of the materials and literacy levels were recalculated following revisions.

The *Flesch–Kincaid Grade Level* test was used to assess the readability of the workbook. This test uses the average number of words per sentence along with the average number of syllables per word to calculate the projected number of years of education required to understand the text (Kincaid, Fishburne, Rogers, & Chissom, 1975).

Content Validity—To assess the fidelity of the materials to core CBT concepts, the workbook was distributed to three clinical psychologists who are experts in diabetes, depression research, and clinical care. Reviewers read the workbook content and provided written feedback and comments in the text.

Applicability to the Target Population—To assess the degree of relevance of the workbook to our target population, key informant interviews were conducted with male (N = 3) and female (N = 5) community health workers, teachers, and health educators who work with adults in their professional roles in the Appalachian region. The educational background of these individuals ranged from bachelor's to master's level degrees. Years of experience working with the target population ranged from 5 to 25 years. These individuals were identified by our Appalachian health delivery expert. Key informants were mailed copies of CBT Workbook chapters to review and participate in an interview with our health

delivery expert by telephone. Each key informant was provided a description of the overall study aims and purpose of the materials. Chapters were divided so that informants could comment extensively on 1–3 chapters. A semi-structured interview script was created to capture informant feedback for content clarity, format, relevance, and cultural appropriateness of the materials. Interviews were audiotaped by the interviewer and reviewed by the principal investigator.

Quantitative Evaluation by Participants

Participant Satisfaction Questionnaire—Participant satisfaction with CBT was assessed at the post-intervention assessment. Participants were asked to complete a 25-item satisfaction survey about their experience with all aspects of the pilot study immediately following the intervention period using a 5-item Likert scale (5 = *very helpful/satisfied*; 1 = *not at all helpful/very dissatisfied*). Items relevant to CBT included "How satisfied were you with the following components of Program ACTIVE? Talk therapy sessions? Take home exercises?" "How satisfied were you with the support from your therapist?" Participants were also asked to comment on the most or least helpful aspects of the study and offer any additional comments as desired.

Credibility and Expectancy Questionnaire—Participant appraisal of CBT was measured using the credibility/expectancy questionnaire (CEQ; DeVilly & Borkovec, 2000), a 6-item measure designed to elicit client expectations of therapy at the beginning and end of therapy. Items query client perceptions of the logical flow of therapy, usefulness of the therapy, confidence in recommending the therapy to others, and improvement in their depression since the start of therapy. Items are rated on a 9-point Likert scale with one item rated on a decile scale (i.e., percent improvement; 0%–100%).

Results

Findings from the qualitative and quantitative assessments of the Program ACTIVE CBT intervention materials are presented next.

Evaluation of Literacy Level

The Flesch–Kincaid grade level for reading was 6.7 in the final version of the workbook. Our team elected to retain the multisyllabic terms *diabetes* and *depression* in the text to be consistent with terms they would encounter in their routine medical care. Although this choice resulted in slightly higher reading grade level estimations, we felt this choice would result in greater conceptual integration between the CBT intervention and standard medical care.

Content Validity

All three expert reviewers approved and validated the fidelity of the materials to standard CBT treatment principles.

Applicability to the Target Population

A summary of feedback collected from our eight key informant interviews is shown in Table 2. Key informants had predominantly positive comments to offer about the workbook materials with high levels of positive feedback for the cultural adaptation of the materials and the use of the characters of “Ann” and “John” to demonstrate abstract principles. Suggestions for improvements included word replacement to reduce the “academic” tone of the materials to increase participant perceived accessibility, further refine terms to conform to lower levels of literacy, and additions to the psychoeducational elements in the “Introduction” for participants new to psychotherapy. All key informant suggestions were incorporated into the final version of the workbook.

