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The Psychosocial Challenges and Care of Older Adults with Diabetes: “Can’t do what I used to do; can’t be who I once was”

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Abstract

The prevalence of diabetes is increasing in older populations worldwide. Older adults with diabetes have unique psychosocial challenges that impact self-care and glycemic control. These challenges may include psychological factors such as depression or anxiety; social factors such as loss of independence and removal from home environment/placement in a facility; and medical factors such as multiple comorbidities and polypharmacy. Importantly, these challenges interact and complicate the everyday life of the older adult with diabetes. Thus, timely identification and interventions for psychosocial challenges are a necessary component of diabetes care. This review summarizes the current literature, research findings, and clinical recommendations for psychosocial care in older adults with diabetes.

Keywords

Diabetes; Psychosocial Challenges; Depression; Diabetes Distress; Aging

INTRODUCTION

Rates of diabetes increase with advancing age. The global prevalence of diabetes among adults aged 60 years and older is 19% – approximately 135 million people – and accounts for 35% of all cases of diabetes in adults[1]. All types of diabetes are on the rise, with type 2 diabetes in particular. By 2035, the number of older adults with diabetes is projected to reach 253 million[1]. Older adults with diabetes have higher rates of diabetes-related complications and are more likely to present with comorbid conditions, such as cognitive

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dysfunction, falls and fractures, visual problems, chronic pain, and psychosocial challenges such as depression, diabetes distress, and anxiety, social isolation, and comorbidity[2], which are associated with worsening glycemic control[3] and may interfere with the performance of self-care behaviors[4, 5]. Moreover, the direct and indirect costs of diabetes and its psychosocial challenges are high. The overall cost of diabetes represents 11% of total health spending worldwide or 548 billion dollars[1]. Thus, improved diabetes care is vital to diminish the morbidity and mortality associated with diabetes as well as global health expenditures.

In this review, we discuss the current literature on diabetes and psychosocial challenges in older adults. First, we discuss psychological challenges in older adults, followed by discussions of social challenges and medical challenges. In each section we discuss treatment and interventions needed to address psychosocial challenges and, in turn, improve clinical outcomes among older adults with diabetes. Studies referenced in this review define older adults as age 60 years and older.

Psychological Challenges

Depression and Depressive Symptoms—Older adults with diabetes experience disproportionately high rates of depression and depressive symptoms[6–15]. An estimated 14%–28% of older adults with diabetes have depression[16–19], which is two to four times higher than that the general population aged 65 and older[20]. Depression negatively impacts adherence to self-care regimens[3–5] and contributes to worsening glycemic control[3]. Further, depression is associated with the presence of serious complications (e.g., retinopathy, neuropathy, nephropathy, macrovascular complications of cardiovascular disease, hypertension, and sexual dysfunction[6, 21–24]), poor physical functioning[17], increased hospitalization and mortality[25]. Depression in older adults is particularly troublesome given that global suicide rates are highest in people aged 70 years and older[26–28]. Thus, timely diagnosis and treatment of depression is necessary to mitigate risk of suicide and improve self-care and clinical outcomes among older adults with diabetes.

Diagnosis and treatment of depression in older adults with diabetes is frequently under-recognized and under-treated[29–32], with less than 25% cases successfully identified and treated in clinical practice[33]. Further, 75% patients who recover from an episode of depression will suffer a relapse within five years[34]. Older adults' symptoms may vary from typical depressive symptoms observed in younger adults[35], and thus not meet the criteria from the American Psychiatric Association DSM-V[36]. For example, older adults may not feel sad or experience bouts of hyperactivity[35]. Also, for patients with diabetes, symptoms of hyperglycemia (e.g., loss of concentration, fatigue, hypersomnia, psychomotor slowing) and hypoglycemia (e.g., irritability, fatigue, decrease in recent memory) can mimic symptoms of depression, thus complicating the diagnosis of depression[37]. Other health conditions associated with aging, such as thyroid disorders, sleep apnea, alcohol or drug abuse, polypharmacy, and dementia[38, 39], also overlap with symptoms of depression (e.g., fatigue, changes in appetite). Notably, depression and dementia share multiple overlapping symptoms including psychomotor slowing, memory loss, and changes in appetite and

sleeping patterns. Special attention to the differences in the time course and progression of symptoms is needed to distinguish between the two diagnoses[40]. Providers should rule out these possibilities via a thorough history and physical examination and laboratory tests[40]. Failure to diagnose depression in older adults is serious because of the long-term, life-threatening risks for complications[6, 21–24], functional disability, hospitalization, and mortality[25].

