



Psychosocial Care for People With Diabetes: A Position Statement of the American Diabetes Association

Diabetes Care 2016;39:2126–2140 | DOI: 10.2337/dc16-2053

Deborah Young-Hyman,¹ Mary de Groot,²
Felicia Hill-Briggs,³ Jeffrey S. Gonzalez,⁴
Korey Hood,⁵ and Mark Peyrot⁶

Complex environmental, social, behavioral, and emotional factors, known as psychosocial factors, influence living with diabetes, both type 1 and type 2, and achieving satisfactory medical outcomes and psychological well-being. Thus, individuals with diabetes and their families are challenged with complex, multifaceted issues when integrating diabetes care into daily life. To promote optimal medical outcomes and psychological well-being, patient-centered care is essential, defined as “providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions” (1). Practicing personalized, patient-centered psychosocial care requires that communications and interactions, problem identification, psychosocial screening, diagnostic evaluation, and intervention services take into account the context of the person with diabetes (PWD) and the values and preferences of the PWD.

This article provides diabetes care providers with evidence-based guidelines for psychosocial assessment and care of PWD and their families. Recommendations are based on commonly used clinical models, expert consensus, and tested interventions, taking into account available resources, practice patterns, and practitioner burden. Consideration of life span and disease course factors (Fig. 1) is critical in the psychosocial care of PWD. This Position Statement focuses on the most common psychological factors affecting PWD, including diabetes distress and psychological comorbidities, while also considering the needs of special populations and the context of care.

GENERAL CONSIDERATIONS IN PSYCHOSOCIAL CARE

Recommendations

- Psychosocial care should be integrated with collaborative, patient-centered medical care and provided to all people with diabetes, with the goals of optimizing health outcomes and health-related quality of life. **A**
- Providers should consider an assessment of symptoms of diabetes distress, depression, anxiety, and disordered eating and of cognitive capacities using patient-appropriate standardized/validated tools at the initial visit, at periodic intervals, and when there is a change in disease, treatment, or life circumstance. Including caregivers and family members in this assessment is recommended. **B**
- Consider monitoring patient performance of self-management behaviors as well as psychosocial factors impacting the person’s self-management. **E**
- Consider assessment of life circumstances that can affect physical and psychological health outcomes and their incorporation into intervention strategies. **E**
- Addressing psychosocial problems upon identification is recommended. If an intervention cannot be initiated during the visit when the problem is identified, a follow-up visit or referral to a qualified behavioral health care provider may be scheduled during that visit. **E**

Practitioners should identify behavioral/mental health providers, ideally those who are knowledgeable about diabetes treatment and the psychosocial aspects of diabetes, with whom they can form alliances and use for referrals (Table 1) in the psychosocial care of PWD. Ideally, psychosocial care providers should be embedded in diabetes care settings. Shared resources such as electronic health records, management data, and patient-reported

¹Office of Behavioral and Social Science Research, National Institutes of Health, Bethesda, MD

²Indiana University School of Medicine, Indianapolis, IN

³Johns Hopkins School of Medicine, Baltimore, MD

⁴Yeshiva University and the Albert Einstein College of Medicine, Bronx, NY

⁵Stanford University, Stanford, CA

⁶Loyola University Maryland, Baltimore, MD

Corresponding author: Deborah Young-Hyman, younghyd@od.nih.gov.

This position statement was reviewed and approved by the American Diabetes Association Professional Practice Committee in September 2016 and ratified by the American Diabetes Association Board of Directors in October 2016.

© 2016 by the American Diabetes Association. Readers may use this article as long as the work is properly cited, the use is educational and not for profit, and the work is not altered. More information is available at <http://www.diabetesjournals.org/content/license>.

See accompanying articles, pp. 2122, 2141, 2149, 2158, 2165, 2174, 2182, 2190, and 2197.

Phase of living with diabetes	Continuum of psychosocial issues and behavioral health disorders in people with diabetes		
		<div style="display: flex; justify-content: space-between;"> Nonclinical (normative) symptoms/behaviors Clinical symptoms/diagnosis </div>	
	Behavioral health disorder prior to diabetes diagnosis	None	<ul style="list-style-type: none"> Mood and anxiety disorders Psychotic disorders Intellectual disabilities
	Diabetes diagnosis	Normal course of adjustment reactions, including distress, fear, grief, anger, initial changes in activities, conduct, or personality	<ul style="list-style-type: none"> Adjustment disorders*
	Learning diabetes self-management	Issues of autonomy, independence, and empowerment. Initial challenges with self-management demonstrate improvement with further training and support	<ul style="list-style-type: none"> Adjustment disorders* Psychological factors affecting medical condition**
	Maintenance of self-management and coping skills	Periods of waning self-management behaviors, responsive to booster educational or supportive interventions	<ul style="list-style-type: none"> Maladaptive eating behaviors Psychological factors** affecting medical condition
	Life transitions impacting disease self-management	Distress and/or changes in self-management during times of life transition***	<ul style="list-style-type: none"> Adjustment disorders* Psychological factors** affecting medical condition
	Disease progression and onset of complications	Distress, coping difficulties with progression of diabetes/onset of diabetes complications impacting function, quality of life, sense of self, roles, interpersonal relationships	<ul style="list-style-type: none"> Adjustment disorders* Psychological factors** affecting medical condition
	Aging and its impact on disease and self-management	Normal, age-related forgetfulness, slowed information processing and physical skills potentially impacting diabetes self-management and coping	<ul style="list-style-type: none"> Mild cognitive impairment Alzheimer or vascular dementia
	<div style="display: flex; justify-content: space-around;"> ↑ ↑ </div> <p>All health care team members (e.g., physicians, nurses, diabetes educators, dieticians) as well as behavioral providers</p> <p>Behavioral or mental health providers (e.g., psychologists, psychiatrists, clinical social workers, certified counselors or therapists)</p> <p>Providers for psychosocial and behavioral health intervention</p>		

Figure 1—Psychosocial care for PWD: life and disease course perspectives. *With depressed mood, anxiety, or emotion and conduct disturbance. **Personality traits, coping style, maladaptive health behaviors, or stress-related physiological response. ***Examples include changing schools, moving, job/occupational changes, marriage or divorce, or experiencing loss.

information regarding adjustment to illness and life course issues facilitate providers' capacity to identify and remediate psychosocial issues that impede regimen

implementation and improve diabetes management and well-being. Care models that take into account cultural influences, as well as personal, family, and community

resources, and tailor care to the core values and lifestyle of the individual are more likely to be successful (2). Regardless of how the diabetes care team is constituted, the PWD is central to the care process. If a PWD cannot act on behalf of him/herself in the care process, a support person needs to be identified to participate in treatment decisions and facilitate disease management. It is also important that providers enlist members of the patient's social support network to aid in the identification, prevention, and resolution of psychosocial problems.

Medical management of diabetes requires patient implementation of a treatment regimen. Thus, psychosocial factors impacting self-care such as diabetes distress (burdens of diabetes and its treatment, worries about adverse consequences), lack of social and economic resources, and

Table 1—Situations that warrant referral of a person with diabetes to a mental health provider for evaluation and treatment

- If self-care remains impaired in a person with diabetes distress after tailored diabetes education
- If a person has a positive screen on a validated screening tool for depressive symptoms
- In the presence of symptoms or suspicions of disordered eating behavior, an eating disorder, or disrupted patterns of eating
- If intentional omission of insulin or oral medication to cause weight loss is identified
- If a person has a positive screen for anxiety or FoH
- If a serious mental illness is suspected
- In youth and families with behavioral self-care difficulties, repeated hospitalizations for diabetic ketoacidosis, or significant distress
- If a person screens positive for cognitive impairment
- Declining or impaired ability to perform diabetes self-care behaviors
- Before undergoing bariatric surgery and after if assessment reveals an ongoing need for adjustment support

Table 2—Selected measures for the evaluation of psychosocial constructs in the clinical setting