Implementation Testing of Cognitive Behavioral Therapy

Therapist Evaluation—The CBT Workbook was given to nine (N = 4 male; N = 5 female) master’s level graduate students enrolled in a clinical psychology doctoral program who served as the therapists for participants in the Program ACTIVE pilot study. Weekly group supervision was provided by the principal investigator (MdG). Informal feedback was elicited from therapists throughout the course of treatment and at the end of the pilot study. Therapists reported high levels of satisfaction in using the materials and the therapy experience.

Participant Evaluation—A total sample of N = 40 participants completed CBT treatment. Demographic characteristics of the sample are shown in Table 3. Participants were predominantly female (68%), married (74%), and with a mean age of 57 (SD = 9.0) years. The mean duration of T2DM was 10.5 (SD = 6.6) years. The mean body mass index (BMI) was 35.0 (SD = 7.1). Participants represented the spectrum of educational attainment (range: 8th grade to doctoral level) and household income (range: $10,000–$81,000). There were no demographic differences between participants who did or did not complete the CBT intervention (28). Most participants reported no therapy experience prior to study entry. The mean number of sessions completed by participants was 9.0 (range: 1–10; 90% session attendance).

Participant satisfaction data were collected from 35 participants at the end of the intervention (post-intervention assessment). These data indicated that 82% of participants reported high levels of overall satisfaction (i.e., very satisfied) with the study experience. Two-thirds (66%) reported satisfaction with the length of the combined intervention. Seventy-four percent reported satisfaction with the feedback they received from the study, and 71% reported satisfaction with their engagement in blood glucose monitoring during the study.

For the items specific to the CBT intervention, 86% of participants reported high levels of satisfaction with the support they received from their CBT therapist, and 94% rated their psychotherapy sessions as very helpful. Two thirds (66%) of participants rated the take home exercises as very helpful (de Groot et al., 2012). When asked about satisfaction about the exercise intervention, 74% reported that the exercise classes they received from study fitness

instructors were helpful, and 69% reported that they were satisfied with their changes in exercise.

At the baseline assessment, $N = 46$ participants rated their experience of their expectation of the Program ACTIVE CBT treatment as somewhat logical ($M = 6.5$, $SD = 1.7$), somewhat useful ($M = 6.1$, $SD = 1.5$), somewhat confident in recommending the treatment to others with similar issues ($M = 6.3$, $SD = 1.9$), with a mean estimate of improvement in depression as 53.9% ($SD = 21.1$). At post-intervention assessment, $N = 40$ participants rated their experience of their Program ACTIVE CBT treatment as very logical ($M = 8.4$, SD = 0.8), very useful ($M = 8.1$, SD 0.9), very confident in recommending the treatment to others with similar issues ($M = 8.6$, $SD = 0.7$), with a mean estimate of improvement in depression as 80.3% ($SD = 14.8$). These data demonstrated improvements in participant appraisals of the CBT following treatment.

Discussion

Because rates of T2DM and comorbid depression continue to rise in the Appalachian region and nationally, community mental health providers and their clients need accessible tools to effectively treat depression and improve health outcomes such as diabetes. The Program ACTIVE Cognitive Behavioral Therapy manualized treatment is a diabetes-specific CBT protocol for the treatment of major depressive disorder tailored for adults with T2DM in the Appalachian region. These materials were created to be accessible for a range of health literacy levels and to orient participants to individual psychotherapy who had little or no prior psychotherapy experience.

Findings from this study demonstrated that these materials are valid, culturally sensitive, and accessible to individuals who read at a 6th–7th grade reading level or greater. Findings also demonstrated that the therapy experience was rated by therapists and participants with high levels of satisfaction and perceived usefulness and effectiveness of therapy. These scores improved considerably from baseline client expectations of treatment, which were consistent with qualitative descriptions of client expectations of therapy from this Appalachian region (Hill et al., 2016; Snell-Rood et al., 2017). The high rates of satisfaction from participants are noteworthy given that no remuneration was provided for study participation.

