Psychological distress, a common condition among those living with a diagnosis of diabetes, interferes with an individual’s ability to self-manage the disease (1,2). This was the overarching finding from the Diabetes Attitudes, Wishes, and Needs (DAWN) study that was published widely in 2005 and 2006 (1-5). This large-scale international survey collected responses from generalist and specialist physicians and nurses as well as patients with diabetes in 13 countries throughout the world, including the United States.

The aim of the DAWN study was to identify attitudes, wishes, and needs of individuals living with diabetes, while gathering information from associated health care providers regarding their perceptions of the psychological well-being of patients and their ability to self-manage diabetes (6). Data comparing practice patterns of health care providers in the United States with those in other countries found that the physicians in this country were more likely to provide the psychological care themselves, rather than referring a patient to a mental health specialist (3). Based on these and other study findings, a DAWN summit held in 2003 recommended the following strategies: promotion of active self-management by patients, improved communication between patients and medical providers and among all members of the health care team, enhancement of psychological care, and reduction of barriers to effective therapies (1).
posttraumatic stress disorder, schizophrenia, or substance use disorder. These comorbid conditions pose an even greater challenge to effective diabetes management.

This issue of On The Cutting Edge is intended to enhance the practice of the diabetes care and education clinician by providing the science, as well as practical tools and approaches to aid in addressing some of the challenges faced by our patients. The general objectives are: 1) describe the physical and psychological impact of antipsychotic medications on diabetes; 2) discuss the impact of depression, posttraumatic stress, schizophrenia, and substance use disorders on diabetes care and education; and 3) using case studies, discuss how to modify or enhance medical nutrition therapy and education for patients with diabetes and mental and/or substance use disorders.

Ancient writings documented human struggles with mental disorders as long ago as 5000 years BCE. Reportedly, early humans believed that mental illness was caused by demonic spirits possessing the individual and supernatural forces beyond the person's control. During this time, a procedure referred to as trephining (also called trepanning) was the medical treatment of choice. Trephining involved chipping a hole (trephine) into the skull with crude stone instruments to release the evil spirits and thereby “cure” the afflicted person of this ailment (7,8). Other historians have reported the use of exorcisms and prayer in attempts to drive out the demons (9).

Of the ancient civilizations, the Egyptians appear to have had some of the more progressive approaches to mental disorders, recommending that afflicted persons participate in music and other activities of the arts such as singing, dancing, playing instruments, and painting. Their reasoning was that such therapies would lessen the symptoms and create a sense of normalcy (8,10).

The Egyptian civilization was also remarkably advanced in terms of understanding the science of medicine and the workings of the human body. Writings in the Ebers Papyrus, dating back to the sixteenth
century BCE, include documentation of the treatment of wounds, surgeries, and recognition that the human brain was likely responsible for cognitive function (8). Interestingly, the Ebers Papyrus is also believed to have contained the first documented cases of diabetes, with mention of the treatment used to address polyuria (11).

Dr. Sigmund Freud, an Austrian neurologist and psychiatrist, published his work in psychoanalysis between the years of 1888 and 1939, and his methods continued to be a popular approach to treating mental disorders through the mid-1900s (12). Other treatments used during this time included electroconvulsive therapy, psychosurgery, and pharmacology.

Interestingly, in the early 1930s, treatment for mental disorders crossed the path of diabetes, when Dr. Manfred Sakel, a Polish neurophysiologist and psychiatrist practicing in Berlin, Germany, began to experiment with administration of insulin in a dose high enough to induce coma as a treatment for individuals suffering from schizophrenia (9,13). This treatment was reportedly somewhat beneficial for those in the early stages of the disease but was not effective for those who had progressed to an advanced stage. Due to limited theoretical data to support this treatment, not to mention the difficulties in caring for those to whom it had been administered, use of insulin shock was later abandoned as a mode of therapy for schizophrenia (9,13).

In one of the articles in this edition of On The Cutting Edge, clinical psychologist Jeff Gonzalez, PhD, and his colleagues Sabrina Esbitt, MA, and Persis Commissariat, MA, offer valuable information on depression as one of the most common psychological issues encountered by people with diabetes. They review a number of tools that can enhance clinical practice and assist the nutrition professional and diabetes educator in determining when referral to a behavioral specialist is recommended, including suggested dialogue to promote follow-through by patients.

Modern treatment for psychological distress and mental health disorders often encompasses medications that have been linked to worsening glycemic control in some research studies. Emily Knezevich, PharmD, BCPS, CDE, and Mikayla Spangler, PharmD, BCPS, explore such potential linkages in their article “Impact of Psychotropic Medications on Glycemic Control.” Determining which medication is most effective in treating the mental disorder without causing significant weight gain or deterioration in glycemic control can be a challenge and underscores the importance of ongoing communication among members of the health care team.

The article “Schizophrenia and Diabetes: Review and Case Study” provides background information on the symptoms, causes, and treatment of schizophrenia and includes a case study by Denise Busby, MeD, RD, LDN, and CAPT Deborah Nixon, RN, illustrating use of the Teach-back technique for nutrition counseling in a patient with the dual diagnoses of diabetes and schizophrenia. This article also includes results of several studies illustrating the positive outcomes in weight management that have been achieved by several lifestyle change programs targeted to this population group.

Results from the 2011 National Survey on Drug Use and Health documented that an estimated 20.6 million persons in the United States (8% of the population aged 12 and older) were classified as having a diagnosis of substance abuse, as specified in the previously used Diagnostic and Statistical Manual of Mental Disorders, DSM IV criteria (15). Further breakdown of these data showed 2.6 million with dependence or abuse of both alcohol and illicit drugs, 3.9 million with dependence or abuse of illicit drugs but not alcohol, and 14.1 million with alcohol dependence or abuse but not illicit drug use. The report did not contain information on the number of individuals with comorbid diseases such as diabetes. Nonetheless, because of the number of people affected, it is likely that nutrition professionals and diabetes educators will encounter individuals in practice who are dealing with both diabetes and a form of substance abuse.

Within the article on substance use disorder that I authored, Renee Hoffinger, MHSE, RD, LD, discusses the successful “hands-on” nutrition education and “Cook for Life” programs that were developed and have been in place for a number of years at the VA Medical Center in Gainesville, FL.

The field of neuroscience and its clinical application to treating disorders of mental health continues to evolve. Riva Greenberg, CHC, DPE,
and H. Boudewijn Bertsch, MA, describe a positive approach to treatment that may be applied to any chronic health condition. Salutogenesis is defined as the study of what causes health. This concept has led to a treatment approach that the authors describe as a “flourishing mindset,” based on their observations that many people with diabetes live “healthy, happy and meaningful lives not despite their diabetes, but because of it.”

Finally, this issue of *On The Cutting Edge* is in tribute to our friend and colleague, Richard Rubin, PhD, CDE. Many were blessed to know him personally and many others were the beneficiaries of his work. Beyond his outstanding accomplishments as a volunteer leader and practicing clinician in the fields of behavioral health and diabetes care and education, Richard was one of those incredibly kind and genuine individuals who never failed to help others recognize their inner strengths and passions. In a room filled with people, he focused intently on those engaged in a conversation with him. It seemed that the questions or concerns you voiced were all that was important to him at the time, and I believe that was true. If a considerable amount of time had passed since your last conversation, his open and warm approach made it seem that you had spoken only yesterday.

In his 2007 address as President, Health Care and Education of the American Diabetes Association (16), Richard mentioned that one of his missions while serving in this position was to “continue clarifying the crucial role of psychological issues in diabetes care and to improve psychological care for people with diabetes.” This was demonstrated in his work with friend and colleague Dr. Mark Peyrot and others, as they published the results of the Diabetes Attitudes, Wishes, and Needs Study (DAWN) (2), as described earlier.

In *Practical Psychology for Diabetes Clinicians* (17), Richard and another colleague and friend, Dr. Barbara Anderson, identified several themes as deserving of recognition by health care professionals working in the area of diabetes education:

- The primary responsibility for diabetes management resides with the patient who has diabetes and his/her family; they are unique to each family unit
- All members of the health care team are responsible for providing support to the patient and family, and all clinical encounters matter to that person’s psychological well-being
- Clinicians must not be judgmental of the problem-solving approaches that patients do or do not choose; a flexible and supportive approach by health care professionals is more likely to result in a less oppressive outlook and increased chance for improved metabolic control
- Knowledge of diabetes and its treatment does not necessarily equate to commitment to a management regimen and/or normoglycemia
- The assistance of the behavioral health specialist with expertise in diabetes care and treatment can be invaluable

Finally, in his presentation to the Behavioral Medicine Interest Group at the 2010 Scientific Sessions of the American Diabetes Association, Richard began by sharing, “My career in behavioral medicine and psychology has been driven by passion…a passion to learn everything I could and can about the experience of people living with diabetes, and a passion to be of service in anyway possible” (18). That he accomplished this is, indeed, an understatement.