Patient and provider barriers also contribute to the difficulty diagnosing depression in older adults with diabetes. Older adults may attach stigma to mental health issues and consequently disagree with a provider's diagnosis of depression[41]. Further, older adults may be reluctant to communicate symptoms of depression due to treatment-related concerns (e.g., financial, insurance, multiple medications)[42, 43], prioritization of other health conditions[44], or lack of a support system[45]. In addition, older adults may have difficulty recognizing the symptoms of depression because they often present atypically[35]. Similarly, providers may struggle with the identification of depression because they lack the knowledge of atypical depression symptoms[35, 45] and/or psychological expertise to diagnose patients with depression[46, 47], and other chronic health conditions may take precedence during an already time-constrained medical visit. Finally, providers may stigmatize mental illness or believe that depression is a normal part of the aging process[42].

Diabetes care guidelines recommend older adults be screened for depression and depressive symptoms using a standardized screening tool during the initial evaluation and when older adults show a deterioration in glycemia and/or unexplained declines in health status[39, 48]. The primary use of screening is to identify patients at high risk for depression. Instruments that are brief and utilize straightforward scoring systems that provide an estimate of the number and severity of depressive symptoms[49]. Screening instruments that have been developed to target depression in older adults or have been validated in older adults with diabetes include the Geriatric Depression Scale (GDS)[50, 51], Center for Epidemiologic Studies Depression Scale (CES-D)[52], the Beck Depression Inventory (BDI [53], the World Health Organization 5-item Well-Being Index (WHO-5)[54–56], and the Patient Health Questionnaire-9 (PHQ-9) [57].

More research on the effects of antidepressant medication and psychotherapy is recommended to advance current treatment strategies for depression in older adults[58, 59]. The present clinical approach is comprehensive and includes patient education, individualized and patient-centered management, quality integrative care for comorbid conditions, attention to the development of adverse effects of medications, and frequent regular follow-up assessments. The depression diagnosis is made using the DSM-V criteria and all medical conditions and medication side effects that mimic depression should be ruled out before a depression diagnosis is finalized[58]. Suicidal or homicidal ideation will necessitate prompt psychiatric referral and intervention[58, 60]. Treatment options for depression in older adults may include psychotherapy, medications, electroconvulsive therapy (ECT), and lifestyle modifications such as exercise. The characterizing features of the patient's depression as well as the patient's preference, family history, past medical history, treatment contraindications, financial state, and access to resources should be taken in consideration when forming a management plan for late-life depression[58, 61].

Psychotherapy is generally beneficial and safe, yet underutilized for depression in the older population due to the limited availability of adequately trained therapists and issues regarding financing and insurance coverage[59, 62]. Psychotherapy has many types, settings, and arrangements; however cognitive-behavioral therapy (CBT) is the most extensively studied psychotherapy, and has been found to be the most useful psychotherapy for treating depression in older adults[58, 59, 63]. Multiple studies have found that CBT in combination with antidepressants is the most efficacious intervention for depression in older adults[58].