The development of these materials was designed to broaden the tool kit of intervention materials that integrate the treatment of depression with comorbid medical conditions, in this case, T2DM. Changes that have been occurring in health and mental health care systems over the past decade call for greater integration of the care of patients with multiple conditions in the service of improving medical outcomes. Such integration can be beneficial to mental health outcomes for patients and by extension for mental health providers. However, mental health providers need to be equipped with empirically validated tools that will provide them with the flexibility to tailor treatment for each patient (Shafran et al., 2009) and the efficacy of treatment that is desired by patients (Snell-Rood et al., 2017). Although mental health providers can play a critical role in supporting diabetes self-care behaviors by using CBT approaches that speak to both depression and diabetes, they must also remain grounded in their scope of practice and competence. Thus, continuing education

training remains a critical element in maintaining and broadening high levels of practice implementation.

Limitations to the current investigation include modest sample size ($N = 50$) which may not be representative of the entire spectrum of patients with T2DM and depression. In addition, patient satisfaction data were not available from those who withdrew from the treatment trial, and withdrawal from the study could reflect dissatisfaction with some elements of the CBT intervention materials. It is noteworthy, however, that participant retention rates and session completion rates were high (80% and 90%, respectively) which provides some confidence in the high rates of satisfaction and positive appraisals of the therapy.

In sum, the Program ACTIVE CBT intervention has demonstrated improvement in both depression (i.e., depressive symptoms and depression remission) and glycemic control in addition to acceptability to patients living in rural Appalachia (de Groot et al., 2012; de Groot et al., 2017). Further work is needed to assess the impact of implementation of these materials into a variety of mental health practice settings in the Appalachian region. These materials may also be adapted and culturally tailored to meet the needs of high risk urban and ethnic groups.

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TABLE 1

Components of Cognitive Behavioral Therapy in the Program ACTIVE Treatment Workbook

Chapter	Components
Introduction	Psychoeducation
	What is depression?
	Signs and symptoms of depression
	What causes depression?
	Depression and diabetes
	Treatment of depression
Chapter 1	Getting Started
	What to expect from treatment
	Explaining Take-Home Exercises
	Take-Home Exercise: Setting Goals for Therapy
	Therapy agreement
Chapter 2	Understanding CBT
	Relationships among thoughts, feelings, and behaviors
	How does CBT work?
	Steps in CBT
	Take-Home Exercise: Starting a Thought Diary
Chapter 3	Linking Thoughts and Feelings
	How can I tune in to my thoughts and feelings?
	Using a mood list
	What is the connection between thoughts and feelings?
	Take-Home Exercise: Thoughts and Feelings Diary
Chapter 4	Linking Thoughts and Feelings to Behaviors
	What are behaviors?
	How are behaviors linked to thoughts and feelings?
	Changing behaviors with problem-solving strategies
	Take-Home Exercise: Thoughts, Feelings, and Behaviors Diary
	Take-Home Exercise: What Are My Options for Changing Behaviors?
Chapter 5	Automatic Thoughts
	How do you identify automatic thoughts?
	Are all automatic thoughts harmful?
	What to do when you have an automatic thought
	Take-Home Exercise: Identifying Automatic Thoughts
Chapter 6	Cognitive Distortions
	What are cognitive distortions and how do they relate to depression?
	T op 9 cognitive distortions
	How do you identify cognitive distortions?
	Take-Home Exercise: Labeling My Negative Thoughts
Chapter 7	Talking Back to Negative Thoughts
	Questioning the basis of automatic thoughts

Chapter	Components
	Strategies to stop automatic thoughts
	Talking back with a positive thought
	Take-Home Exercise: Talk Back to Negative Thoughts
Chapter 8	Evaluating Core Beliefs—Part 1
	Finding recurrent themes in automatic thoughts
	Three levels of beliefs: automatic thoughts, assumptions, core beliefs
	Where do core beliefs come from?
	How to evaluate core beliefs
	Take-Home Exercise: Getting to My Core Beliefs
	Take-Home Exercise: Harvesting My Core Beliefs
Chapter 9	Evaluating Core Beliefs—Part 2
	Questioning the basis of core beliefs
	How to make a core beliefs proof record
	Positive facts and experiences can lead to new core beliefs
	Take-Home Exercise: Rewriting My Core Beliefs
Chapter 10	Putting It All Together
	What have you learned?
	Recognizing depression relapse
	Reducing the risk of relapse
	Creating a plan to use if depression comes back

Note. CBT = cognitive behavioral therapy.