May Richard’s life continue to inspire us to take a “flourishing approach” with a life of passion and service to others!

In tribute to my friend and colleague, Richard Rubin, PhD, CDE, 1943 to 2013.

References
3. Peyrot M, Rubin RR, Siminerio L, on behalf of the International


**OTCE Summer 2013 Acknowledgments**

**THANK YOU!** Please join me in thanking Diane Reader, RD, CDE, for her outstanding and tireless work as *OTCE* Editor, 2012-2013, and in welcoming Janis Roszler, MSFT, RD, CDE, LD/N, as *OTCE* Associate Editor, 2013-2014, who will, undoubtedly, continue the tradition of excellence and identifying new opportunities for growth!

In addition, our appreciation to the authors, as well as the following individuals for assisting with the development of this issue of *On The Cutting Edge*:

Lisa Brown, RD, LD, CDE
Georgia Clark-Albert, MS, RD, LD, CDE
Angie Doncaster, RD, LDN
Jordyn Forsyth, MS, RD
Andrea Hebert, MS, RD, LD, CDE
Kerri Knippen, MPH, RD, LD, BC-ADM
Paula Leibovitz, MS, RD, CDE, CD-N
Caroline Luck, RD, LD
Lynn Maarouf, MS, RD, CDE
Julie Madlin, MS, RD, CDE
Angela Major, RD, LD
Clarissa Mantle, MS, RD, CDE
Kathy Mount, MS, RD, LDN
Mary Lou Perry, MS, RD, CDE
Sarah Picklo, RD, BS, BA
Julie Plasencia, MS, RD
Diane Reader, RD, CDE
Barbara Reis, RD, CDE
Susan Rizzo, RD, LDN, CDE
Janis Roszler, MSFT, RD, CDE, LD/N
Sharon Schatz, MS, RD, CSR, CDE
Beth Semmens, RD, LD, CDE
Alyce Thomas, RD
April Thomas, MPH, RD, CDE, CD
Linda Flanagan Vahl, DCE Administrative Manager
Deb Kuhlman, DCE Copy Editor
Abstract
Psychological issues are common among people who have diabetes and have repeatedly been associated with potentially poorer diabetes health outcomes. Among psychological issues, depression has received the most research attention and is most common in people with diabetes. In this article, we explore the relationship between depression and diabetes. In addition, we examine key conceptual and diagnostic issues relevant to the assessment of clinical depression, subdiagnostic but clinically meaningful depressive symptoms, and psychological distress specifically related to the experience of living with and managing diabetes. Finally, we review the Implications for clinical practice.

Introduction
Successful diabetes management is largely dependent upon a patient’s ability to adhere to an intensive and often demanding set of self-care behaviors. Although the relationship between mental health issues and diabetes is complex and often bidirectional, psychological distress may negatively affect diabetes self-management, thereby influencing clinical outcomes. This is of particular relevance for diabetes educators. Recent reviews have reported poorer diabetes outcomes among individuals struggling with mental health issues such as depression, anxiety, eating disorders, substance abuse, and psychotic disorders, all of which can complicate self-management, even at levels of severity that fall below diagnostic thresholds (1).

In this brief overview, we focus on depression because it is one of the most frequently encountered psychological issues among those who have diabetes and it illustrates the difficulties presented by psychological comorbidities. In addition to reviewing the literature on the relationship between depression and diabetes, we introduce key conceptual and diagnostic issues relevant to accurate and appropriate assessment of clinical depression, subdiagnostic but clinically meaningful depressive symptoms, and psychological distress specifically related to the experience of living with and managing diabetes. Finally, we discuss implications for clinical practice.

The Comorbidity of Depression and Diabetes
Major depressive disorder (MDD) (Table 1) is the most commonly diagnosed psychiatric mood disorders in the general population (2). The comorbidity of depression and diabetes is common; individuals with diabetes are up to two times more

<table>
<thead>
<tr>
<th>Key Symptoms</th>
<th>Depressed mood</th>
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<tr>
<td></td>
<td>Loss of interest or pleasure</td>
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<tr>
<td>Additional Symptoms</td>
<td>Decrease or increase in appetite or significant weight loss or weight gain</td>
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<td></td>
<td>Insomnia or hypersomnia</td>
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<td></td>
<td>Psychomotor agitation or retardation</td>
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<td>Poor concentration or indecisiveness</td>
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<td></td>
<td>Feelings of worthlessness, guilt, or self-blame</td>
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<td></td>
<td>Suicidal thoughts or actions</td>
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Note: Must present with five or more symptoms, with at least one of the key symptoms for at least 2 weeks. The symptoms must not meet the criteria for a mixed episode. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hyperthyroidism). The symptoms are not better accounted for by bereavement (i.e., after the loss of a loved one); the symptoms persist for longer than 2 months; or they are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, psychomotor symptoms, or psychomotor retardation.
likely to experience clinically significant depression compared with those who do not have diabetes (3-5). Recent longitudinal studies show that depression predicts the onset of complications and mortality over time in patients with diabetes (6-9). Depression is also associated with impairments in physical functioning, limitations of role functioning due to poor physical health, physical pain, low vitality, and impaired social functioning (10). Patients with MDD and type 2 diabetes are also likely to be prescribed more medications, to have higher body mass indexes, and to be prescribed insulin compared with patients who do not meet criteria for MDD (11). Consequently, identifying and treating depression in patients with diabetes has been a focus of health care professionals.

During the course of a person’s life with diabetes, several key opportunities come up to screen for depression (Table 2). However, basic questions about the conceptualization and measurement of depression in people with diabetes remain a subject of considerable debate (12). Table 3 provides a list of validated screening tools for measurement of depression.

Many patients with diabetes experience depressive symptoms that do not meet the criteria for MDD. However, these subclinical levels of emotional distress are also associated with poor self-management and medication adherence (11). Subclinical levels of depressive symptoms, which are two to three times more prevalent in adults with diabetes than those without diabetes (3,4), are associated with increased risk for negative health outcomes, including increased mortality (6,13). Such findings suggest that depression in the context of diabetes may be considered more of an incremental relationship, contrary to the model of MDD, which describes depression as a categorical construct that is either present or absent. The associations between depressive symptoms, even at subclinical levels, and negative health outcomes among people with diabetes also highlight the importance of acknowledging and addressing depressed mood and distress as part of comprehensive diabetes care.

**Diabetes-related Distress**

The current diagnostic guidelines for MDD do not take into account the daily challenges of living with chronic illness. Such an approach may result in an underappreciation of the contribution that living with diabetes can make to depressive symptoms (12). Evidence suggests that illness-related limitations in functioning predict changes in depressive symptoms over time, but depressive symptoms do not predict similar changes in functional limitations (14).

Furthermore, although epidemiologic data have consistently linked MDD and physical illness, the strength of the relationship between MDD and chronic illness has been found to diminish with age (15). For example, chronic illness in younger adults is more strongly associated with MDD than among older adults in whom the experience of illness is normative and expected (15). Thus, consideration of life context could inform the assessment and conceptualization of depressive symptoms in patients living with diabetes.

The concept of diabetes-related distress was developed to specifically assess psychosocial adjustment in diabetes (16,17). It is conceptualized as emotional distress that arises from a range of areas related to living with the demands of a chronic illness. These include difficult relationships with providers; feelings of failure when struggling to control diabetes; burnout related to keeping up with a treatment regimen; conflict with family or friends due to the illness; or

<table>
<thead>
<tr>
<th>Table 2. Key Opportunities to Screen for Depression in Persons with Diabetes</th>
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<tbody>
<tr>
<td>• Diagnosis of diabetes</td>
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<tr>
<td>• End of honeymoon period in type 1 diabetes</td>
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<tr>
<td>• Intensified treatment</td>
</tr>
<tr>
<td>• Hospitalizations</td>
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<tr>
<td>• New complications</td>
</tr>
<tr>
<td>• Pregnancy</td>
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<tr>
<td>• Change in resources (financial, social, emotional)</td>
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<tr>
<td>• Insurance changes</td>
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<tr>
<td>• Problems with glucose control, quality of life, adherence to diabetes self-management plan</td>
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</table>


frustration, anger, or sadness over living with diabetes. Diabetes-related distress can often overlap with depressive symptoms, as illustrated by two recent qualitative analyses of structured clinical interviews for depression symptom severity in adults with type 1 or type 2 diabetes (18,19). Such evidence suggests that these depressive symptoms might more accurately be called diabetes-related distress rather than clinical depression (12).