Antidepressant medication is widely considered an effective option to treat depression in clinical practice; however, the evidence regarding the efficacy of antidepressants is limited and suggests that antidepressant medication could be a less favorable option for older adults with comorbid conditions due to risks associated with the medications and polypharmacy[63, 64]. When using pharmacotherapy to treat depression in older adults with diabetes, a monotherapy approach is ideal, and lower doses may be necessary[58, 64]. The antidepressant medications considered first-line are selective serotonin reuptake inhibitors (SSRIs) because they are generally well-tolerated, simple to use, and reasonably safe[65]. Second-line agents include serotonin-norepinephrine reuptake inhibitors (SNRIs), which are frequently utilized for cases with coexisting neuropathic pain, a common complication of diabetes[66]. Studies comparing the efficacy of SNRIs and SSRIs in older adults are limited, but evidence suggests that medications from both classes are useful in treating late-life depression[67]. Antidepressant medications like the SSRIs and SNRIs generally require several weeks of regular use before effectiveness is demonstrated; however, this period of time could be much longer for older adults[65]. The duration of treatment may vary, but the usual course extends at least six to nine months beyond the time of full remission[68]. Older adults appear to have a higher risk of relapse when compared to younger people, which may necessitate longer periods of maintenance therapy. Studies show that maintenance therapy with medication can reduce recurrent episodes of depression[66, 69]. Other depression medications such as atypical antidepressants, serotonin modulators, tricyclic antidepressants (TCAs), and monoamine oxidase inhibitors (MAOIs) may be considered in cases of depression refractory to first and second-line treatments[66]. Adjunctive therapies such as methylphenidate used in combination with other antidepressant medications may improve treatment outcomes in depression based on limited evidence, but not without an increased risk of respective adverse effects[66]. Monotherapy with second-generation antipsychotics are not recommended as first or second-line therapy due to its association with a multitude of adverse effects including metabolic syndrome, a collection of risk factors which increases the risk of developing heart disease and diabetes[66].

Electroconvulsive Therapy (ECT) is an option for older adults with contraindications to antidepressant medications, refractory depression, and severe depression in which functioning is significantly impaired[58, 70, 71]. ECT is widely considered to be useful and safe for older adults[72]. However, many patients treated successfully with ECT will relapse and require maintenance therapy with either ECT or antidepressant medication[71].

Finally, exercise interventions can be used as a first-line treatment for mild depression, and may be particularly useful in physically able older adults with diabetes[73, 74]. Exercise

interventions are limited by the physical functioning of the patient, but are safe, cost-effective, and helpful for many common comorbidities in the older adult[74, 75].

Diabetes Distress—Older adults experience diabetes distress, which is distinct from depression as distress develops from living with diabetes[14, 15]. Diabetes distress includes frustration with self-care, concerns about diabetes complications and the future, worries about the quality of medical care and the cost of that care, and perceived lack of support from family members and/or friends[76–78]. Diabetes distress is actually more common than depression in individuals with diabetes with a prevalence of 18–35%[15, 79–82]. Similar to depression, diabetes distress is associated with worsening glycemic control[76, 78, 80, 83], reduced self-care[78, 84] and increased morbidity[85]. What is not known is whether or not rates of diabetes distress are higher among older adults. Many older adults may feel overwhelmed with the demands of self-care, perceive limited support from healthcare providers, or experience confusion regarding conflicting treatment recommendations for multiple health conditions[44, 86]. Lowering diabetes distress in older adults may be all the more important given recent research demonstrating an association between diabetes distress and glycemia[76, 80]. For this reason, an improved understanding of the frequency and seriousness of diabetes distress in older adults is needed.

Effective screening tools, such as the Diabetes Distress Scale[87] or the Problem Areas in Diabetes[12], may aid providers in recognizing diabetes distress during a medical visit. Improving providers' ability to recognize and respond to older adults' diabetes distress may help gain their trust[88], which can increase adherence to treatment recommendations and self-care behaviors[89]. While diabetes distress is not a new concept in diabetes care, only a few validated treatments are available. Further, interventions tailored to older adults are needed. Problem-solving interventions specific to diabetes and diabetes self-management education may reduce diabetes distress as well as improve diabetes self-care behaviors[90]; however, older adults may have cognitive limitations that interfere with effective use of problem-solving. Moreover, this intervention has not been exclusively evaluated in an older sample of diabetes patients. More research is needed to establish safe and effective treatments (e.g., exercise, medical nutrition therapy, psychotherapy) for diabetes distress, particularly treatments tailored to the unique needs of the older population.