TABLE 2

Summary of Themes From Key Informant Interviews to Evaluate the PROGRAM ACTIVE CBT Workbook Materials

Positive Comments	Suggested Changes
Workbook content is culturally sensitive and appropriate for use with an Appalachian population with type 2 diabetes.	Replace the word *homework* with *take-home activity* and *worksheet* with *activity* to reduce feelings of shame and resistance from educational experiences earlier in life.
Testimonial examples of "Ann" and "John" are easy to understand and effective in demonstrating abstract CBT principles.	Simplify and better define terms in the text (e.g., *cognitive distortions*, *evidence table* vs. *proof record*).
The characters of "Ann" and "John" are believable as members of an Appalachian community.	Better align graphics on each page with the meaning of the content beside the image.
The sequence of steps outlined in the workbook is detail oriented and supportive of behavior change efforts.	Add text to the "Introduction" to introduce the rationale for psychotherapy.
The tone of the materials are respectful of an audience with a range of literacy and health literacy levels.	Introduce the character of "John" earlier in Chapter 1.
Examples of diabetes self-care behaviors were relevant to the lives of people with type 2 diabetes.	Add text to explain the process of therapy for patients who are new to psychotherapy.
Examples were gender-balanced.	Provide examples of myths about therapy and information that dispels these myths.
	Provide an explanation that depression can be treated and the benefits of treatment.
	Shorten the text of selected chapters.
	Balance the graphic representations of women and men to be applicable to a wider audience.

Note. CBT = cognitive behavioral therapy.

TABLE 3

Baseline Demographic Characteristics of Program ACTIVE Participants ($N = 50$)

	N Mean	% *SD*
Age (Mean, *SD*)	57.2	8.8
Gender		
Male	16	32.0
Female	34	68.0
Ethnicity		
White	50	100.0
Marital status		
Married/living with partner	37	74.0
Single	2	4.0
Divorced/separated	6	12.0
Widowed	5	10.0
Education		
Less than H. S.	3	6.7
H. S. diploma/GED	11	24.4
Trade school/part college	17	37.8
4-Year college/post college	14	31.1
Income		
$0–$10,000	3	6.1
$11,000–$20,000	5	10.2
$21,000–$40,000	14	28.6
$41,000–$60,000	13	27.0
$61,000–$80,000	3	6.1
$81,000+	11	22.0
Home ownership	45	90.0
Work outside home	27	54.0
Mean no. of dependents (Mean, *SD*)	2.4	1.3
Difficulty making ends meet		
Hard	17	34.0
50/50	22	44.0
Easy	11	22.0
Treatment type		
Diet	5	10.0
Pills	20	40.0
Insulin injections/pump	11	22.0
Combination	14	28.0
Health insurance (Yes)	46	92.0
Current primary care provider	50	100.0
Current diabetes Specialist	26	53.1

Note. H. S. = high school; GED = general educational development.

From “Can Lifestyle Interventions Do More than Reduce Diabetes Risk? Treating Depression in Adults With Type 2 Diabetes with Exercise and Cognitive Behavioral Therapy,” by M. de Groot, T. Doyle, M. Kushnick, J. Shubrook, J. Merrill, E. Rabideau, and F. Schwartz, 2012, *Current Diabetes Reports* , *12*(2), 157–166. http://dx.doi.org/10.1007/s11892-012-0261-z. Reprinted with permission.