Understanding the symptoms within the context of struggles with diabetes can help guide more effective treatments. For example, a patient who reports significant frustration and hopelessness regarding his or her ability to meet nutrition, physical activity, and glucose self-monitoring goals may benefit from an approach to intervention that addresses the emotions involved with these issues. Targeting education, motivation, coping strategies, and self-management skills or addressing inaccurate beliefs about diabetes may
<table>
<thead>
<tr>
<th>Tool</th>
<th>Application</th>
<th>Availability</th>
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<tbody>
<tr>
<td>Personal Health Questionnaire Depression Scale (PHQ2)</td>
<td>First 2 items of the PHQ-9. The PHQ-2 is a first step in screening for depression; it does not establish final a diagnosis or determine depression severity.</td>
<td>Publicly available at: <a href="http://www.cqaimh.org/pdf/tool_phq2.pdf">http://www.cqaimh.org/pdf/tool_phq2.pdf</a></td>
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<tr>
<td>Personal Health Questionnaire Depression Scale (PHQ9)</td>
<td>9-item depression scale of the Patient Health Questionnaire. Used in primary care to diagnose depression and select and monitor treatment. There are two components of the PHQ-9: • Symptom and functional impairment assessment for diagnosis • Severity score for selecting and monitoring treatment</td>
<td>Publicly available at: <a href="http://www.depression-primarycare.org/clinicians/toolkits/materials/forms/phq9/">http://www.depression-primarycare.org/clinicians/toolkits/materials/forms/phq9/</a></td>
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<tr>
<td>ZUNG Self-rating Depression Scale</td>
<td>20-item self-report questionnaire widely used as a screening tool, covering affective, psychological, and somatic symptoms associated with depression. The scores provide indicative ranges for depression severity.</td>
<td>Publicly available at: <a href="http://healthnet.umassmed.edu/mhealth/ZungSelfRatedDepressionScale.pdf">http://healthnet.umassmed.edu/mhealth/ZungSelfRatedDepressionScale.pdf</a></td>
</tr>
<tr>
<td>Center for Epidemiologic Studies Depression Scale (CES-D)</td>
<td>Short self-report instrument that measures depressive symptoms in the general population.</td>
<td>Publicly available at: <a href="http://counsellingresource.com/lib/quizzes/depression-testing/cesd/">http://counsellingresource.com/lib/quizzes/depression-testing/cesd/</a></td>
</tr>
<tr>
<td>Center for Epidemiological Studies Depression Scale for Children (CES-DC)</td>
<td>20-item self-report depression inventory with scores ranging from 0 to 60. For use with children and adolescents.</td>
<td>Publicly available at: <a href="http://www.psych.uic.edu/csp/images/stories/physicians/rating%20scales/CES-DC.pdf">http://www.psych.uic.edu/csp/images/stories/physicians/rating%20scales/CES-DC.pdf</a></td>
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<tr>
<td>6-ITEM Kutcher Adolescent Depression Scale: (KADS-6)</td>
<td>6-item self-report depression scale with scores ranging from 0 to 18. For use with adolescents. 11- and 16-item versions of KADS are also available.</td>
<td>Publicly available at <a href="http://ppn.mh.ohio.gov/portals/0/pdf/Kutcher%20Adolescent%20Depression%20Scale%20(KADS).pdf">http://ppn.mh.ohio.gov/portals/0/pdf/Kutcher%20Adolescent%20Depression%20Scale%20(KADS).pdf</a></td>
</tr>
<tr>
<td>Child Depression Inventory (CDI) and CDI-2</td>
<td>Designed for children 7 to 17 years of age.</td>
<td>Available for purchase from Multi-Health Systems, Inc. (<a href="http://www.mhs.com">www.mhs.com</a>)</td>
</tr>
<tr>
<td>Reynolds Child Depression Scale-2 (RCDS-2) and Reynolds Child Depression Scale-2: Short Form (RCDS-2:SF)</td>
<td>Designed for children 7 to 13 years of age.</td>
<td>Available for purchase from Psychological Assessment Resources, Inc. (<a href="http://www.parinc.com">www.parinc.com</a>); prices vary depending on the product</td>
</tr>
<tr>
<td>Reynolds Adolescent Depression Scale (RADS), RADS-2, RADS-2 Short form</td>
<td>Reynolds Adolescent Depression Scale (RADS), RADS-2, RADS-2 Short form</td>
<td>Available for purchase from Psychological Assessment Resources, Inc. (<a href="http://www.parinc.com">www.parinc.com</a>); prices vary depending on the product</td>
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be particularly helpful. Clinicians with expertise in diabetes management may be well positioned to address diabetes-related distress in such patients.

Importantly, the reported symptoms of emotional distress may overlap considerably with those of MDD. For example, the patient may report self-blame and guilt, significantly depressed mood, and a loss of interest in activities and people he or she used to enjoy. However, using the symptoms to guide treatment without consideration of the context that explains them is likely to result in a loss of important information.

Conceptual and Diagnostic Issues
The difficulty in conceptualizing depression in diabetes and the weaknesses of most MDD assessment tools presents challenges to research and clinical practice. Commonly used self-report measures of MDD include numerous somatic symptoms of depression that are also physical symptoms associated with diabetes, such as fatigue and sleep and appetite disturbances (20). These self-report questionnaires are often not strongly associated with diagnostic criteria for MDD, produce high rates of false-positive results, and tend to be more representative of general levels of distress or well-being (20). Structured clinical interviews are considered the gold standard for differentiating clinical from subclinical symptoms of depression. However, they require a trained interviewer and a substantial amount of time for the interviewer and patient. Most patients labeled as “depressed” based on self-report screening instruments would not meet the criteria for MDD when assessed via the more rigorous structured clinical interview, and a significant minority of those deemed as “not depressed” would be identified (20,21). This has undoubtedly

Table 4. Measures: The Problem Areas in Diabetes Scale (PAID) and the Diabetes Distress Scale (DDS)

<table>
<thead>
<tr>
<th>Problem Areas in Diabetes (20 items)*</th>
<th>Diabetes Distress Scale (17 items)**</th>
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<tbody>
<tr>
<td>1. Worrying about the future and the possibility of serious complications</td>
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<td>2. Feeling guilty or anxious when you get off track with your diabetes management</td>
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<tr>
<td>3. Feeling scared when you think about living with diabetes</td>
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<td>4. Feeling discouraged with your diabetes regimen</td>
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<tr>
<td>5. Worrying about low blood sugar reactions</td>
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<td>6. Feeling constantly burned-out by the constant effort to manage diabetes</td>
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<tr>
<td>7. Not knowing if the mood or feelings you are experiencing are related to your blood glucose</td>
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<tr>
<td>8. Coping with complications of diabetes</td>
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<td>9. Feeling that diabetes is taking up too much mental and physical energy</td>
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<tr>
<td>10. Feeling constantly concerned about food</td>
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<tr>
<td>11. Feeling depressed when you think about living with diabetes</td>
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<tr>
<td>12. Feeling angry when you think about living with diabetes</td>
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<tr>
<td>13. Feeling overwhelmed by your diabetes regimen</td>
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<tr>
<td>14. Feeling alone with diabetes</td>
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<tr>
<td>15. Feelings of deprivation regarding food and meals</td>
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<tr>
<td>16. Not having clear and concrete goals for your diabetes care</td>
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<tr>
<td>17. Uncomfortable interactions around diabetes with family/friends</td>
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<tr>
<td>18. Not accepting diabetes</td>
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</tr>
<tr>
<td>19. Feeling that friends/family are not supportive of diabetes management efforts</td>
<td></td>
</tr>
<tr>
<td>20. Feeling unsatisfied with your diabetes physician</td>
<td></td>
</tr>
<tr>
<td>1. Feeling that diabetes is taking up too much of my mental and physical energy every day.</td>
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<tr>
<td>2. Feeling that my doctor doesn’t know enough about diabetes and diabetes care.</td>
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<tr>
<td>3. Feeling angry, scared, and/or depressed when I think about living with diabetes.</td>
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<tr>
<td>4. Feeling that my doctor doesn’t give me clear enough directions on how to manage my diabetes.</td>
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<tr>
<td>5. Feeling that I am not testing my blood sugars frequently enough.</td>
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<tr>
<td>6. Feeling that I am often failing with my diabetes routine.</td>
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<tr>
<td>7. Feeling that friends or family are not supportive enough of self-care efforts (e.g., planning activities that conflict with my schedule, encouraging me to eat the “wrong” foods).</td>
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<tr>
<td>9. Feeling that my doctor doesn’t take my concerns seriously enough.</td>
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<tr>
<td>10. Not feeling confident in my day-to-day ability to manage diabetes.</td>
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<tr>
<td>11. Feeling that I will end up with serious long-term complications, no matter what I do.</td>
<td></td>
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<tr>
<td>12. Feeling that I am not sticking closely enough to a good meal plan.</td>
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<tr>
<td>13. Feeling that friends or family don’t appreciate how difficult living with diabetes can be.</td>
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<tr>
<td>15. Feeling that I don’t have a doctor who I can see regularly enough about my diabetes.</td>
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<tr>
<td>16. Not feeling motivated to keep up my diabetes self-management.</td>
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<tr>
<td>17. Feeling that friends or family don’t give me the emotional support that I would like.</td>
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</table>