Topic area	Measure title	Citations	Description	Validated population
Diabetes-related distress	Problem Areas in Diabetes (PAID)	Polonsky WH, Anderson BJ, Lohrer PA, et al. Assessment of diabetes-related distress. <i>Diabetes Care</i> 1995;18:754–760 Welch G, Weinger K, Anderson B, Polonsky WH. Responsiveness of the Problem Areas in Diabetes (PAID) questionnaire. <i>Diabet Med</i> 2003;20:69–72	20-item measure of diabetes-specific distress measuring emotional distress and burden associated with diabetes	Adults with type 1 and type 2 diabetes
	Diabetes Distress Scale (DDS)	Polonsky WH, Fisher L, Earles J, et al. Assessing psychosocial stress in diabetes: development of the Diabetes Distress Scale. <i>Diabetes Care</i> 2005;28:626–631 Fisher L, Hessler DM, Polonsky WH, Mullan J. When is diabetes distress clinically meaningful? Establishing cut points for the Diabetes Distress Scale. <i>Diabetes Care</i> 2012;35:259–64 (39)	17-item questionnaire measuring diabetes-specific distress in four domains: emotional burden, diabetes interpersonal distress, physician-related distress, and regimen-related distress	Adults with type 1 and type 2 diabetes
	PAID—Pediatric Version (PAID-Peds)	Markowitz JT, Volkening LK, Butler DA, Laffel LM. Youth-perceived burden of type 1 diabetes: Problem Areas in Diabetes Survey-Pediatric Version (PAID-Peds). <i>J Diabetes Sci Technol</i> 2015;9:1080–1085	20-item measure of diabetes burden	Youth (ages 8–17 years) with type 1 diabetes
	PAID—Teen Version	Weissberg-Benchell J, Antisdel-Lomaglio, J. Diabetes-specific emotional distress among adolescents: feasibility, reliability, and validity of the problem areas in diabetes-teen version. <i>Pediatr Diabetes</i> 2011;12:341–344	26-item questionnaire measuring perceived burden of diabetes	Adolescents (ages 11–19 years) with diabetes
Depression	PAID—Parent Revised version (PAID-PR)	Markowitz JT, Volkening LK, Butler DA, Antisdel-Lomaglio JH, Anderson BJ, Laffel LM. Re-examining a measure of diabetes-related burden in parents of young people with type 1 diabetes: the Problem Areas in Diabetes Survey—Parent Revised version (PAID-PR). <i>Diabet Med</i> 2012;29:526–530	18-item questionnaire assessing perceived parental burden of diabetes	Parents of children and adolescents (ages 8–18 years) with type 1 diabetes
	Patient Health Questionnaire (PHQ-9)	Spitzer RL, Williams JB, Kroenke K, et al. Utility of new procedure for diagnosis mental-disorders in primary-care: the PRIME-MD 1000 Study. <i>JAMA</i> 1994;272:1749–1756	9-item measure of depressive symptoms (corresponding to criteria for major depressive disorder)	Adults
	Beck Depression Inventory—II (BDI-II)	Beck AT, Steer RA, Brown GK. <i>Manual for the Beck Depression Inventory-II</i> , 2nd ed. San Antonio, TX, Harcourt, Brace & Company, 1996	21-item questionnaire evaluating somatic and cognitive symptoms of depression	Adults
	Child Depression Inventory (CDI) (current edition is CDI-2)	Kovacs, M. <i>The Children's Depression Inventory (CDI): Technical Manual Update</i> . North Tonawanda, NY, Multi-Health Systems, 2003	27-item measure assessing depressive symptoms using child and parent report	Youth (ages 7–17 years)
Geriatric Depression Scale (GDS)	Sheikh JI, Yesavage JA. Geriatric Depression Scale (GDS): recent evidence and development of a shorter version. <i>Clinical Gerontologist</i> 1986;5:165–172	15-item measure was developed to assess depression in older adults	Adults (ages 55–85 years)	

Continued on p. 2129

Table 2—Continued

Topic area	Measure title	Citations	Description	Validated population
Eating disorders	Eating Disorders Inventory-3 (EDI-3)	Garner DM. <i>Eating Disorder Inventory-3: Professional Manual</i> . Odessa, FL, Psychological Assessment Resources, 2004	2-item interview and self-report surveys aimed at the measurement of psychological traits or symptom clusters relevant to the development and maintenance of eating disorders	Females (ages 13–53 years)
	Diabetes Eating Problems Survey (DEPS-R)	Markowitz JT, Butler DA, Volkering LK, Antisdell JE, Anderson BJ, Laffel LM. Brief screening tool for disordered eating in diabetes: internal consistency and external validity in a contemporary sample of pediatric patients with type 1 diabetes. <i>Diabetes Care</i> 2010;33:495–500	16-item self-report measure designed to assess diabetes-specific eating issues	Youth (ages 13–19 years) with type 1 diabetes
	Diabetes Treatment and Satiety Scale (DTSS-20)	Young-Hyman D, Davis C, Grigsby C, Looney S, Peterson C. Development of the Diabetes Treatment and Satiety Scale: DTSS-20 (Abstract). <i>Diabetes</i> 2011;60(Suppl. 1):A218	20-item self-report measure that assesses perception of satiety and fullness in the context of food intake, physical activity, medication dosing, and glycemic levels	Youth (ages 10–17 years) with type 1 diabetes
Health literacy and numeracy	General Health Numeracy Test (GHNT)	Osborn CY, Wallston KA, Shpigiel A, Cavanaugh K, Kripalani S, Rothman RL. Development and validation of the General Health Numeracy Test (GHNT). <i>Patient Educ Couns</i> 2013;91:350–356	21-item self-report questionnaire designed to assess patient level of understanding of the use of numbers in medications and health	Adults
	Diabetes Numeracy Test (DNT)	Huizinga MM, Elasy TA, Wallston KA, et al. Development and validation of the Diabetes Numeracy Test (DNT). <i>BMC Health Ser Res</i> 2008;1:96	5-, 15-, and 43-item word problem-based test to assess understanding of tables, graphs, and figures specific to the management of diabetes	Adults (ages 18–80 years)
	Brief Health Literacy Scale (BHLS)	Wallston KA, Cawthon C, McNaughton CD, Rothman RL, Osborn CY, Kripalani S. Psychometric properties of the Brief Health Literacy Screen in clinical practice. <i>J Gen Intern Med</i> 2014;29:119–126	3-item measure read aloud to patients in an outpatient and emergency department setting to assess understanding of health concepts	Adults
Self-care efficacy	Diabetes self-efficacy	Ritter PL, Lorig K, Laurent D. Characteristics of the Spanish- and English-language self-efficacy to manage diabetes scales. <i>Diabetes Educ</i> 2016;42:167–177	8-item self-report scale designed to assess confidence in performing diabetes self-care activities	Adults
	Self-efficacy for diabetes management	Iannotti RJ, Schneider S, Nansel TR, et al. Self-efficacy, outcome expectations, and diabetes self-management in adolescents with type 1 diabetes. <i>J Dev Behav Pediatr</i> 2006;27:98–105 (26)	10-item self-report self-efficacy scale	Adolescents (ages 10–16 years) with type 1 diabetes

Continued on p. 2130

Table 2—Continued

Topic area	Measure title	Citations	Description	Validated population
Anxiety	State-Trait Anxiety Inventory for Children (STAIC)	Spielberger CD, Edwards CD, Lushene R, Monturi J, Plotzke D. <i>State-Trait Anxiety Inventory for Children Professional Manual</i> . Menlo Park, CA, Mind Garden, Inc., 1973	40 items on two dimensions—trait and state anxiety	Youth with and without type 1 diabetes
	Beck Anxiety Inventory (BAI)	Beck AT, Steer RA. <i>Beck Anxiety Inventory Manual</i> . San Antonio, TX, The Psychological Corporation, 1993	21 items assessing self-reported anxiety	Adults
	Hypoglycemia Fear Survey-II (HFS-II)	Cox DJ, Irvine A, Gonder-Frederick L, Nowacek G, Butterfield J. Fear of hypoglycemia: quantification, validation, and utilization. <i>Diabetes Care</i> 1987;10:617–621 (63)	33 items assessing behavioral and worry dimensions of hypoglycemia in adults	Adults with type 1 diabetes
	Children's Hypoglycemia Index (CHI)	Gonder-Frederick LA, Schmidt KM, Vajda KA, et al. Psychometric properties of the Hypoglycemia Fear Survey-II for adults with type 1 diabetes. <i>Diabetes Care</i> 2011;34:801–806 (71)	Designed to assess FoH (25 items)	Youth (ages 8–16 years) with type 1 diabetes
Cognitive screening in older adults	Mini-Mental State Examination (MMSE)	Kamps JL, Roberts MC, Varela RE. Development of a new fear of hypoglycemia scale: preliminary results. <i>J Pediatr Psychol</i> 2005;30:287–291	11-item (30-point) screen for cognitive impairment in adults	Adults (ages 18–100 years)
	Telephone Interview for Cognitive Status (TICS)	Folstein MF, Folstein SE, McHugh PR. "Mini-mental" state: a practical method for grading the cognitive state of patients for the clinician. <i>J Psychiatr Res</i> 1975;12:189–198	11-item measure assessing cognitive status by telephone	Adults (ages 60–98 years)
	Cognitive assessment toolkit	Population-based norms for the Mini-Mental State Examination by age and educational level. <i>JAMA</i> 1993;269:2386–2391	Designed for use during a medical office visit to screen for cognitive impairment in older adults (includes informant interviews also)	Adults
		Brandt J, Folstein MF. <i>Telephone Interview for Cognitive Status (TICS) Professional Manual</i> . Lutz, FL, Psychological Assessment Resources, 2003	22-item questionnaire designed to assess pain	Adults
Chronic pain	Short-form McGill Pain Questionnaire (SF-MPQ-2)	Dworkin RH, Turk DC, Revicki DA, et al. Development and initial validation of an expanded and revised version of the Short-form McGill Pain Questionnaire (SF-MPQ-2). <i>Pain</i> 2009;144:35–42		

Continued on p. 2131

Table 2—Continued

Topic area	Measure title	Citations	Description	Validated population
Adherence to self-care	Summary of Diabetes Self-Care Activities (SDSCA)	Toobert DJ, Hampson SE, Glasgow RE. The Summary of Diabetes Self-Care Activities measure: results from 7 studies and a revised scale. <i>Diabetes Care</i> 2000;23:943–950	11-item and expanded 25-item measure of diabetes self-care behaviors	Adults with type 1 and type 2 diabetes
	Adherence to Refills and Medications Scale (ARMS-D)	Kripalani S, Risser J, Gatti ME, Jacobson TA. Development and evaluation of the Adherence to Refills and Medications Scale (ARMS) among low-literacy patients with chronic disease. <i>Value Health</i> 2009;12:118–123 Mayberry LS, Gonzalez JS, Wallston KA, Kripalani S, Osborn CV. The ARMS-D outperforms the SDSCA, but both are reliable, valid, and predict glycemic control. <i>Diabetes Res Clin Pract</i> 2013;102:96–104	11-item self-report questionnaire designed to assess the extent to which patients take and refill their diabetes-related medications	Adults
	Barriers to diabetes adherence	Mulvaney SA, Hood KK, Schlundt DG, et al. Development and initial validation of the barriers to diabetes adherence measure for adolescents. <i>Diabetes Res Clin Pract</i> 2011;94:77–83	21-item self-report questionnaire designed to assess barriers to diabetes self-care behaviors	Adolescents (ages 12–17 years) with diabetes

other psychological states (e.g., depression, anxiety, eating disorders, cognitive impairment) (3), as well as health literacy and numeracy, should be monitored. To detect problems early and prevent health deterioration, all PWD should be evaluated at the initial visit and on a periodic basis going forward even if there is no patient specific indication (4). In addition, evaluation is indicated during major disease and life transitions, including the onset of complications and significant changes in treatment (i.e., initiation of insulin pump or other forms of intensification) or life circumstances (i.e., living arrangements, job, and significant social relationships), with prospective monitoring for 6 months (a period of increased risk) (5).