Anxiety—Many persons with diabetes and depression also have comorbid anxiety disorders, such as generalized anxiety disorder or panic disorder[91]. Comorbid anxiety disorders and elevated anxiety symptoms have been shown to be associated with increased diabetes complications, worsened blood glucose levels, reduced quality of life, increased depression, increased body-mass index (BMI) and greater disability[91]. Anxiety may complicate diabetes management by increasing patients' difficulty distinguishing between feelings of anxiety and symptoms of hypoglycemia, fear of taking insulin injections or possible needle phobia, and managing blood glucose levels because of fear of hypoglycemia, which can lead some patients to maintain blood glucose levels above target levels. Cognitive behavioral therapy, relaxation techniques, and pharmacotherapy are effective in reducing anxious and phobic behaviors.

Diabetes-Related Quality of Life—Achieving and maintaining quality of life (QOL) after the diagnosis and subsequent progression of diabetes are significant challenges. Quality of life is a multi-dimensional concept of an individual's subjective evaluations of physical, social, and emotional well-being. In the context of diabetes, quality of life takes into consideration the impact of diabetes on an individual's physical and psychosocial functioning, health beliefs, and perceived well-being. In general, individuals' value feeling well and place a high priority on maintaining and improving the way they feel. However, for individuals with diabetes, the complex self-care demands and risk of developing complications can negatively affect physical and psychosocial functioning, health beliefs, and perceived well-being. Further, psychological challenges commonly associated with diabetes (e.g., depression and depressive symptoms, diabetes distress, anxiety) may compound diabetes' impact on quality of life. For this reason, diabetes-related quality of life is subject to change over the course of the disease.

Currently no gold standard instrument exists for the assessment of diabetes-related quality of life. Both general health and diabetes-related quality of life instruments have evaluated diabetes challenges, focusing on varying levels of symptoms and complications. General health quality of life instruments (i.e., instruments not focusing on a specific disease such as diabetes) provide valuable information on quality of life in older adults with diabetes. The EuroQol quality of life tool (EQ-5D) assesses mobility, self-care, usual activities, pain, anxiety, and depression, and incorporates a visual analogue scale that allows adults to indicate their quality of life on a scale of 0 to 100 [92]. The Short Form 36 (SF-36) is another well used general instrument measuring functional health status, which is an important aspect of quality of life[93]. These general measures allow for comparison of quality of life between diabetes patients and the general population with other chronic conditions. The Diabetes Quality of Life (DQOL) [94] measure was developed for the Diabetes Complications and Control Trial (DCCT)[95]. The DCCT found that the intensity of diabetes treatment did not impair diabetes quality of life, even for those individuals treated with intensive insulin regimens[96]. The Well-Being Questionnaire [97] is another diabetes-related quality of life instrument developed by the World Health Organization.

Social Challenges

Major life changes in older age, such as retirement, bereavement, loneliness, isolation, loss of independence, relocation or institutionalization, fears about mortality, and ageism, can have a negative effect on health and well-being. Often older adults struggle to accept new transitions and let go of past lifestyles and relationships. Diabetes may compound these social challenges and thus complicate the day-to-day life of older adults. Difficulty adjusting to major life changes may be reflected in physical (e.g., sleep disturbances, somatic complaints) and psychological symptoms (e.g., anxiety and worries, preoccupation with own mortality). Family members, friends, caregivers and providers are well-positioned to recognize these symptoms and provide appropriate support[98–110]. Diabetes education and behavioral interventions that promote social support, social influence, social engagement, and access to resources for older adults are needed.

Medical Challenges

Comorbidity and Diabetes Complications—The number of health conditions increases with advancing age, such that 4 out of 5 adults aged 65–74 years and 5 out of 6 adults aged 75 and older are diagnosed with at least one comorbid condition in addition to their diabetes[111]. Specifically, rates of coronary heart disease, stroke, congestive heart failure, hypertension, neuropathy, visual impairment, and arthritis are significantly higher among older adults with diabetes compared to similar age adults without diabetes[112]. Further, older adults with multiple health conditions are more likely to report greater functional disability and poorer self-rated health[113].

For older adults, comorbidity and diabetes complications may pose competing demands that require substantial time, energy, and money to manage effectively[44, 114–116]. For example, some older adults may perceive certain conditions as more serious than diabetes and selectively care for those conditions based on perceived severity or importance[44]. Diabetes care also may involve subjective tradeoffs between quality of life and diabetes progression[117, 118]. For this reason, some older adults with similar clinical characteristics may differ in their willingness to accept intensive treatment recommendations, such as the initiation of insulin therapy. Finally, older adults may not associate psychological and functional changes with diabetes progression. For example, older adults may not know that improving glycemic control can reduce neuropathic pain[119]. Thus, the provider's role is to help older adults understand the relationships of comorbidity and diabetes complications with diabetes self-care and overall health.