*Note: The PAID uses a 5-point scale ranging from 1) “not a problem” to 5) “serious problem” to assess the degree to which diabetes management and/or feelings about diabetes are problematic to patients. A cutoff score of 40 has been recommended to denote elevated levels of distress, with a score of 50 denoting seriously elevated distress.

**Note: The DDS-17 uses a 6-point scale ranging from 1) “not a problem” to 6) “a very serious problem” and provides a total score plus 4 subscale scores. A mean score (on a subscale or the total score) less than 2 indicates “little or no” diabetes distress, a mean score between 2 and 2.9 indicates “moderate” diabetes distress, and a score of 3 or higher indicates “high” diabetes distress.

Copies of the PAID and DDS can be obtained by contacting: Dr. William Polonsky at WHP@behavioraldiabetes.org
muddled understanding of the relationship between diabetes and depression.

Several measures have been created to assess diabetes-specific distress. The Problem Areas in Diabetes (PAID) scale and the more recent Diabetes Distress Scale (DDS) are the most widely used (Table 4) (16,17). When both structured clinical interviews for MDD and self-report questionnaires that measure diabetes-related distress have been used, findings indicate that diabetes-related distress is closely associated with diabetes self-management and glycemic control, while MDD is not (21,22). Accurately identifying patients experiencing psychiatric conditions such as MDD, which may require specialized mental health care, is clearly important, but arguably correct identification of emotional distress related to the demands of diabetes self-management is equally important. Furthermore, such nonpsychiatric distress is more common than MDD in patients with diabetes (3,4,11,21,22) and may be more effectively addressed as part of comprehensive, patient-centered diabetes care (12).

Clinical Implications

A comprehensive approach is required for effective diabetes care, in which health care providers have access to appropriate referrals, resources, and education. Providers must recognize that the distinction between physical and mental health is often artificial and can lead to fragmented treatments. Distinguishing between MDD and diabetes-related distress is a necessary step to ensure appropriate treatment and referrals. Self-report screening tools should be viewed as a first step, with positive results investigated further via a clinical interview. Semistructured interview guides, such as the Composite International Diagnostic Interview (CIDI) are available online (http://www.hcp.med.harvard.edu/wmhcidid), along with training materials. When in doubt, follow-up assessment by a trained mental health provider should be undertaken to confirm an MDD diagnosis. Providers may find it beneficial to watch for certain indications for referral to a trained mental health or behavioral health provider when addressing diabetes-related distress or depression (Table 5). The challenges of accurately assessing diabetes-related distress, significant but subclinical depressive symptoms, and MDD should not deter providers from addressing the common experience of emotional distress in individuals with diabetes as standard comprehensive diabetes care. The American Diabetes Association recommends psychosocial screening throughout diabetes care: at diagnosis, upon discovery of complications, during hospitalization, and as part of regular follow-up (23).

If depression or diabetes-related distress is to be assessed as part of comprehensive diabetes care, providers must feel confident in their ability to address positive screening results indicating the presence of MDD or diabetes-related distress. Settings in which behavioral health providers are integrated or collocated may facilitate diagnosis and treatment. A direct, nonstigmatized referral while in the clinic setting may encourage patients to address their

Table 5. Indications for Referral to a Behavioral Health Specialist

| • Two or more episodes of severe hypoglycemia or diabetic ketoacidosis without obvious causes in 1 year |
| • No response to efforts to negotiate and implement a treatment plan |
| • Comorbid psychiatric disorders that complicate diabetes management |
| • Serious family dysfunction which is a barrier to improving diabetes management |
| • Suspicion of depression or chronic diabetes-related distress |
| • Observed or suspected significant psychosocial dysfunction |
| • Inadequate recovery defined as |
| a) Symptoms continue beyond typical course of recovery |
| b) Failure to benefit from indicated therapies |
| c) Persistent symptoms, inadequately explained by the patient’s physical findings |
| • Medication issues and/or substance abuse problems: includes any suspicion of drug overuse or misuse, aberrant drug behavior, substance abuse, addiction, or use of illicit substance, or for any case considered for chronic use of opioids |
| • Current or premorbid history of major psychiatric symptoms or disorder |
| • Problems with compliance/adherence with prescribed medical treatment or rehabilitation program |
| • Evidence of cognitive impairment, associated with related significant ADL dysfunction; may be secondary to injury and/or possible adverse effects of medical therapies initiated for the chronic pain |
| • Catastrophic medical conditions, e.g., spinal cord injury or myocardial infarction |
| • Prior to contemplating major elective surgeries, e.g., back surgery, or initiating treatments that require major lifestyle changes, e.g., diabetes medication issues and/or substance abuse problems |

mental health care issues (see sidebar for tips for making a referral). Health care providers can also encourage cooperation between diabetes care providers and patients for psychosocial issues affecting diabetes management. Discussing the results of screening with the patient may provide an opportunity to build trust and collaboration between patient and provider. The same trust and rapport may also help avoid the false-positive results seen with the use of screeners focused more on detecting MDD. Conversations between patients and providers about diabetes-related distress may help identify problem areas in diabetes self-management and facilitate the establishment of realistic goals and joint problem-solving between patients and providers. These conversations can also serve as opportunities for continued evaluation of developing MDD or other psychiatric disorders. Furthermore, having their emotional experience of diabetes acknowledged and normalized by providers can be therapeutic and can help engage the patient in personal diabetes care.

**Summary**

Depression in patients with diabetes is a frequent concern of clinicians and research scientists because of the association between depressive symptoms and poor self-management, worse health outcomes, and increased mortality. However, diabetes-related distress is also common and may be better understood as a frequently occurring aspect of living with a challenging chronic illness. It is clearly important for providers to be able to identify MDD in patients and provide appropriate referrals for treatment. Due to difficulties in both conceptualization and assessment, diabetes-related distress may often be misclassified as psychiatric illness or dismissed because it does not meet the criteria for MDD, thereby leading

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**Tips on How to Refer to a Behavioral Health Counselor**

Because practitioners, settings, and patients can differ widely, there is no one-size-fits-all approach to facilitating a behavioral or mental health referral. For instance, if a behavioral health counselor is co-located in your setting the referral process will be different than if you are referring outside. Additionally, your relationship with the patient, the referral question, your patients symptoms, their experience with and beliefs about mental health issues and care, as well as cultural and systems issues will all shape your conversation.

There are some broad key points that can help when providing a mental or behavioral health referral:

- **Ask if the patient is already seeing a mental health provider.** This will direct your referral. If the patient is already in treatment, request permission to collaborate with that provider in order to provide the best possible care. If the patient is not in treatment, some suggestions below may help.

  > “It's great that you’re seeing someone for those feelings. If you’re willing, I'd like to be in contact with them so together we can both provide you with the best possible care.”

- **The referral should be as direct and nonjudgmental as a referral to any other service (Cardiology? Mental Health? They’re both important and necessary!)** This will help to eliminate any feelings of stigma surrounding mental health. For example, your tone should not suggest that this is a scary or judgmental referral.

- **The terms “psychologist”, “social worker”, or “therapist” may evoke feelings of stigma and reduce the likelihood of a successful referral.** Terms such as “behavioral health specialist” emphasize the importance of your referral for health. Describing the specialist as “my colleague”, “a member of my team”, or “someone who specializes in...” also helps to normalize referral to behavioral or mental health.