All care providers should include queries about well-being in routine care. Standardized and validated tools (Table 2) for psychosocial monitoring, assessment, and diagnosis can be used by providers in a stepped sequence with positive findings leading to further evaluation, starting with informal verbal inquiries for monitoring followed by questionnaires for assessment (e.g., PHQ-9) and finally by structured interviews for diagnosis (e.g., Structured Clinical Interview for the DSM-V). For example, the diabetes care provider can ask whether there have been changes in mood during the past 2 weeks or since their last visit. Further, providers should consider asking whether there are new or different barriers to treatment and self-management, such as feeling overwhelmed or stressed by diabetes or other life stressors. Positive responses can be probed with additional questions and/or use of standardized measures to inform assessment and guide the selection of appropriate interventions.

When referral is warranted (Table 1), formal diagnostic assessments and interviews should be conducted by a qualified behavioral health provider familiar with the care of PWD. Standardized, age- and literacy-appropriate assessment and diagnostic tools should be used (Table 2). These established measures were selected from a wider literature on the basis of the scientific rigor used in their development and the availability of norms for clinical use. The recommendation of specific measures for clinical use is beyond the scope of this

statement. Care providers should implement interventions to address the day-to-day problems of living with diabetes, particularly diabetes-related distress related to self-management behaviors, as well as diabetes-related family conflict (6–8). Support from a behavioral health provider may be effective when difficulties are persistent. However, as soon as there is indication of a diagnosable psychological condition, consultation and/or referral should be sought with a provider having the appropriate mental health expertise. Standardized/validated intervention strategies specific to PWD should be utilized whenever possible.

PSYCHOSOCIAL ISSUES IMPACTING DIABETES SELF-MANAGEMENT

Recommendations

- People with diabetes should be evaluated and receive training until they attain competence in diabetes self-care skills and the use of technologies at the time of diagnosis, annually, if/when complications arise, and if/when transitions in care occur. The diabetes care team is encouraged to directly and regularly assess these self-management behaviors. **B**
- Providers should consider the burden of treatment and patient levels of confidence/self-efficacy for management behaviors as well as level of social and family support when making treatment recommendations. **E**

While following treatment regimens consistently improves A1C (9–12), the impact is modest. Multiple factors other than patient behavior affect diabetes treatment outcomes, including adequacy of medical management, duration of diabetes, weight gain, and other health-related (e.g., comorbid illness and concomitant medication) and social-structural factors (e.g., poverty, access to care, health insurance coverage) (13–16). Therefore, it is not appropriate to automatically attribute suboptimal A1C and adverse events such as hypoglycemia (17) solely to self-management behaviors without their direct assessment.

Provider communications with patients/families should acknowledge that multiple factors impact glycemic management

but also emphasize that following collaboratively developed treatment regimens and recommended lifestyle changes can significantly improve disease outcomes and well-being (14,18–20). Thus, the goal of provider–patient communication should be to empower the PWD without blaming them for “noncompliance” when the outcomes of self-management are not optimal.

The familiar term, noncompliance, denotes a passive, obedient role for PWD in “following doctor’s orders” that is at odds with the active role PWD are asked to take in directing the day-to-day planning, monitoring, evaluation, and problem-solving involved in diabetes self-management (21). Patient perceptions about their own ability, or self-efficacy, to self-manage diabetes are one important psychosocial factor related to improved diabetes self-management and treatment outcomes in diabetes (22–26) and should be a target of ongoing assessment and treatment planning.

Suboptimal self-management may be due to functional limitations (e.g., blindness, problems with dexterity, low health literacy and numeracy), lack of appropriate diabetes education, forgetting and disruption in routines, or psychosocial barriers, such as inadequate family and/or social support, misinformation or inaccurate beliefs about illness and treatment, emotional distress/depressive symptoms, or deficits in problem-solving or coping skills (23,27–30). Therefore, individual needs should be evaluated so that interventions can be tailored to the problem (31–35). Self-report measures are available and can be used in most practice settings (see Table 2). Using a nonjudgmental approach that normalizes periodic lapses in self-management may help minimize patients’ resistance to reporting problems with self-management.

Making healthy food choices on a daily basis is among the most difficult aspects of diabetes self-care (36). Current medical nutrition therapy guidelines promote flexible and healthy eating patterns personalized to the individual rather than defining a wide range of behaviors as dietary “nonadherence” (37). Self-monitoring of food intake may help the individual with diabetes become more aware of their own eating patterns while providing information

that helps the registered dietitian nutritionist assist with meal planning and develop personalized dietary recommendations. Through monitoring, it is important to assess for disordered eating behaviors (see DISORDERED EATING BEHAVIOR: CLINICAL AND SUBCLINICAL).

DIABETES DISTRESS

Recommendation

- Routinely monitor people with diabetes for diabetes distress particularly when treatment targets are not met and/or at the onset of diabetes complications. **B**

Diabetes distress is very common and is distinct from a psychological disorder (38–40). The constant behavioral demands (medication dosing, frequency, and titration; monitoring blood glucose, food intake and eating patterns, and physical activity) of diabetes self-management and the potential or actuality of disease progression are directly associated with reports of diabetes distress (39). Its prevalence is reported to be 18–45% with an incidence of 38–48% over 18 months (41). High levels of diabetes distress significantly impact medication-taking behaviors and are linked to higher A1C, lower self-efficacy, and poorer dietary and exercise behaviors (39,41,42). It may be helpful to provide counseling regarding expected diabetes-related versus generalized psychological distress at diagnosis and when disease state or treatment changes (43).

About one-third of adolescents with diabetes develop diabetes distress, which may be associated with declines in self-management behaviors and suboptimal blood glucose levels (44). Parents of children with type 1 diabetes are also prone to diabetes distress (45), which could impact their ability to provide psychological and diabetes management support for their child.

Diabetes distress should be routinely monitored (46) using patient-appropriate validated measures (Table 2). If diabetes distress is identified, the person should be referred for diabetes education to address areas of diabetes self-care that are most relevant to the patient and have the most impact on diabetes outcomes. People whose self-care remains impaired after tailored diabetes education should be referred by their care team to a

behavioral health provider for evaluation and treatment.

PSYCHOLOGICAL COMORBIDITIES

Prevalence of clinically significant psychopathology in PWD ranges across diagnostic categories, and some diagnoses are considerably more common in PWD than in those without the disease (47–52). Symptoms, both clinical and subclinical, that interfere with the person's ability to carry out diabetes self-management must be addressed.

Depression

Recommendations

- Providers should consider annually screening all patients with diabetes and/or a self-reported history of depression for depressive symptoms with age-appropriate depression screening measures, recognizing that further evaluation will be necessary for individuals who have a positive screen. **B**
- Beginning at diagnosis of complications or when there are significant changes in medical status, consider assessment for depression. **B**
- Referrals for treatment of depression should be made to mental health providers with experience using cognitive behavioral therapy, interpersonal therapy, or other evidence-based treatment approaches in conjunction with collaborative care with the patient's diabetes treatment team. **A**

History of depression, current depression, and antidepressant medication use are risk factors for the development of type 2 diabetes, especially if the individual has other risk factors such as obesity and family history of type 2 diabetes (53–55).

Elevated depressive symptoms and depressive disorders affect one in four patients with type 1 or type 2 diabetes (47). Thus, routine screening for depressive symptoms is indicated in this high-risk population including people with prediabetes (particularly those who are overweight), type 1 and/or type 2 diabetes, gestational diabetes mellitus, and postpartum diabetes. Regardless of diabetes type, women have significantly higher rates of depression than men (56).

Routine monitoring with patient-appropriate validated measures (Table 2) can help to identify whether referral is warranted. Remission of depressive symptoms or disorder in adult patients suggests the need for ongoing monitoring of depression recurrence within the context of routine care (53).

Integrating mental and physical health care can improve outcomes. The mental health provider should be incorporated into the diabetes treatment team when a patient is in psychological therapy (talk therapy) (57). Incorporation of a physical activity regimen into routine self-management has also been shown to improve the health and mental well-being of PWD (58,59). Please refer to the Position Statement of the American Diabetes Association (ADA) on physical activity/exercise and diabetes (60) for additional information.

Anxiety Disorders

Recommendations

- Consider screening for anxiety in people exhibiting anxiety or worries regarding diabetes complications, insulin injections or infusion, taking medications, and/or hypoglycemia that interfere with self-management behaviors and in those who express fear, dread, or irrational thoughts and/or show anxiety symptoms such as avoidance behaviors, excessive repetitive behaviors, or social withdrawal. Refer for treatment if anxiety is present. **B**
- People with hypoglycemia unawareness, which can co-occur with fear of hypoglycemia, should be treated using Blood Glucose Awareness Training (or other evidence-based similar intervention) to help re-establish awareness of hypoglycemia and reduce fear of hypoglycemia. **A**

Anxiety symptoms and diagnosable disorders (e.g., generalized anxiety disorder [GAD], body dysmorphic disorder, obsessive compulsive disorder [OCD], specific phobias, and posttraumatic stress disorder [PTSD]) are common in PWD (61); the Behavioral Risk Factor Surveillance System estimated the lifetime prevalence of GAD to be 19.5% in people with either type 1 or type 2

diabetes (62). Common diabetes-specific concerns include fears related to hyperglycemia (63,64), not meeting blood glucose targets (61), and insulin injections or infusion (65). General anxiety is a predictor of injection-related anxiety and associated with fear of hypoglycemia (FoH) (64,66).