Relatedly, diabetes education and behavioral interventions should address the relationship between complications and diabetes progression. Improving older adults' understanding of the impact of comorbidity and diabetes complications on self-care, glycemia, and quality of life is critical for improving health outcomes. Comorbidity and diabetes complications may require older adults with diabetes to take multiple medications, which can lead to drug side effects and drug-drug and drug-disease interactions[39]. Providers need to be aware that comorbidity and diabetes complications have differential impacts on older adults' self-care, glycemia, and well-being.

Cognitive Impairment—Diabetes and older age are risk factors for cognitive impairment[120, 121]. Cognitive impairment ranges from mild to severe impairment. For some, mild cognitive impairment may go unrecognized by patients, family members, and providers[122]. Many older adults with mild cognitive impairment are able to engage in activities of daily living and self-care behaviors with minimal assistance. For cases of severe cognitive impairment, older adults lose the ability to think, remember and reason and therefore is no longer able to carry out usual activities such as bathing or dressing independently [123].

A recent United States Preventive Services Task Force[123] guideline concluded that there is insufficient evidence to recommend routine population-based screening for cognitive impairment; however, periodic assessment of cognitive impairment may guide diabetes education and behavioral interventions. Assessments should be valid, reliable, brief and easy to administer. The Clock Drawing Test takes approximately two minutes to complete,

demonstrates good internal consistency and reliability[124] and correlates strongly with the Mini Mental State examination in older adults with diabetes[125]. Although elderly, assessment to guide education strategy for the older adult with diabetes is warranted.

Diabetes education and behavioral interventions should be tailored to older patients' unique physical and psychosocial functioning. Older adults with mild to severe cognitive impairment may require simplified self-care regimens and adjusted treatment targets in order to prevent recurrent or severe hypoglycemia or unnecessary treatment burden[122]. Further, family members and other caregivers should be encouraged to attend diabetes education and medical visits to reinforce self-care regimens and monitor clinical outcomes as a unit.

Hypoglycemia—Hypoglycemia is a common complication in older adults with diabetes[126]. Hypoglycemia is usually defined as blood glucose levels less than 70 mg/dL or 3.9 mmol/L. Hypoglycemia is often categorized as major or minor[127]. Major hypoglycemia is defined by life-threatening low blood glucose levels that require third-party assistance. Minor hypoglycemia is defined by low blood glucose levels that can be treated with simple sugar; minor hypoglycemia typically presents with signs and symptoms such as tachycardia, blurred vision, and sweating. For many older adults with diabetes, minor hypoglycemia can go unrecognized because it presents with nonspecific symptoms (e.g., lightheadedness, vertigo)[127]. Diminished counter-regulatory responses and changes in pharmacokinetics (e.g., reduced renal elimination) and pharmacodynamics (e.g., increased sensitivity to medications) explain the increased vulnerability of hypoglycemia in older adults with diabetes[128, 129]. In frail older adults, minor hypoglycemia can lead to dangerous falls, decreased quality of life and increased mortality[127]. Also of importance, older adults with long-standing type 1 diabetes experience greater hypoglycemia unawareness and glucose variability, both of which increase the risk for severe hypoglycemia[130].

The joint Workgroup from the American Diabetes Association and the Endocrine Society recommend patient education to support older adults and their family members or other caregivers to help prevent and treat hypoglycemia[129]. Early recognition and treatment of hypoglycemic symptoms as well as reinforcing the relationship between how medications work and the impact of food and exercise on glucose levels can help prevent hypoglycemia[129]. The Beers Criteria for Potentially Inappropriate Medication Use in Older Adults[131] has been the leading source of information regarding the safety of prescribing drugs for older adults. Diabetes medications that meet the Beer criteria as potentially inappropriate medication include sliding scale insulin and long-duration sulfonylureas (chlorpropamide and glyburide) due to their higher risk of hypoglycemia in older adults[131].