  > “I have a member of my team who specializes in the issues we’ve been discussing that I’d like you to meet with.”

- **Similarly, avoid using psychological terms such as “counseling” or “therapy” when describing what a behavioral health specialist can offer.** Terms such as “new ideas”, “tools”, “strategies”, or “support” emphasize the collaborative, patient-centered focus of behavioral health approaches.

  > “I’d like you to with my colleague who can provide some strategies and ideas on how to work on these issues.”

- **Use a patient’s own language when discussing their mental or behavioral health concerns.** Unless they describe their issues in diagnostic terms like “depressed” or “phobia”, more general language such as “stressed” or “down” is more effective, and leave diagnosis to the mental health providers.

  > “I understand you’ve been feeling very stressed, based on your answers to these questions”

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to ineffective treatment approaches that ignore the role of chronic illness in emotional well-being and adjustment to diabetes.

Diabetes care providers and their patients may be in a good position to assess for the diabetes-related context (e.g., fear of complications, burnout, hopelessness about self-management) that often explains depressive symptoms and guide the selection of interventions to reduce disease and treatment demands and improve coping. Best practices for assessing diabetes distress and developing appropriate treatment and follow-up plans have yet to be established, especially within the framework of an overburdened and often fragmented health care system that views psychosocial and behavioral concerns as discrete from medical illness. Depression and distress in the context of diabetes present providers with both challenges and opportunities for collaborative, comprehensive, and integrative diabetes care.

References

Abstract
Much has been published about the worsening of glycemic control related to the use of psychotropic medications. A number of diseases treated with psychotropic medications are also independently linked to glucose irregularity, thereby contributing to the risk for the development of diabetes. The most significant impact on glucose concentrations is associated with second-generation antipsychotics (SGAs), although antidepressant medications have also been associated with the development of diabetes. Clinicians working with patients for whom these medications have been prescribed should be aware of the increased risk. In addition, recognition of the integral role of medical nutrition therapy in the individual treatment plan is critical to preventing the weight gain often seen with the use of these medications.

Introduction
Psychotropic medications are crucial components of mental health management for millions of people throughout the world. At the time this article was written, eight different antipsychotic or antipsychotic medications were listed in the top 200 drugs dispensed in the United States (1). Patients with severe mental illnesses have been reported to have up to a 25-year shorter life span than the general population due to significant cardiovascular morbidity and mortality (2). Part of this relationship may stem from the implications of taking psychotropic medications.

Organizations involved in clinical practice guideline development for both psychiatric illnesses and diabetes have issued a consensus statement regarding the use of antipsychotic drugs, obesity, and diabetes. These organizations include the American Diabetes Association, the American Psychiatric Association, the American Association of Clinical Endocrinologists, and the North American Association for the Study of Obesity. The most recent update was published in 2004 (2). The consensus document discusses the significance of using these agents, the prevalence of obesity and diabetes in the population for which these agents are prescribed, the relationship between the use of antipsychotics and obesity or diabetes, monitoring for disease development among patients taking these agents, and additional areas for which research is needed.

SGAs have become first-line therapeutic options for the treatment of many psychiatric disorders, including schizophrenia, bipolar disorder, dementia, and autism, due to their enhanced tolerability compared to first-generation antipsychotics. In addition to SGAs, antidepressants have also been tied to worsening glycemic control (3). A variety of different analyses have been conducted to determine the occurrence of glycemic dysregulation with use of antidepressant agents.

Traditionally, determining the causes of medication-induced hyperglycemia in this population has been difficult due to the frequent independent findings of obesity and diabetes in patients diagnosed with mental illness (4). Such findings complicate the efforts to determine the relationship between use of psychotropic medications and the development and progression of diabetes.

Many mechanisms have been proposed to explain the association between psychotropic medications and the development of glucose intolerance. Proposed mechanisms for SGAs include antagonism of serotonin receptors, resulting in impedance of glucose uptake by muscle cells and adipocytes as well as impairment of β-cell function (4,5). Further research is needed to confirm the mechanism of action for the hyperglycemia seen with the use of psychotropic agents.

Literature Review
Psychotropic Medications and Risk for Diabetes
The literature describing the risk for obesity and diabetes during treatment with psychotropic
medications is vast. Several medications are consistently cited as being responsible for metabolic changes. The most substantial evidence exists for SGAs. This relationship has been observed in both the adult and pediatric populations. Danish researchers investigated the use of antipsychotic medications and risk for development of diabetes in adults (6). Results showed a nearly 50% increase in risk of developing diabetes with the addition of one antipsychotic agent. The incidence increased significantly with exposure to additional antipsychotics. The same trend has been found in the pediatric population. A retrospective analysis of children ages 5 to 18 years demonstrated an increase in diabetes incidence rate from 0.76 cases per 1,000 patient-years for nonusers to 3.23 cases per 1,000 patient-years for SGA users and 1.86 cases per 1,000 patient-years for antidepressant users (5).

**Psychotropic Medications and Other Metabolic Parameters**

A systematic review and meta-analysis published in 2010 compared the effects of SGAs on weight, cholesterol, and glucose among patients using these medications to treat schizophrenia (7,8). Olanzapine and clozapine were associated with the most significant increases in all three parameters. Quetiapine and aripiprazole demonstrated moderate increases and ziprasidone showed minimal change. These findings are consistent with previously described and subsequent comparisons available in the literature. Saddichha and colleagues (9) demonstrated the negative metabolic impact of SGAs when patients who had schizophrenia underwent oral glucose tolerance tests before and after 6 weeks of SGA therapy. Patients experienced a 6.6-mg/dL increase in blood glucose from baseline with olanzapine and a 4.3-mg/dL increase with risperidone. More than 10% of patients who had not previously received antipsychotic medications developed type 2 diabetes mellitus (9). The Figure reviews the currently available SGAs in the United States market and their relative risk for causing metabolic abnormalities.

Among patients with schizophrenia, the presence of diabetes has been reported to be 1.5- to 2-fold higher than the general population (10). However, evidence demonstrates that patients using psychotropic medications for indications other than schizophrenia and bipolar disease experience similar effects on glucose levels. This reflects an independent mechanism for glucose alteration due to medication use, outside of pathophysiologic causes from the disorders themselves (11).

**Antidepressants and Risk for Diabetes**

The correlation of antidepressants with increased risk for diabetes is well-described in the literature. In a recent retrospective cohort analysis using the Texas Medicaid population, patients receiving various forms of antidepressants had a 1.5-fold increased risk of developing diabetes compared to patients who received benzodiazepines (3). Patients taking tricyclic antidepressants had the greatest risk, followed by those taking serotonin-norepinephrine reuptake inhibitors, selective serotonin reuptake inhibitors, and finally a category of “other” antidepressants (including but not limited to bupropion and mirtazapine).

Additional case reports and observational studies corroborate the findings of the Texas Medicaid analysis, including a substudy within the Diabetes Prevention Program and Diabetes Prevention Program Outcomes Study (12). According to this 10-year follow-up, continuous antidepressant use with placebo or lifestyle management increased the risk of diabetes, but those patients taking antidepressants plus metformin did not have an increased risk. Another study conducted in Finland showed the 5-year absolute risk of diabetes was 1.1% for patients not taking antidepressant versus up to 2.3% for patients who took at least 400 daily doses per year (13). An observation based on three cohort groups also showed an increased risk of diabetes with antidepressant use, but the risk was diminished when risk
factors for diabetes, a history of hyperlipidemia and hypertension, and body mass index were included in the analysis (14).

Other analyses have shown conflicting results. Researchers examining more than 2 years of data from the Medical Expenditure Panel Survey determined that patients who were prescribed antidepressants for depression had a significantly increased risk of developing diabetes, but the risk disappeared when lifestyle risk factors were considered (15). Another analysis of published case reports documented nine reports of hyperglycemia and eight reports of hypoglycemia with the use of antidepressants (16). Two medications, imipramine and sertraline, were used in both groups. Ten of the 17 patients included in this analysis had diabetes. The authors concluded that establishing whether glucose dysregulation is actually due to the antidepressant therapy or from changes in patient mood and lifestyle habits is difficult.

Psychotropic Medications and Risk for Weight Gain and Obesity

The 2004 consensus statement on antipsychotic drugs and obesity and diabetes describes the weight gain after starting an SGA as rapid, occurring within the first 3 months of therapy (4). The weight gain during this time is typically between 0.5 and 5 kg. Some have suggested that the mechanism for weight gain may be related to a possible alteration in hunger and satiety caused by the effect of the medications on various neurotransmitters and histamine-1-receptors (4).