Preoccupation with an imagined defect in appearance associated with having diabetes that interferes with social, occupational, or other important areas of function may reflect body dysmorphic disorder (51). When ideas and symptoms (e.g., perceived deficits in strength, attractiveness, and sexual function) do not reach the level of clinical diagnosis, identification of these beliefs provides a context for provider education about disease processes, reframing disease processes as distinct from the emotional response to having diabetes and questioning the inevitability of health decline. Onset of complications presents another critical point where these thoughts/beliefs can occur and may require re-education and disease-based counseling (67).

If the PWD exhibits excessive diabetes self-management behaviors well beyond what is prescribed or needed to achieve glycemic targets, reports repetitive negative thoughts about inability to prevent poor health outcomes, and/or has related thoughts and behaviors that interfere with other functions of daily living, the PWD may be experiencing symptoms of OCD (68). OCD symptoms can represent generalized anxiety or be diabetes specific, and referral to a mental health professional (such as a psychiatrist) familiar with OCD treatment should be considered, especially if diabetes re-education does not prove effective in reducing obsessive thoughts, behaviors, or feelings of general anxiety. Caution should be exercised in diagnosing OCD-like symptoms, as regimen behaviors contain similar characteristics, such as repetition, and are aimed at achieving control over a perceived threat.

FoH and hypoglycemia unawareness often co-occur, and interventions aimed at treating one often benefit both (69). FoH may explain avoidance of behaviors associated with lowering glucose such as increasing insulin doses or frequency of monitoring. If FoH is

identified and a person does not have symptoms of hypoglycemia, a structured program, Blood Glucose Awareness Training, delivered in routine clinical practice can improve A1C, reduce the rate of severe hypoglycemia, and restore hypoglycemia awareness (70,71). Such improvements in disease state have been shown to reduce diabetes distress and improve psychological well-being (69,72,73).

Occurrence of severe hypoglycemia has been shown to be associated with PTSD and PTSD-like and panic disorder symptoms (74,75). The potential for increased prevalence of PTSD and panic disorder in this population, though not well studied, is intuitive given the potentially life-threatening nature of the disease, particularly for those who use exogenous insulin. Given that potential stimuli for PTSD-like symptoms are recurrent for PWD, PTSD should be considered among other anxiety disorders.

Disordered Eating Behavior: Clinical and Subclinical

Recommendations

- Providers should consider re-evaluating the treatment regimen of people with diabetes who present with symptoms of disordered eating behavior, an eating disorder, or disrupted patterns of eating. **B**
- Consider screening for disordered or disrupted eating using validated screening measures when hyperglycemia and weight loss are unexplained by self-reported behaviors related to medication dosing, meal plan, and physical activity. In addition, a review of the medical regimen is recommended to identify potential treatment-related effects on hunger/caloric intake. **B**

Estimated prevalence of disordered eating behaviors and diagnosable eating disorders in PWD varies (51,76,77). PWD with diagnosable eating disorders have high rates of comorbid psychiatric disorders (78). People with type 1 diabetes and eating disorders have high rates of diabetes distress and FoH (79). For people with type 1 diabetes, insulin omission causing glycosuria in order to lose weight is the most commonly reported disordered eating behavior (80,81), and

in people with type 2 diabetes, bingeing (excessive food intake with an accompanying sense of loss of control) is most commonly reported. For people with type 2 diabetes treated with insulin, intentional omission is also frequently reported (82). Binge eating disorder has been found to be more likely in PWD than in the nondiabetes population, though studies of prevalence in specific diabetes samples show varying rates (77,83). Other diagnostic categories of eating disorders have a very low prevalence in PWD (77).

Potential confounders to the identification of symptoms of disordered eating are behaviors that are prescribed as part of treatment (e.g., carbohydrate counting and calorie restriction), behaviors or effects that are part of the disease (e.g., loss of control over satiety regulation secondary to disease processes), and adverse effects of treatment such as excessive hunger secondary to hypoglycemia. When evaluating symptoms of disordered or disrupted eating in PWD, etiology and motivation for the behavior should be considered (51,84). For example, missed insulin injections as a result of suboptimal self-management differ significantly from intentional medication omission to produce weight loss. Assessment and screening of disordered and disrupted eating requires methods that account for treatment prescription, regimen behaviors, and diabetes-specific eating problems attributable to disease processes (see Table 2). If night eating syndrome, which is recurrent eating at night either after awakening from sleep or excessive eating after dinner, is diagnosed, changes to the medication regimen are required until maladaptive eating patterns can be modified (85). Adjunctive medication such as glucagon-like peptide 1 receptor agonists (86) may not only help individuals meet glycemic targets but also help regulate hunger and food intake, thus having the potential to reduce uncontrollable hunger and bulimic symptoms.

Serious Mental Illness

Recommendations

- Annually screen people who are prescribed atypical antipsychotic medications for prediabetes/diabetes. **B**

- Incorporate monitoring of diabetes self-care activities into treatment goals in people with diabetes and serious mental illness. **B**

Studies of people with serious mental illness, particularly schizophrenia and other thought disorders, show significantly increased rates of type 2 diabetes (87). People with schizophrenia should be monitored for type 2 diabetes because of the known comorbidity. Disordered thinking and judgment can be expected to make it difficult to engage in behaviors that reduce risk factors for type 2 diabetes, such as restrained eating for weight management. Individuals with major psychiatric disorders may need consistent monitoring and oversight in their diabetes management, even if thought disorders remit. Coordinated management of diabetes or prediabetes and serious mental illness is recommended to achieve diabetes treatment targets. In addition, those taking olanzapine require greater monitoring because of an increase in risk of type 2 diabetes associated with this medication (88). Further study is needed to examine the association of other antipsychotic medications with the onset of diabetes and glycemic management (48,89).

LIFE COURSE CONSIDERATIONS

PWD are diagnosed earlier (e.g., type 2 diabetes in childhood) (90) and living longer (48). At each point in the life course, providers should consider which resources and accommodations are needed to maximize disease outcomes and well-being. In particular, identification of psychosocial factors influencing self-management are recommended (e.g., culture, environment, social determinants, life roles and responsibilities, and interpersonal dynamics, as well as person-based characteristics such as sex, race/ethnicity, age, language, and socioeconomic status) (91).

Youth and Emerging Adults

Recommendations

- At diagnosis and during routine follow-up care, consider assessing psychosocial issues and family stresses that could impact diabetes management and provide appropriate referrals to trained mental health professionals, preferably experienced in childhood diabetes. **E**

- Providers should consider monitoring youth and their parents about social adjustment (peer relationships) and school performance to determine whether further evaluation is needed. **B**
- Consider assessing youth with diabetes for generic and diabetes-related distress starting at about 7–8 years of age. **B**
- Providers should encourage developmentally appropriate family involvement in diabetes management tasks for children and adolescents, recognizing that premature transfer of diabetes care to the child can result in poor self-management behaviors and deterioration in glycemic management. **A**
- Consider the inclusion of children in consent processes as early as cognitive development indicates understanding of health consequences of behavior. **E**
- Adolescents may have time by themselves with their care provider(s) starting at age 12 years. **E**
- Providers should consider initiating discussions about care transition to an adolescent medicine/transition clinic/adult provider no later than 1 year prior to starting the transfer but preferably during early adolescence (~14 years of age). **E**
- Consider monitoring support from parents/caretakers of emerging adults with diabetes and encouraging instrumental support (e.g., ordering supplies) and collaborative decision making among caregivers. **E**
- Starting at puberty, preconception counseling should be incorporated into routine diabetes clinic visits for all females of childbearing potential. **A**
- Consider counseling males, starting at puberty, regarding adoption of a healthy lifestyle to reduce risk for sexual dysfunction. **E**

Given the rapid and dynamic nature of cognitive, developmental, and emotional changes in youth, early detection of depression, anxiety disorders, eating issues, and learning disabilities enhance the range and effectiveness of potential treatment options and may help to minimize adverse effects on diabetes management and disease outcomes.

Because youth are dependent on social support systems (family and care providers) and must eventually transition to independent diabetes self-management, their families and related social networks need to be included in psychosocial assessment and treatment (92–94). Parents of children with type 1 diabetes are prone to high rates of depression, especially around the time of diagnosis (95,45). Persistence of parental depression is associated with poorer child adjustment and diabetes management, especially in younger children (96). Teaching family members effective problem-solving and conflict-resolution skills can improve diabetes management and facilitate better glycemic management, with the potential to reduce diabetes distress (92).

The adolescent years are known for disruption in diabetes care and communication between family members, youth, and providers. Hallmarks of normal adolescence are increased independence in decision making and turning to the peer group for validation of self-concept and self-worth. Wishing to “fit in” may contribute to youth hiding or minimizing diabetes care behaviors, thereby compromising management in the school setting (97). Cognitive development and medical decision-making skills will impact a wide variety of risk-taking behaviors and acceptance of self-management behaviors into daily life (98,99). Suboptimal glycemic management should not automatically be attributed to adolescent rebellion or lack of concern for health. A thorough age-appropriate psychosocial evaluation and review of the medical regimen will suggest targets for modification to facilitate self-management and well-being. If the adolescent is resistant to accepting support from clinicians, family, and friends, the possibility of a more serious psychological issue must be considered and evaluated.

Although legal and ethical issues of youth accepting or refusing treatment components (e.g., an insulin pump) has not been extensively studied, these issues will undoubtedly surface in the process of treatment decisions. Thus, the issue of treatment consent must be considered when making regimen choices. Although cognitive abilities vary, the ethical position often adopted is the “mature minor rule,” whereby children after age 12 or 13 years who appear to be “mature” ought to have the right to consent or to withhold consent to

general medical treatment, except in cases in which refusal would significantly endanger health (99). Emerging technologies, such as phone and computer transmission of management data, can be useful in maintaining communication of information through non-confrontational channels and may provide a means for youth to communicate directly with care providers as they transition to more independent self-management (100).