Polypharmacy—Older adults with diabetes are at high risk for polypharmacy, a term describing when multiple medications are prescribed for multiple conditions[132]. Adverse drug effects can result from age-related changes in pharmacokinetics and pharmacodynamics. Further, drug-drug interactions, most commonly due to the interaction between sulfonylureas and antimicrobial agents, often require hospitalization[133]. Providers should review all currently prescribed medications at each medical visit, and

medications without clear indication should be discontinued. The Beers Criteria for Potentially Inappropriate Medication Use in Older Adults[131] notes specific drugs that should be avoided in older adults with diabetes.

CONCLUSION

This review shows how older adults with diabetes experience multiple and competing psychological, social, and medical challenges that complicate their diabetes care and psychosocial well-being. Current recommendations from the American Diabetes Association[48] support screening for psychological problems, particularly depression and regular assessment of medical, functional, mental, and social domains, which may provide a framework to determine targets and therapeutic approaches. Further, the care of older adults with diabetes is complicated by their heterogeneity. Some older adults may have long-duration diabetes thereby having significant complications, others may be newly diagnosed with years of undiagnosed diabetes and resultant complications, and still others may have truly recent-onset diabetes with few or no complications. Everyday functioning in this population ranges from being frail with underlying chronic conditions, substantial diabetes-related comorbidity, or limited physical or cognitive functioning to having little comorbidity and being active. Life expectancies are highly variable for this population but are often longer than clinicians realize. Thus, providers caring for older adults with diabetes must consider this heterogeneity when setting and prioritizing treatment goals[48].

In addition to the heterogeneity of older patients' presentations, providers need to be aware of the interactions among the medical and psychosocial factors, which complicate treatment. The psychological challenges of depression, diabetes distress, and anxiety are sometimes hard to diagnose and there are few evidenced-based treatments available. Further, many older adults present with atypical symptoms of depression, subclinical depression, or medical illnesses that mimic signs of depression, which further complicate diagnosis and treatment recommendations. Further, minimal evidenced-based treatment exists for older adults presenting with subclinical depression, not major depression. Therefore, psychotherapy may be more helpful than medications for older adults with less severe forms of depression[58]. What is important is to understand that elderly patients experience many physical and psychosocial changes all at the same time, which often involves a deep sense of loss and demands profound readjustment, and they need someone to understand their situation. Older adults do not have the same social supports, physical robustness or psychological resilience of their earlier life, and therefore they often bemoan that they "Can't do what I used to do; can't be who I once was (see Table 1)."

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Table 1

Clinical Case Presentation

A 70-year-old woman with type 1 diabetes for 40 years was referred for depression to the Behavioral Health psychologist by her endocrinologist. At initial presentation, patient reports that she has always been a "positive thinking person" but since she fell two months ago and injured her hip, she now needs the assistance of a cane to walk on her own and she has begun to feel "low" and "sad." She further reports that she used to have excellent blood glucose control but since her mood has changed she no longer checks her blood glucose frequently and sometimes forgets to bolus insulin before her meals. As a result, her HbA1c has increased from 7.2% to 8.3%. Patient also describes that she formerly was a third grade teacher but now just sits in her house alone; she also mentions that her husband died two years ago and she is still mourning his death. She further states that she does not go out and meet friends for lunch or to go to church anymore because she is ashamed that she cannot walk on her own and does not like "looking like an invalid." She reports that she does not enjoy things the way she did in the past, especially when her husband was alive. She particularly notes how she was always very independent but now needs others to help her go places and do things. When further asked about her mood, she pointedly states that what saddens her the most is that, "I can't do what I used to do; I can't be who I once was." Treatment recommendations included: 1) Meeting with patient's children to explain patient's symptoms and what might be helpful; 2) Cognitive Behavioral Therapy every other week for several months; 3) Having her children assist patient to go back to church and begin meeting again with friends; 3) Consideration of psychopharmacological assessment if symptoms do not lessen in a month's time.

At the end of the behavioral health consultation, the patient smiled and stated, "It feels so much better to be talking with someone. I did not realize how much I miss my husband and how I hate being so very different and less capable than I used to be."

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