Determining whether weight gain and glucose alterations are due to the health disorder being treated or to the medications has been difficult. One factor is that patients with mental health disorders such as schizophrenia, major depressive disorder, and bipolar disease often also exhibit sedentary lifestyles and poor diet selection (10).

Impact of Medical Nutrition Therapy Interventions

Research has been conducted to determine whether medical nutrition therapy can reverse the effects of antipsychotic medications on body weight. A systematic review and meta-analysis of randomized, controlled trials evaluated the effects of medical nutrition and behavioral counseling on reversal of weight gain caused by antipsychotics (17). Investigators reported a mean 3.12-kg reduction in weight among patients receiving nutrition counseling, which was statistically significant, compared to those who did not receive the intervention (P<0.01, 95% confidence interval -4.10 to -2.14 kg). Additional data from this review suggested the benefit of early intervention with nutrition and behavioral counseling after the initiation of antipsychotic therapy. Despite such positive findings, evaluation of these data is limited by the lack of long-term follow up of patients included in these studies (17).

Clinical Application

To apply the previously noted knowledge from the literature, the practicing clinician must determine which medications are appropriate for the individual patient and implement a plan for education, monitoring, and follow-up evaluation for early detection of developing diabetes. A nationwide United States survey of psychiatrists showed widespread knowledge of the potential for glucose elevations with the use of psychotropic medications (18). According to the survey, 90% of psychiatrists considered metabolic issues when selecting antipsychotic therapy and 85% of those surveyed changed therapy when they detected some level of metabolic disturbance (18).

Education is a key component in the care of patients for whom these medications are prescribed and especially for those who have risk factors for the development of diabetes. Authors of the 2004 consensus statement recommended that nutrition and physical activity counseling be given to all patients who are overweight or obese when starting an SGA (4). In addition, because severe hyperglycemia presenting as diabetic ketoacidosis has been reported in patients taking SGAs, it is important to counsel patients on the signs and symptoms of this condition, such as rapid onset of polyuria, polydipsia, unexplained weight loss, nausea or vomiting, dehydration, and tachypnea (4).

When determining if a patient is an appropriate candidate for SGA

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Table. Monitoring Parameters for Patients taking SGAs (4)

<table>
<thead>
<tr>
<th>Monitoring Parameter</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal/family history</td>
<td>Baseline and annually thereafter</td>
</tr>
<tr>
<td>Weight (body mass index)</td>
<td>Baseline, every 4 weeks and quarterly after 1st quarter or when therapy is changed</td>
</tr>
<tr>
<td>Waist circumference</td>
<td>Baseline and annually thereafter</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>Baseline, 12 weeks, and annually thereafter</td>
</tr>
<tr>
<td>Fasting plasma glucose</td>
<td>Baseline, 12 weeks, and annually thereafter</td>
</tr>
<tr>
<td>Fasting lipid profile</td>
<td>Baseline, 12 weeks, and every 5 years thereafter</td>
</tr>
</tbody>
</table>
therapy, clinicians should perform baseline monitoring to ensure that no undiagnosed disease exists. The suggested monitoring parameters include personal and family history (with a focus on risk for cardiovascular morbidity), weight and height, waist circumference, blood pressure, fasting glucose, and fasting lipids (4).

After initiating treatment with an SGA, follow-up monitoring for development of metabolic changes is a crucial piece of overall management of health outcomes (Table) (4). Weight should be reassessed every 4 weeks for the first 3 months of therapy or when therapy is changed. Quarterly weights are recommended beyond that time. If a patient gains 5% or more of his or her initial weight during the course of therapy, the clinician should consider altering the medication. Fasting glucose, lipids, and blood pressure should be monitored 3 months after the initiation of therapy. Glucose and blood pressure should be measured annually while the patient is taking an SGA, and lipids should be monitored every 5 years unless there is an indication for more frequent monitoring. These monitoring suggestions are recommended for adults using SGA therapy. Fewer data are available for children and adolescents regarding risk of diabetes development. However, their heights and weights should be monitored regularly to calculate a body mass index that can be compared to percentiles adjusted for age and sex (4).

Frequently, psychotropic medications are prescribed by mental health professionals who may not be medically managing the patient’s other chronic diseases. In these cases, once abnormal measurements are identified, it is critical to refer the patient to the appropriate health care provider for further evaluation and treatment. Clinicians must consider all patient characteristics when choosing the most appropriate psychotropic medication, including risk of developing diabetes. If the risk exists or is likely to develop, agents such as olanzapine and clozapine should be avoided.

Guidelines for monitoring metabolic effects of antidepressants are less well defined, but monitoring for changes in weight is encouraged throughout the course of therapy. Medical nutrition therapy has been identified as an essential component of the management of patients using psychotropic medications in an attempt to ameliorate the associated weight gain seen with these agents (4).

Summary
Use of psychotropic medications is widespread, and clinicians in every setting are likely to encounter patients for whom these agents have been prescribed. Comprehensive care must include screening, education, and ongoing monitoring throughout the course of treatment, which is often lifelong. Collaborative efforts by the health care team can enable early identification of high-risk patients and provision of therapies to prevent or identify early signs of deterioration in metabolic control, thereby reducing the burden of diabetes related to the use of psychotropic medications.

References
The Diabetes Educator and the Person With Posttraumatic Stress Disorder

Janice Fisher, PhD, RD, LD, CDE, BC-ADM, FAADE

Abstract

The scientific literature reflects a growing interest in examining the possible relationship between mental illness, the metabolic syndrome, and type 2 diabetes. This article explores some of the recent treatment plans, medications, and research about posttraumatic stress disorder (PTSD) and identifies factors that should be considered when counseling patients who have this condition. Typical comorbidities seen with PTSD are depression, nightmares, memory loss, fatigue, and possibly a greater risk of developing autoimmune diseases due to higher circulating T-cell lymphocytes and lower cortisol levels (1).

Defining PTSD

PTSD has been characterized as a disorder of altered affective function that causes tremendous distress (2). It is commonly described as a psychiatric illness that is prevalent among individuals who have experienced or witnessed a life-threatening event or serious trauma. Such traumatic events could be rape, assault, violent crime, torture, or exposure to a life-threatening accident or disaster such as fire or earthquake. The defining characteristic of PTSD is a psychological response of fear, helplessness, or horror due to the threat of injury or death (3). Although soldiers returning from deployment are often the first to come to mind when discussing PTSD, this condition occurs in a much wider population. For example, anxiety, depressive, and posttraumatic stress symptoms have been identified and studied in mothers of children with type 1 diabetes (4).

According to estimates from the National Comorbidity Survey in 2005 (3), the lifetime prevalence of PTSD among the United States adult population is 6.8%. In American Vietnam veterans, the lifetime prevalence is estimated at 19%. Nine percent of these veterans continued to suffer from PTSD more than 10 years after their war experiences. Furthermore, many veterans who served in Afghanistan and Iraq are expected to exhibit PTSD, potentially affecting as many as 30% of returning combat soldiers (5). PTSD can also affect people not involved in military operations. Approximately 15% to 25% of persons who are exposed to life-threatening traumatic experiences develop PTSD (6). Trauma survivors are also at increased risk for the development of other mental disorders, such as major depression, panic disorder, generalized anxiety disorder, and substance use disorders. These disorders may contribute to the risk for comorbidities, including diabetes, due to poor coping methods, such as overeating.

PTSD may have a short duration, with symptoms abating over time. However, the symptoms may progress for several months or years. For some, the onset of PTSD does not occur immediately after the event, rather developing in subsequent weeks, months, or even years. Affected individuals are more likely...
to use health care systems more than the general population due to both mental and physical disability (6).

Qureshi and associates (3) conducted a literature review on PTSD, looking for trends in physical comorbidities. They found that PTSD and musculoskeletal disorders, especially arthritis, had the strongest association, but not in a veteran population. No significant association with PTSD was found for thyroid disease. There was some evidence of an association between PTSD and digestive disorders, particularly gastric ulcers. The evidence was not strong enough to make associations with diabetes, congestive heart disease, and stroke. Other authors have reported a weak association between diabetes or congestive heart disease and PTSD.

Treatting PTSD

Physicians or mental health professionals with experience in treating PTSD typically provide care to affected individuals. Treatment may include “talk” therapy, medication, or both.