Adolescents should have time by themselves with their care provider(s) starting at age 12 years. Care should be taken to respect a teen/young adult’s privacy, as lack of confidentiality is known to negatively affect adolescents’ health behavior, especially regarding what are considered taboo or risky behaviors (101). Discussions with adolescents should include questions about well-being in general, diabetes distress, and risk behaviors (e.g., substance use and sexual activity) (102,103).

Preconception counseling for females during reproductive years increases knowledge about diabetes-related risk, delays age of sexual initiation, decreases unprotected sex, and improves preconception care and health (104,105). Less research is available regarding sexual health for males, particularly in youth; however, males with diabetes have a threefold increased risk of erectile dysfunction compared with men who do not have diabetes (106,107). Open and factual discussions of these topics facilitate future comfort in disclosing any concerns regarding sexual function. As less frequent attendance to diabetes care visits is typical in the 18- to 30-year-old age-group, screening regarding risk behaviors may be necessary at each visit.

Adults

Recommendations

- In the care of adults with childbearing potential, include a discussion of life choices that could be impacted by diabetes self-management, such as pregnancy and sexual functioning. **B**
- Providers should consider assessing for the presence of social support providers (e.g., family, peer support, lay diabetes educators/caretakers) who may facilitate self-management behaviors, reduce burden of illness, and improve diabetes and general quality of life. **B**

As people enter adulthood, establishment of a work role, intimate partnering, childbearing, and parenting are typical life tasks (7). Living with and self-managing diabetes can be expected to impact all life-course decisions for PWD and their partners. PWD may question whether intimate partnering and biological parenthood are viable in the context of their health status (108). High-quality relationships with and diabetes management support from intimate partners improve diabetes-specific and general quality of life, self-management behaviors, and metabolic outcomes (7). Partner roles may change if functional ability is impacted by poor health outcomes (109). Sexual dysfunction is often associated with depression and is routinely reported in clinical encounters (see DEPRESSION). In one study of individuals with type 1 diabetes, sexual dysfunction was reported in as many as 50% of male patients (107). It is beyond the scope of these guidelines to discuss psychosocial issues related to pregnancy and gestational diabetes mellitus (see ref. 110).

Older Adults

Recommendations

- Annual screening for early detection of mild cognitive impairment or dementia is indicated for adults aged 65 years or older. **B**
- Assessment of neuropsychological function and dementia using available standards for conducting evaluations of dementia and age-related cognitive changes is recommended. **E**
- Within the primary care setting, a collaborative care model, incorporating structured nurse care management intervention, is recommended for treatment of comorbid depression in older adults with diabetes. **A**

Older adults with diabetes may be functional and cognitively intact and have significant life expectancy, and they may not require psychosocial care beyond that of younger adults. However, older adults may have issues particular to their age, such as advanced disease, cognitive dysfunction, complex treatment regimens, comorbid health conditions, functional impairment, limited social and financial resources, and depression (111). Meeting glycemic targets may be

impacted by unique nutritional requirements, physical limitations (such as reduced sensation), memory loss, and low literacy and numeracy skills. As older adults with diabetes may receive care support from family members and staff at assisted living facilities, during hospitalizations, and in long-term care facilities, the treatment regimen must consider context and caregiver capacities. Support people (e.g., adult children, caretakers) who provide instrumental, social, or emotional support for older adults with diabetes should be included in diabetes management discussions and shared decision making.

Psychosocial targets for intervention include self-management support, access to health care, and financial and emotional support, as well as day-to-day facilitation of physical and mental well-being. Within the primary care setting, older adults with diabetes and comorbid depression are likely to benefit from a collaborative care intervention approach, which uses a nurse care manager supervised by a primary care physician and psychiatrist (58,112,113).

Compared with older adults without diabetes, those with the disease are at an increased risk of mild cognitive impairment (114). A meta-analysis of prospective and observational studies in PWD showed a 73% increased risk of all types of dementia, a 56% increased risk of Alzheimer dementia, and a 127% increased risk of vascular dementia compared with individuals without diabetes (115). For detection of cognitive dysfunction, people >65 years of age should receive cognitive screening annually within routine health care, using recommended procedures and resources for practitioners (Table 2) (116–118). Medical providers should address reversible contributors to cognitive dysfunction including but not limited to depression, combinations of medications, thyroid disease, and delirium (116).

PWD in Need of Special Considerations

People With Diabetes Complications and Functional Limitations

Recommendation

- Care providers should consider routinely monitoring for chronic pain associated with diabetes complications and its impact on quality of life. Appropriate pain management

interventions, including referral to a behavioral health provider for pain management strategies, should be provided. **B**

Diabetes complications, including peripheral neuropathy, foot ulcers, limb amputation, diabetic kidney disease, vision impairment, stroke, and heart attack, are associated with depression, anxiety, reduced autonomy, role impairment, and reduced overall physical function and quality of life (119–122). Fear of complications is a major component of diabetes distress, and depression associated with complications increases mortality (123,124). Care should be taken when discussing rates, causes, and probability of diabetes complications. Providers should acknowledge that discussing complications can be uncomfortable and distressing and should encourage dialogue over multiple visits.

Chronic pain from neuropathy is associated with prevalent psychosocial distress, depression, and sleep disturbance (125,126). Care providers should routinely monitor for chronic pain associated with diabetes complications and its impact on quality of life. Appropriate pain management therapies, including referral to a mental health provider for pain self-management strategies, should be provided.

Onset of diabetes complications threatens independence, self-image, and quality of life. To identify the level of self-care independence and necessary adjunctive supports, providers should evaluate whether individuals have a cognitive impairment impacting the ability to do a task (e.g., poor memory or information processing), a functional limitation that interferes with task performance (e.g., poor motor control or impaired vision), a disability that impacts doing the task without assistance or accommodation (e.g., paralysis or amputation); or a combination of the above (127). Unless limitations are profound and/or formal evaluation clearly determines decreased capabilities, providers should not assume a patient is unable to self-manage. Reassessment of self-management efficacy, abilities, and need for adaptations or assistance is indicated with the onset or worsening of functional limitations or disabilities including vision, hearing, or physical impairment. For example, people with

visual disability may benefit from materials that meet low-vision guidelines (128).

Bariatric Surgery

Recommendations

- People presenting for bariatric surgery should receive a comprehensive mental health assessment by a professional familiar with weight-loss interventions and postbariatric surgery behavioral requirements. **B**
- If psychopathology is evident, particularly suicidal ideation and/or significant depression, postponement of surgery should be considered so that patient suffering can be addressed before adding the burden of recovery and lifestyle/psychosocial adjustment. **E**
- For people who undergo bariatric surgery, consider assessment for need of ongoing mental health services to help them adjust to medical and psychosocial changes postsurgery. **C**

Bariatric surgery supports weight loss in people with severe obesity, often with adjunctive remission of type 2 diabetes (129,130). People presenting for bariatric surgery have increased rates of depression and other major psychiatric disorders compared with healthy people and are prone to clinically significant body image disorders, sexual dysfunction, and suicidal behavior (131). Psychosocial well-being and depression, anxiety, and self-care behaviors should be an essential component of the pre- and postsurgical evaluation and monitored during the year after surgery (132).

People with preoperative psychopathology should be assessed at regular intervals following surgery to optimize control over psychiatric conditions and to ensure that psychiatric symptoms do not interfere with weight loss and/or lifestyle change. History of eating patterns, disordered eating behaviors, and clinically significant eating disorders, including night eating syndrome, should be evaluated and monitored pre- and postsurgically at regularly scheduled medical management visits. Bariatric surgery in and of itself does not alleviate psychiatric symptoms, but it may result in remission of food addiction among those who were extremely obese (133).

CONCLUSIONS: PSYCHOSOCIAL CARE IN CONTEXT

PWD must master many complex tasks and behaviors to successfully incorporate diabetes care into daily life. Disease management cannot be successful unless the lifestyle and emotional status of the individual is taken into consideration. As detailed in this Position Statement, routine monitoring and screening for diabetes distress, depression, anxiety, eating issues, and appropriate levels of social and family support, as well as contextual factors that impede implementation of care, are clearly indicated. Effectiveness of regimen and care provision will be enhanced by the inclusion of behavioral health services into the diabetes treatment team. Collaborative care shows the most promise for supporting physical and behavioral health outcomes.

The integration of screening into clinical settings, with appropriate referrals to qualified mental health professionals for reasons noted in Table 1, can improve outcomes. Challenges to accomplishing this standard of care are considerable, including too few qualified mental health professionals who understand living with diabetes and medical care models that are not conducive to team care. Those in most need, the disadvantaged lower socioeconomic level families, have the poorest access to diabetes services (134). The psychosocial services recommended are reimbursable for mental health providers in routine medical care under Centers for Medicare & Medicaid Services (CMS). In addition, new CMS reimbursement is planned for the Collaborative Care Model in routine care. With changing laws mandating minimum standards and payment for diabetes care services (135) and the availability of low-cost insurance that also reimburses preventive services, this balance is changing, allowing the practitioner to incorporate previously unsupported services into routine practice. Knowing how to evaluate and treat common psychosocial issues that impact PWD can inform routine care. The integration of psychosocial care and ensuring access to services will benefit the PWD and the care team.

Acknowledgments. The process leading to a Position Statement regarding guidelines for the psychosocial care of PWD originated during the tenure of Dr. Richard Rubin as President, Health Care & Education, ADA, 2006–2007. His

leadership in the field of behavioral diabetes helped establish the importance of psychosocial care for success in promoting the health and well-being of those affected by diabetes. The authors also thank Dr. David Marrero, President, Health Care & Education, ADA, 2013–2015, for his support of this effort.

The authors acknowledge the following contributors to the book *Psychosocial Care for People with Diabetes*, which provided the foundation material for this article: Linda Gonder-Frederick, Daniel Cox, Harsimran Singh, Jaelyn Shepard, Clarissa Holmes, Christopher Ryan, Garry Welch, Sofija Zagarins, Paula Trief, Lori Laffel, Judith Wylie-Rosett, Brook Bailer, Thomas Wadden, Lucy Faulconbridge, David Sarwar, Richard Rubin, Tim Wysocki, Barbara Anderson, David Marrero, Jill Weissberg-Benchell, Suzanne Bennett Johnson, and Linda Delahanty.

Funding. M.d.G. was funded in part by the National Institute of Diabetes and Digestive and Kidney Diseases (R18-DK-092765). J.S.G. is supported by grants from the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health (R01-DK-104845, R18-DK-098742, and P30-DK-111022).

The content and views represent those of the authors and do not represent the position of the National Institutes of Health.

Duality of Interest. F.H.-B. is a member of the ADA Board of Directors. K.H. has served as a consultant to Bigfoot Biomedical and Johnson & Johnson Diabetes Institute and has received research support from Dexcom. M.P. has received research grants from Bristol-Myers Squibb, Genentech, and Novo Nordisk; has received consulting fees from AstraZeneca, Calibra, Genentech, Eli Lilly, and Novo Nordisk; has received speaking honoraria from Novo Nordisk; and has participated in advisory panels for GlaxoSmithKline, Eli Lilly, and Novo Nordisk. No other potential conflicts of interest relevant to this article were reported.

References

1. Institute of Medicine. *Crossing the Quality Chasm: A New Health System for the 21st Century* [Internet]. Washington, DC, National Academies Press, 2001. Available from <http://www.nap.edu/catalog/10027>. Accessed 8 September 2016
2. Kahn R, Anderson JE. Improving diabetes care: the model for health care reform. *Diabetes Care* 2009;32:1115–1118
3. Ducat L, Philipson LH, Anderson BJ. The mental health comorbidities of diabetes. *JAMA* 2014;312:691–692
4. Jones A, Vallis M, Pouwer F. If it does not significantly change HbA1c levels why should we waste time on it? A plea for the prioritization of psychological well-being in people with diabetes. *Diabet Med* 2015;32:155–163
5. Young-Hyman D, Peyrot M. *Psychosocial Care for People with Diabetes*. 1st ed. Alexandria, VA, American Diabetes Association, 2012, p. 240
6. Anderson BJ. Involving family members in diabetes treatment. In *Practical Psychology for Diabetes Clinicians*. 2nd ed. Anderson BJ, Rubin RR, Eds. Alexandria, VA, American Diabetes Association, 2002, p. 199–207
7. Trief PM. Lifespan development issues for adults. In *Psychosocial Care for People with Diabetes*. 1st ed. Young-Hyman D, Peyrot M, Eds. Alexandria, VA, American Diabetes Association, 2012, p. 251–271

8. Wysocki T, Anderson BJ. Special Issues in children and adolescents. In *Psychosocial Care for People with Diabetes*. 1st ed. Young-Hyman D, Peyrot M, Eds. Alexandria, VA, American Diabetes Association, 2012, p. 229–250
9. Asche C, LaFleur J, Conner C. A review of diabetes treatment adherence and the association with clinical and economic outcomes. *Clin Ther* 2011;33:74–109
10. Hood KK, Peterson CM, Rohan JM, Drotar D. Association between adherence and glycemic control in pediatric type 1 diabetes: a meta-analysis. *Pediatrics* 2009;124:e1171–e1179
11. Schectman JM, Nadkarni MM, Voss JD. The association between diabetes metabolic control and drug adherence in an indigent population. *Diabetes Care* 2002;25:1015–1021
12. Feldman BS, Cohen-Stavi CJ, Leibowitz M, et al. Defining the role of medication adherence in poor glycemic control among a general adult population with diabetes. *PLoS One* 2014;9:e108145
13. Grant RW, Buse JB, Meigs JB; University HealthSystem Consortium (UHC) Diabetes Benchmarking Project Team. Quality of diabetes care in U.S. academic medical centers: low rates of medical regimen change. *Diabetes Care* 2005;28:337–442
14. UK Prospective Diabetes Study (UKPDS) Group. Intensive blood-glucose control with sulphonylureas or insulin compared with conventional treatment and risk of complications in patients with type 2 diabetes (UKPDS 33). *Lancet* 1998;352:837–853
15. Vigersky RA. An overview of management issues in adult patients with type 2 diabetes mellitus. *J Diabetes Sci Technol* 2011;5:245–250
16. Wallace TM, Matthews DR. Poor glycaemic control in type 2 diabetes: a conspiracy of disease, suboptimal therapy and attitude. *QJM* 2000;93:369–374
17. Lopez JM, Annunziata K, Bailey RA, Rupnow MF, Morisky DE. Impact of hypoglycemia on patients with type 2 diabetes mellitus and their quality of life, work productivity, and medication adherence. *Patient Prefer Adherence* 2014;8:683–692
18. The Diabetes Control and Complications Trial Research Group. The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med* 1993;329:977–986
19. Lachin JM, Genuth S, Nathan DM, Zinman B, Rutledge BN; DCCT/EDIC Research Group. Effect of glycemic exposure on the risk of microvascular complications in the diabetes control and complications trial—revisited. *Diabetes* 2008;57:995–1001
20. White NH, Cleary PA, Dahms W, Goldstein D, Malone J, Tamborlane WV; Diabetes Control and Complications Trial (DCCT)/Epidemiology of Diabetes Interventions and Complications (EDIC) Research Group. Beneficial effects of intensive therapy of diabetes during adolescence: outcomes after the conclusion of the Diabetes Control and Complications Trial (DCCT). *J Pediatr* 2001;139:804–812
21. Anderson RM, Funnell MM. Compliance and adherence are dysfunctional concepts in diabetes care. *Diabetes Educ* 2000;26:597–604
22. Sarkar U, Fisher L, Schillinger D. Is self-efficacy associated with diabetes self-management across race/ethnicity and health literacy? *Diabetes Care* 2006;29:823–829
23. King DK, Glasgow RE, Toobert DJ, et al. Self-efficacy, problem solving, and social-environmental support are associated with diabetes self-management behaviors. *Diabetes Care* 2010;33:751–753
24. Nouwen A, Urquhart Law G, Hussain S, McGovern S, Napier H. Comparison of the role of self-efficacy and illness representations in relation to dietary self-care and diabetes distress in adolescents with type 1 diabetes. *Psychol Health* 2009;24:1071–1084
25. Beckerle CM, Lavin MA. Association of self-efficacy and self-care with glycemic control in diabetes. *Diabetes Spectr* 2013;26:172–178
26. Iannotti RJ, Schneider S, Nansel TR, et al. Self-efficacy, outcome expectations, and diabetes self-management in adolescents with type 1 diabetes. *J Dev Behav Pediatr* 2006;27:98–105
27. Gonzalez JS, Peyrot M, McCarl LA, et al. Depression and diabetes treatment nonadherence: a meta-analysis. *Diabetes Care* 2008;31:2398–2403
28. Gherman A, Schnur J, Montgomery G, Sassu R, Veresiu I, David D. How are adherent people more likely to think? A meta-analysis of health beliefs and diabetes self-care. *Diabetes Educ* 2011;37:392–408
29. Duangdao KM, Roesch SC. Coping with diabetes in adulthood: a meta-analysis. *J Behav Med* 2008;31:291–300
30. Nam S, Chesla C, Stotts NA, Kroon L, Janson SL. Barriers to diabetes management: patient and provider factors. *Diabetes Res Clin Pract* 2011;93:1–9
31. Nieuwlaet R, Wilczynski N, Navarro T, et al. Interventions for enhancing medication adherence. *Cochrane Database Syst Rev* 2014 (11):CD000011
32. Desroches S, Lapointe A, Ratté S, Gravel K, Légaré F, Turcotte S. Interventions to enhance adherence to dietary advice for preventing and managing chronic diseases in adults. *Cochrane Database Syst Rev* 2013 (2):CD008722
33. Umpierre D, Ribeiro PA, Kramer CK, et al. Physical activity advice only or structured exercise training and association with HbA1c levels in type 2 diabetes: a systematic review and meta-analysis. *JAMA* 2011;305:1790–1799
34. Norris SL, Engelgau MM, Narayan KMV. Effectiveness of self-management training in type 2 diabetes: a systematic review of randomized controlled trials. *Diabetes Care* 2001;24:561–587
35. Driscoll KA, Young-Hyman D. Use of technology when assessing adherence to diabetes self-management behaviors. *Curr Diab Rep* 2014;14:521
36. American Diabetes Association. Foundations of Care and Comprehensive Medical Evaluation. Sec. 3. In *Standards of Medical Care in Diabetes—2016*. *Diabetes Care* 2016;39(Suppl. 1):S23–S35
37. Evert AB, Boucher RL, Cypress M, et al. Nutrition therapy recommendations for the management of adults with diabetes. *Diabetes Care* 2013;36:3821–3842
38. Nicolucci A, Kovacs Burns K, Holt RIG, et al.; DAWN2 Study Group. Diabetes Attitudes, Wishes and Needs second study (DAWN2™): cross-national benchmarking of diabetes-related psychosocial outcomes for people with diabetes. *Diabet Med* 2013;30:767–777
39. Fisher L, Hessler D, Polonsky WH, Mullan J. When is diabetes distress clinically meaningful? Establishing cut points for the Diabetes Distress Scale. *Diabetes Care* 2012;35:259–264
40. Fisher L, Glasgow RE, Strycker LA. The relationship between diabetes distress and clinical depression with glycemic control among patients with type 2 diabetes. *Diabetes Care* 2010;33:1034–1036
41. Aikens JE. Prospective associations between emotional distress and poor outcomes in type 2 diabetes. *Diabetes Care* 2012;35:2472–2478
42. Fisher L, Hessler D, Glasgow RE, et al. REDEEM: a pragmatic trial to reduce diabetes distress. *Diabetes Care* 2013;36:2551–2558
43. Fisher L, Skaff MM, Mullan JT, et al. Clinical depression versus distress among patients with type 2 diabetes: not just a question of semantics. *Diabetes Care* 2007;30:542–548
44. Hagger V, Hendrieckx C, Sturt J, Skinner TC, Speight J. Diabetes distress among adolescents with type 1 diabetes: a systematic review. *Curr Diab Rep* 2016;16:9
45. Hessler D, Fisher L, Polonsky W, Johnson N. Understanding the areas and correlates of diabetes-related distress in parents of teens with type 1 diabetes. *J Pediatr Psychol* 2016;41:750–758
46. Snoek FJ, Bremmer MA, Hermanns N. Constructs of depression and distress in diabetes: time for an appraisal. *Lancet Diabetes Endocrinol* 2015;3:450–460
47. Anderson RJ, Freedland KE, Clouse RE, Lustman PJ. The prevalence of comorbid depression in adults with diabetes: a meta-analysis. *Diabetes Care* 2001;24:1069–1078
48. McIntyre RS, Konarski JZ, Misener VL, Kennedy SH. Bipolar disorder and diabetes mellitus: epidemiology, etiology, and treatment implications. *Ann Clin Psychiatry* 2005;17:83–93
49. Mezuk B, Eaton WW, Albrecht S, Golden SH. Depression and type 2 diabetes over the lifespan: a meta-analysis. *Diabetes Care* 2008;31:2383–2390
50. Anderson RJ, Grigsby AB, Freedland KE, et al. Anxiety and poor glycemic control: a meta-analytic review of the literature. *Int J Psychiatry Med* 2002;32:235–247
51. Young-Hyman DL, Davis CL. Disordered eating behavior in individuals with diabetes: importance of context, evaluation, and classification. *Diabetes Care* 2010;33:683–689
52. Lawrence JM, Standiford DA, Loots B, et al.; SEARCH for Diabetes in Youth Study. Prevalence and correlates of depressed mood among youth with diabetes: the SEARCH for Diabetes in Youth study. *Pediatrics* 2006;117:1348–1358
53. Lustman PJ, Griffith LS, Clouse RE. Depression in adults with diabetes. Results of 5-yr follow-up study. *Diabetes Care* 1988;11:605–612
54. de Groot M, Crick KA, Long M, Saha C, Shubrook JH. Lifetime duration of depressive disorders in patients with type 2 diabetes. *Diabetes Care* 2016;39:2174–2181
55. Rubin RR, Ma Y, Marrero DG, et al.; Diabetes Prevention Program Research Group. Elevated depression symptoms, antidepressant medicine use, and risk of developing diabetes during the diabetes prevention program. *Diabetes Care* 2008;31:420–426
56. Clouse RE, Lustman PJ, Freedland KE, Griffith LS, McGill JB, Carney RM. Depression and coronary heart disease in women with diabetes. *Psychosom Med* 2003;65:376–383
57. Katon WJ, Lin EH, Von Korff M, et al. Collaborative care for patients with depression and chronic illnesses. *N Engl J Med* 2010;363:2611–2620