Cognitive-behavioral therapy (CBT) is often used to treat PTSD and other anxiety disorders (7). A common CBT technique is cognitive restructuring, which is based on the concept that thoughts and feelings are connected. The goal is to help the person with PTSD identify and change problematic thinking patterns. Cognitive restructuring challenges the belief that an individual is to blame for the traumatic event and replaces it with a more emotionally acceptable perspective of the memory, such as “it was my last resort” to harm another person.

Exposure therapy is another CBT treatment approach for PTSD. It is based on the premise that during the traumatic event, the person with PTSD learned to fear thoughts, feelings, and situations that now remind him or her of the traumatic event. Exposure therapy involves repeated, detailed imagining of the trauma in a safe and controlled setting. This helps the person face and gain control of the fear that was overwhelming during the trauma. Desensitization is yet another form of CBT treatment, wherein the mental health professional assists the person with PTSD in confronting the trauma, one piece at a time, beginning with the least upsetting parts. Relaxation techniques may be used to help the individual progress through increasingly upsetting portions of the trauma.

Some research suggests that individual treatment is likely to be most effective in the first few months of therapy (8). As the person with PTSD feels increasingly comfortable and less traumatized, joining a small group of people who are struggling with the same symptoms may be therapeutic. The ability to share one's story in a safe, close, and understanding group environment increases confidence and a sense of trust. Individual and group treatment involves learning to cope with shame, guilt, rage, fear, doubt, and depression.

Medications also may be prescribed for treatment of PTSD (9). Antidepressants are most commonly used. Although a person can have PTSD without other mental disorders, it is very common for other comorbid conditions to be present. Therefore, the psychiatrist needs to evaluate the full mental health spectrum and attempt to select the medication that will be most effective with the fewest adverse effects. Clonidine, prazosin, and guanfacine are frequently used to help control nightmares and aid sleep. These alpha-adrenergic receptor agonists can be useful in treating the hyperactivity seen in patients with chronic combat-related PTSD. The accompanying sedative-like effects of the drugs may aid in addressing sleep disorders. The United States Food and Drug Administration has approved two medications for treating adults with PTSD (7): sertraline and paroxetine, both of which are antidepressants. They may help address PTSD symptoms such as sadness, worry, anger, and loss of the ability to express emotions. Consistent administration of these medications may enable the person with PTSD to attend treatment sessions.

Although little research has demonstrated their efficacy or effectiveness, several other medications have been tried as a treatment for PTSD. Benzodiazepines may help people relax and sleep. This drug class may also cause memory problems. Antipsychotics are often used when multiple mental health issues are diagnosed. Individuals prescribed antipsychotics may gain weight and have increased risk of developing heart disease and diabetes. The antidepressants fluoxetine and citalopram can lessen feelings of tenseness or sadness (9).

Counseling the Person With Diabetes and PTSD

No readily available statistics have identified the number of individuals with type 1 or type 2 diabetes who are also living with PTSD. As noted earlier, PTSD has been identified in mothers of children diagnosed with type 1 diabetes (4).

One of the issues that has emerged in reviews of PTSD in the military is
the potential association with diabetes. However, the origin of the diabetes is not clear and may be related to more than one factor. Many Vietnam veterans were exposed to Agent Orange, a defoliant that was used to clear the landscape and enable the troops to see enemy soldiers. Agent Orange exposure is believed to be the source of a number of diseases, including type 2 diabetes. Therefore, there is a question of whether developing diabetes may be related more to the exposure to Agent Orange than to the effects of medications taken for PTSD. Regardless of the causes for the development of diabetes in the person with PTSD, it is important for the clinician to be empathetic to the struggles these individuals may be experiencing.

As part of the nutrition care process, a thorough assessment should enable the registered dietitian (RD) or registered dietitian nutritionist (RDN) to identify whether the person with diabetes is being treated for PTSD and whether additional mental health issues exist. People with PTSD may be tense, distrustful, impatient, and easily distracted. A successful treatment plan takes these symptoms into consideration. Effective communication strategies should encourage the person with PTSD to develop a bond of trust with the counselor (10).

Because many individuals with PTSD have multiple health issues, prioritizing treatment to address critical issues first is key. For example, diabetes self-management education may not be the first priority for patients in the early phases of PTSD. However, if warranted by the severity of the medical condition (e.g., prolonged hyperglycemia, diabetic ketoacidosis), the counselor may need to work with other members of the patient’s family or support group to provide appropriate care (10).

Another effective teaching strategy is to provide education sessions of shorter duration for the person who is easily distracted. Assisting the client in setting one or two SMART (specific, measurable, achievable, realistic, and timely) goals is appropriate and may help avert feelings of being overwhelmed. In addition, the RD or RDN should determine whether the patient is engaging in any eating disorders reflecting anxiety, such as binge eating or craving of sweets. Because some medications used to treat PTSD treatment can cause dry mouth (7), the RD or RDN should thoroughly assess beverage consumption, including type and amount. Recommending a limit on carbohydrate-containing beverages, with a move to those that are sugar-free, may be a first step toward lowering blood glucose values.

Some people with PTSD are uncomfortable in certain physical settings. Determining whether a person would benefit from individual or group counseling sessions is an essential part of the initial assessment. Knowing triggers for the onset of PTSD symptoms is an important part of helping the person to feel safe. Some individuals may prefer a room with less exposure to triggers. Others may prefer to sit with their backs to a wall, enabling a view of the door and the rest of the room. Yet others want control over their environment and function better under a very regimented schedule. They may only be able to participate in a class or medical nutrition therapy (MNT) session for a limited amount of time (3).

Whether the patient’s spouse or significant other is supportive of the PTSD treatment regimen and appropriate therapy for diabetes may determine whether to include that person in MNT sessions. As an alternative, those with diabetes may identify a trusted friend to accompany them to appointments. This is also beneficial if the patient is experiencing memory challenges. Providing written educational materials and limiting the amount offered in one session has been shown to reduce the likelihood of overwhelming the person with too much information at one time and may be of particular benefit to those with memory problems (8).

An unhealthy method of coping with PTSD is substance abuse. Because addressing this problem is not within the scope of practice for many diabetes educators, the RD or RDN who suspects a substance use disorder may need to contact the primary care provider to facilitate further assessment. Helping the person with PTSD to develop healthier coping mechanisms is beneficial. These include engaging in exercise or relaxation techniques such as yoga or meditation and avoiding activities that are detrimental, such as alcohol abuse, drug usage or overindulgence in food.

Similar to the civilian population, many servicemen/women who were deployed during the past 10 years have had to cope with obesity as a major health factor. If inappropriate coping mechanisms are adopted to control PTSD symptoms, weight gain can counter the positive effects of MNT counseling (11). An estimated 30% of deployed service members have body mass indexes of 35 or greater (12).
The effect of poor sleep quality, commonly experienced by people with PTSD, on diabetes self-management has been studied. Chasens and colleagues (13) reported that glycemic control worsens in adults with type 2 diabetes when sleep quality is impaired and daytime sleepiness occurs. Although some PTSD treatment medications target sleep disorders, other have the side effects of drowsiness. Such effects can influence the person’s interest in exercise, menu planning, food preparation, and adherence to prescribed medication regimens.

Conclusion
PTSD is a commonly diagnosed mental illness that may occur when a person experiences trauma or a severe reaction to an event such as rape, fire, or natural disaster. At the present time, treatment of PTSD may include antidepresive medications, cognitive restructuring, exposure therapy, desensitization therapy, or a combination of these. A growing segment of the United States population experiencing PTSD is armed services veterans who have been deployed overseas. It has been estimated that as many as 30% of these servicemen/women are at risk for developing PTSD. Therefore, it is important for the diabetes educator to become familiar with the typical symptoms expressed during PTSD episodes. Arranging the office or classroom in a nonthreatening manner may improve the patient’s comfort level, resulting in greater retention of information and receptiveness to future education encounters. Because those who have PTSD may experience memory lapses, structuring counseling sessions in shorter, more frequent segments may be more beneficial than longer group classes. Providing written information that summarizes the topic and content of the discussion and reinforces mutually agreed-upon goals can benefit those who have impaired memory. Asking the patient whether he/she would like to include family/supportive friends at counseling sessions is important. Diabetes educators should note that the communication skills and strategies recommended for working with this patient population do not differ significantly from those suggested for all individuals with diabetes.