58. Piette JD, Richardson C, Himle J, et al. A randomized trial of telephonic counseling plus walking for depressed diabetes patients. *Med Care* 2011;49:641–648
59. Umpierre D, Ribeiro PA, Kramer CK, et al. Physical activity advice only or structured exercise training and association with HbA1c levels in type 2 diabetes: a systematic review and meta-analysis. *JAMA* 2011;305:1790–1799
60. Colberg SR, Sigal RJ, Yardley JE, et al. Physical activity/exercise and diabetes: a Position Statement of the American Diabetes Association. *Diabetes Care* 2016;39:2065–2079
61. Smith KJ, Béland M, Clyde M, et al. Association of diabetes with anxiety: a systematic review and meta-analysis. *J Psychosom Res* 2013;74:89–99
62. Li C, Barker L, Ford ES, Zhang X, Strine TW, Mokdad AH. Diabetes and anxiety in US adults: findings from the 2006 Behavioral Risk Factor Surveillance System. *Diabet Med* 2008;25:878–881
63. Cox DJ, Irvine A, Gonder-Frederick L, Nowacek G, Butterfield J. Fear of hypoglycemia: quantification, validation, and utilization. *Diabetes Care* 1987;10:617–621
64. Wild D, von Maltzahn R, Brohan E, Christensen T, Clauson P, Gonder-Frederick L. A critical review of the literature on fear of hypoglycemia in diabetes: Implications for diabetes management and patient education. *Patient Educ Couns* 2007;68:10–15
65. Zambanini A, Newson RB, Maisey M, Feher MD. Injection related anxiety in insulin-treated diabetes. *Diabetes Res Clin Pract* 1999;46:239–246
66. Mitsonis C, Dimopoulos N, Psarra V. Clinical implication of anxiety in diabetes: a critical review of the evidence base. *Eur Psychiatry* 2009;24:5526
67. Rubin RR, Peyrot M. Psychosocial adjustment to diabetes and critical periods of psychological risk. In *Psychosocial Care for People with Diabetes*. Young-Hyman D, Peyrot M, Eds. Alexandria, VA, American Diabetes Association, 2012, p. 219–228
68. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*. Arlington, VA, American Psychiatric Publishing, 2013
69. Yeoh E, Choudhary P, Nwokolo M, Ayis S, Amiel SA. Interventions that restore awareness of hypoglycemia in adults with type 1 diabetes: a systematic review and meta-analysis. *Diabetes Care* 2015;38:1592–1609
70. Cox DJ, Gonder-Frederick L, Polonsky W, Schlundt D, Kovatchev B, Clarke W. Blood Glucose Awareness Training (BGAT-2). *Diabetes Care* 2001;24:637–642
71. Gonder-Frederick LA, Schmidt KM, Vajda KA, et al. Psychometric properties of the hypoglycemia fear survey-ii for adults with type 1 diabetes. *Diabetes Care* 2011;34:801–806
72. Walz L, Pettersson B, Rosenqvist U, Deleskog A, Journath G, Wandell P. Impact of symptomatic hypoglycemia on medication adherence, patients satisfaction with treatment, and glycemic control in patients with type 2 diabetes. *Patient Prefer Adherence* 2014;8:593–601
73. Lopez JM, Annunziata K, Bailey RA, Rupnow MF, Morisky DE. Impact of hypoglycemia on patients with type 2 diabetes mellitus and their quality of life, work productivity, and medication adherence. *Patient Prefer Adherence* 2014;8:683–692
74. Egede LE, Dismuke CE. Serious psychological distress and diabetes: a review of the literature. *Curr Psychiatry Rep* 2012;14:15–22
75. Trief PM, Ouimette P, Wade M, Shanahan P, Weinstock RS. Post-traumatic stress disorder and diabetes: co-morbidity and outcomes in a male veterans sample. *J Behav Med* 2006;29:411–418
76. Pinhas-Hamiel O, Hamiel U, Levy-Shraga Y. Eating disorders in adolescents with type 1 diabetes: Challenges in diagnosis and treatment. *World J Diabetes* 2015;6:517–526
77. Papelbaum M, Appolinário JC, Moreira RdeO, Ellinger VC, Kupfer R, Coutinho WF. Prevalence of eating disorders and psychiatric comorbidity in a clinical sample of type 2 diabetes mellitus patients. *Rev Bras Psiquiatr* 2005;27:135–138
78. Hudson JI, Hiripi E, Pope HG Jr, Kessler RC. The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biol Psychiatry* 2007;61:348–358
79. Martyn-Nemeth P, Quinn L, Hacker E, Park H, Kujath AS. Diabetes distress may adversely affect the eating styles of women with type 1 diabetes. *Acta Diabetol* 2014;51:683–686
80. Pinhas-Hamiel O, Hamiel U, Greenfield Y, et al. Detecting intentional insulin omission for weight loss in girls with type 1 diabetes mellitus. *Int J Eat Disord* 2013;46:819–825
81. Goebel-Fabbri AE, Fikkan J, Franko DL, Pearson K, Anderson BJ, Weinger K. Insulin restriction and associated morbidity and mortality in women with type 1 diabetes. *Diabetes Care* 2008;31:415–419
82. Weinger K, Beverly EA. Barriers to achieving glycemic targets: who omits insulin and why? *Diabetes Care* 2010;33:450–452
83. Crow S, Kendall D, Praus B, Thuras P. Binge eating and other psychopathology in patients with type II diabetes mellitus. *Int J Eat Disord* 2001;30:222–226
84. Peterson CM, Fischer S, Young-Hyman D. Topical review: a comprehensive risk model for disordered eating in youth with type 1 diabetes. *J Pediatr Psychol* 2015;40:385–390
85. Morse SA, Ciechanowski PS, Katon WJ, Hirsch IB. Isn't this just bedtime snacking? The potential adverse effects of night-eating symptoms on treatment adherence and outcomes in patients with diabetes. *Diabetes Care* 2006;29:1800–1804
86. Garber AJ. Novel GLP-1 receptor agonists for diabetes. *Expert Opin Investig Drugs* 2012;21:45–57
87. Suvisaari J, Perälä J, Saarni SI, et al. Type 2 diabetes among persons with schizophrenia and other psychotic disorders in a general population survey. *Eur Arch Psychiatry Clin Neurosci* 2008;258:129–136
88. Koro CE, Fedder DO, L'Italien GJ, et al. Assessment of independent effect of olanzapine and risperidone on risk of diabetes among patients with schizophrenia: population based nested case-control study. *BMJ* 2002;325:243
89. Schulte PF, Bocxe JT, Doodeman HJ, van Haelst IM, Cohen D. Risk of new-onset diabetes after long-term treatment with clozapine in comparison to other antipsychotics in patients with schizophrenia. *J Clin Psychopharmacol* 2016;36:115–119
90. Dabelea D, Mayer-Davis EJ, Saydah S, et al.; SEARCH for Diabetes in Youth Study. Prevalence of type 1 and type 2 diabetes among children and adolescents from 2001 to 2009. *JAMA* 2014;311:1778–1786
91. Golden SH, Brown A, Cauley JA, et al. Health disparities in endocrine disorders: biological, clinical, and nonclinical factors—an Endocrine Society scientific statement. *J Clin Endocrinol Metab* 2012;97:E1579–E1639
92. Wysocki T, Harris MA, Buckloh LM, et al. Effects of behavioral family systems therapy for diabetes on adolescents' family relationships, treatment adherence, and metabolic control. *J Pediatr Psychol* 2006;31:928–938
93. Anderson B, Ho J, Brackett J, Finkelstein D, Laffel L. Parental involvement in diabetes management tasks: relationships to blood glucose monitoring adherence and metabolic control in young adolescents with insulin-dependent diabetes mellitus. *J Pediatr* 1997;130:257–265
94. Gruhn MA, Lord JH, Jaser SS. Collaborative and overinvolved parenting differentially predict outcomes in adolescents with type 1 diabetes. *Health Psychol*. 21 March 2016 [Epub ahead of print]
95. Streisand R, Mackey ER, Elliot BM, et al. Parental anxiety and depression associated with caring for a child newly diagnosed with type 1 diabetes: opportunities for education and counseling. *Patient Educ Couns* 2008;73:333–338
96. Ducat L, Rubenstein A, Philipson LH, Anderson BJ. A review of the mental health issues of diabetes conference. *Diabetes Care* 2015;38:333–338
97. Silverstein J, Klingensmith G, Copeland K, et al.; American Diabetes Association. Care of children and adolescents with type 1 diabetes: a statement of the American Diabetes Association. *Diabetes Care* 2005;28:186–212
98. Kuther TL. Medical decision-making and minors: issues of consent and assent. *Adolescence* 2003;38:343–358
99. Coleman DL, Rosoff, PM. The legal authority of mature minors to consent to general medical treatment. *Pediatrics* 2013;131:786–793
100. Driscoll, KA, Young-Hyman, D Use of technology when assessing adherence to diabetes self-management behaviors. *Curr Diab Rep* 2014;14:521
101. Peters A, Laffel L; American Diabetes Association Transitions Working Group. Diabetes care for emerging adults: recommendations for transition from pediatric to adult diabetes care systems. *Diabetes Care* 2011;34:2477–2485
102. Hanna KM, Stupiansky NW, Weaver MT, Slaven JE, Stump TE. Alcohol use trajectories after high school graduation among emerging adults with type 1 diabetes. *J Adolesc Health* 2014;55:201–208
103. Jaser SS, Yates H, Dumser S, Whittemore R. Risky business: risk behaviors in adolescents with type 1 diabetes. *Diabetes Educ*. 2011;37:756–764
104. Sereika S, Schmitt P, Powell A, et al. Long-term effects of preconception counseling (PC) during adolescence on family planning vigilance (FPV) in adult women with type 1 diabetes (T1D): 15 year follow-up. *Diabetes* 2014;63(Suppl. 1):A198
105. Charron-Prochownik D, Sereika SM, Becker D, et al. Long-term effects of the booster-enhanced READY-Girls preconception counseling program on intentions and

- behaviors for family planning in teens with diabetes. *Diabetes Care* 2013;36:3870–3874
106. Maiorino MI, Bellastella G, Esposito K. Diabetes and sexual dysfunction: current perspectives. *Diabetes Metab Syndr Obes* 2014;7:95–105
107. Hatzimouratidis K, Hatzichristou D. How to treat erectile dysfunction in men with diabetes: from pathophysiology to treatment. *Curr Diab Rep* 2014;14:545
108. Sereika SM, Becker D, Schmitt P, et al. Operationalizing and examining family planning vigilance in adult women with type 1 diabetes. *Diabetes Care* 2016;39:2197–2203
109. Beverly E, Wray LA, Miller CK. Practice implications of what couples tell us about type 2 diabetes management. *Diabetes Spectr* 2008;21:39–45
110. Wouters MG, Snoek FJ. Psychological issues in the management of diabetes and pregnancy. In *Psychology in Diabetes Care*. 2nd ed. Snoek FJ, Skinner TC, Eds. Chichester, U.K., Wiley, 2005
111. Kirkman MS, Briscoe VJ, Clark N, et al. Diabetes in older adults. *Diabetes Care* 2012;35:2650–2664
112. Unützer J, Katon W, Callahan CM, et al.; IMPACT Investigators. Improving Mood-Promoting Access to Collaborative Treatment. Collaborative care management of late-life depression in the primary care setting: a randomized controlled trial. *JAMA* 2002;288:2836–2845
113. Katon WJ, Von Korff M, Lin EHB, et al. The Pathways Study: a randomized trial of collaborative care in patients with diabetes and depression. *Arch Gen Psychiatry* 2004;61:1042–1049
114. Luchsinger JA, Reitz C, Patel B, Tang MX, Manly JJ, Mayeux R. Relation of diabetes to mild cognitive impairment. *Arch Neurol* 2007;64:570–575
115. Gudala K, Bansal D, Schifano F, Bhansali A. Diabetes mellitus and risk of dementia: a meta-analysis of prospective observational studies. *J Diabetes Investig* 2013;4:640–650
116. Institute of Medicine (IOM). Health care response to cognitive aging. In *IOM, Cognitive Aging: Progress in Understanding and Opportunities for Action*. Washington, DC, The National Academies Press, 2015, p. 209–226
117. American Psychological Association. Guidelines for the evaluation of dementia and age-related cognitive change. *Am Psychol* 2012;67:1–9
118. Palta P, Schneider AL, Biessels GJ, Touradj P, Hill-Briggs F. Magnitude of cognitive dysfunction in adults with type 2 diabetes: a meta-analysis of six cognitive domains and the most frequently reported neuropsychological tests within domains. *J Int Neuropsychol Soc* 2014;20:278–291
119. Vileikyte L, Peyrot M, Gonzalez JS, et al. Predictors of depressive symptoms in persons with diabetic peripheral neuropathy: a longitudinal study. *Diabetologia* 2009;52:1265–1273
120. Carrington AL, Mawdsley SK, Morley M, Kinsey J, Boulton AJ. Psychological status of diabetic people with or without lower limb disability. *Diabetes Res Clin Pract* 1996;32:19–25
121. Palmer S, Vecchio M, Craig JC, et al. Prevalence of depression in chronic kidney disease: systematic review and meta-analysis of observational studies. *Kidney Int* 2013;84:179–191
122. Cukor D, Coplan J, Brown C, et al. Anxiety disorders in adults treated by hemodialysis: a single-center study. *Am J Kidney Dis* 2008;52:128–136
123. Winkley K, Sallis H, Kariyawasam D, et al. Five-year follow-up of a cohort of people with their first diabetic foot ulcer: the persistent effect of depression on mortality. *Diabetologia* 2012;55:303–310
124. Palmer SC, Vecchio M, Craig JC, et al. Association between depression and death in people with CKD: a meta-analysis of cohort studies. *Am J Kidney Dis* 2013;62:493–505
125. Vinik AI, Park TS, Stansberry KB, Pittenger GL. Diabetic neuropathies. *Diabetologia* 2000;43:957–973
126. Argoff CE, Cole BE, Fishbain DA, Irving GA. Diabetic peripheral neuropathic pain: clinical and quality-of-life issues. *Mayo Clin Proc* 2006;81(Suppl.):S3–S11
127. Hill-Briggs F. Diabetes-related functional impairment and disability. In *Psychosocial Care for People with Diabetes*. Young-Hyman D, Peyrot M, Eds. American Diabetes Association, Alexandria, VA, 2012, p. 273–289
128. American Association of Diabetes Educators (AADE). Diabetes education for people with disabilities. *Diabetes Educ* 2002;28:916–921
129. Inge TH, Courcoulas AP, Jenkins TM, et al.; Teen-LABS Consortium. Weight loss and health status 3 years after bariatric surgery in adolescents. *N Engl J Med* 2016;374:113–123
130. Keidar, A Bariatric surgery for type 2 diabetes reversal: the risks. *Diabetes Care* 2011;34(Suppl. 2):S361–S266
131. Kalarchian MA, Marcus MD, Levine MD, et al. Psychiatric disorders among bariatric surgery candidates: relationship to obesity and functional health status. *Am J Psychiatry* 2007;164:328–334; quiz 374
132. Greenberg I, Sogg S, M Perna F. Behavioral and psychological care in weight loss surgery: best practice update. *Obesity (Silver Spring)* 2009;17:880–884
133. Pepino MY, Stein RI, Eagon JC, Klein S. Bariatric surgery-induced weight loss causes remission of food addiction in extreme obesity. *Obesity (Silver Spring)* 2014;22:1792–1798
134. Hill J, Nielsen M, Fox MH. Understanding the social factors that contribute to diabetes: a means to informing health care and social policies for the chronically ill. *Perm J* 2013;17:67–72
135. Burge MR, Schade DS. Diabetes and the Affordable Care Act. *Diabetes Technol Ther* 2014;16:399–413