References
Schizophrenia and Diabetes: Review and Case Study

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Abstract
Schizophrenia is a chronic neurologic disorder that has the potential for severe disability among affected patients. In addition to the mental and behavioral problems associated with the disease are numerous nutrition-related comorbidities. The coexistence of schizophrenia and other mental disorders with diabetes has been related to the use of antipsychotic medications, but some research has suggested that patients who have schizophrenia are more prone to the development of diabetes than the general population. More research is required to elucidate the association of mental disorders with metabolic disturbances, but the coexistence of diabetes with schizophrenia necessitates evaluation and treatment of affected patients.

Overview of Schizophrenia
Schizophrenia affects about 24 million individuals worldwide and 2.4 million (1%) of the United States population (1). This chronic and potentially severely disabling neurologic disorder involves pathways to the prefrontal cortex of the brain (1).

Although understanding of schizophrenia has improved over the years (Table 1), much is yet to be learned. Both positive and negative symptoms are seen with schizophrenia, and cognitive symptoms may be difficult to recognize. Symptoms generally are noted initially between 16 and 30 years of age (2). Although the diagnosis requires the presence of specific symptoms, these may be difficult to discern from typical adolescent behaviors. Historically, “bad parenting” was blamed for this developmental brain disease, but more recently, research has shown possible genetic underpinnings (1).

In the past, medical professionals and society were ill-prepared to treat individuals with schizophrenia and other mental disorders, and as recently as 1971, an estimated 433,000 Americans were institutionalized (5). Evidence-based treatment guidelines have been limited and poorly disseminated. A significant change began in 1992, when the Agency for Health Care Policy and Research partnered with the National Institute of Mental Health (NIMH) in establishing a Patient Outcomes Research Team for schizophrenia at the University of Maryland School of Medicine and the Johns Hopkins University of Public Health (6). This consortium is focused on developing and disseminating recommendations for the treatment of schizophrenia based on existing scientific evidence (6).

Metabolic Abnormalities and Psychiatric Disorders
The coexistence of diabetes and psychiatric illnesses, including schizophrenia, has been observed for centuries (7). Several theories were offered as possible explanations for this relationship (8,9):

• Increased levels of stress and anxiety, depressive symptoms, and decreased self-esteem following a diagnosis of diabetes and the related challenges of managing a chronic illness
• Schizophrenia as an independent risk factor for glucose intolerance and diabetes
• An association between poor glycemic control and subsequent complications of diabetes

More recently, research suggests that individuals with psychiatric disorders have a 1.5- to 2-fold greater risk of developing diabetes than the general population (10). This increased risk for diabetes is often associated with use of second-generation antipsychotic agents (SGAs), such as atypical psychotropics (11-13). At present, SGAs are often considered as first-line therapy for the treatment of schizophrenia and other psychiatric disorders because of fewer adverse effects (such as tardive dyskinesia and other impairments in physical movement) compared with the
| Prevalence | • 24 million affected worldwide; 2.4 million in the United States  
  • No discrimination in gender or ethnic group  
  • Rarely seen in children, but awareness and diagnosed cases increasing  
  • Symptoms first noted between 16 and 30 years of age  
  • Most individuals diagnosed before age 45 |
|-----------------|--------------------------------------------------|
| Positive symptoms (psychotic behaviors not seen in healthy persons) | • Hallucinations of all the senses  
  • Delusions (e.g., grandeur, paranoia, persecution, bizarre presence)  
  • Thought disorders (e.g., disorganized thinking, creation of meaningless words, garbled talk)  
  • Movement disorders (e.g., agitated or repetitive body movements versus catatonia)  
  • Difficulty with critical thinking processes  
  • Easily distracted; difficulty focusing on a topic  
  • Difficulty in retaining and readily applying new information |
| Negative symptoms (disruptions of normal emotions and behaviors; may be mistaken for depression) | • Flat affect  
  • Lack of pleasure in everyday life  
  • Inability to initiate and continue planned activities (including activities of daily living and independent activities of daily living)  
  • Limited verbal interaction |
| Cognitive symptoms (often difficult to recognize) | • Difficulty with critical thinking processes  
  • Easily distracted; difficulty focusing on a topic  
  • Difficulty in retaining and readily applying new information |
| Diagnosis (2) | 1) Presence of 2 of 5 of these symptoms: delusions; hallucinations; incoherent, derailed, or disorganized speech; catatonic or extremely disorganized behavior; negative symptoms (reduced speech or flat affect); and 2) presence of at least 1 of these 3 symptoms: delusions, hallucinations, and disorganized speech  
  • Difficult to diagnose in teens because symptoms resemble adolescent behaviors that occur periodically, such as changing friendships, a decline in grades for coursework, changing sleep patterns, irritability  
  • Combination of factors highly predictive for diagnosis in teens (identifies up to 80% of those at high risk): isolation and withdrawal from others + increased frequency of unusual thoughts and suspicions + family history of psychosis |
| Etiology | Genetics:  
  • Occurs in 10% with affected first-degree relative  
  • 40% to 65% occurrence in identical twins  
  • Believed to be due to genetic mutation(s) resulting in disruption of brain chemical development  
  • Appears genetically related to bipolar disorder  
  Possible environmental factors:  
  • Exposure to viruses or malnutrition in utero  
  • Problems during birth delivery  
  • Yet unknown psychosocial factors  
  Possible imbalance and dysregulation of neurotransmitters and structural differences that may have begun in utero but are not evident until puberty or after |
| Relationship to other mental disorders and behavioral problems | • Increased risk (10% of this population) for suicide attempts (highest in young adult males)  
  • Increased risk for tobacco abuse compared to general population (nicotine addiction is 3 times greater)  
  • Increased risk for alcohol or substance abuse compared to general population |
| Societal implications | • Inability to care for oneself or obtain/maintain employment, results in dependence on family/community/governmental services for survival  
  • Homelessness |
### Table 1. Schizophrenia at a Glance (1-5) continued

<table>
<thead>
<tr>
<th>Potential impact on eating habits and nutritional status (3,4)</th>
<th>Medications:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increased appetite and weight gain is common</td>
<td>• First-generation “typical” antipsychotics available since the mid-1950s: chlorpromazine, haloperidol, perphenazine, fluphenazine</td>
</tr>
<tr>
<td>• Reduced energy needs (280 kcal/day) with clozapine; monitor weight trend with other antipsychotics and adjust as indicated</td>
<td>• Second-generation “atypical” antipsychotics available since the 1990s: clozapine, risperidone, olanzapine, quetiapine, ziprasidone, aripiprazole, paliperidone</td>
</tr>
<tr>
<td>• Dental problems</td>
<td>Potential adverse effects:</td>
</tr>
<tr>
<td>• Dry mouth, increased thirst related to adverse effects of antipsychotic medications</td>
<td>• Agranulocytosis (clozapine)</td>
</tr>
<tr>
<td>• Polydipsia and resultant water intoxication</td>
<td>• Drowsiness</td>
</tr>
<tr>
<td>• Constipation; check fiber intake</td>
<td>• Dizziness related to change in position</td>
</tr>
<tr>
<td>• Omission of food groups related to food insecurity, limited resources</td>
<td>• Blurry vision</td>
</tr>
<tr>
<td>• Effects of alcohol and substance abuse on food choices and nutrient deficiencies</td>
<td>• Tachycardia</td>
</tr>
<tr>
<td>• Limited ability/decision-making skills to shop for and prepare nutrient-dense foods</td>
<td>• Photosensitivity</td>
</tr>
<tr>
<td>• Alterations in utilization, potential for nutrient deficiencies, and supplementation needed for: vitamin C, thiamin, riboflavin, vitamin D, niacin, magnesium, copper, zinc, omega-3 fatty acids</td>
<td>• Skin rashes</td>
</tr>
<tr>
<td>• Drug-nutrient interactions:</td>
<td>• Menstrual irregularities</td>
</tr>
<tr>
<td>a) Ziprasidone and quetiapine fumarate: avoid grapefruit; b) Risperidone: may increase vitamin D metabolism; c) Phenothiazines (chlorpromazine, mesoridazine, perphenazine): may increase need for riboflavin, decrease absorption of vitamin B-12; if magnesium supplements taken, give 2 hours before or after food</td>
<td>• Weight gain and associated changes in metabolism (glucose and lipid concentrations)</td>
</tr>
<tr>
<td>• Alcohol intake contraindicated with many antipsychotics</td>
<td>• Impairments in physical movement (e.g., rigidity, tremors, muscle spasms, restlessness)</td>
</tr>
<tr>
<td>• Omission of food groups related to food insecurity, limited resources</td>
<td>• Tardive dyskinesia (uncontrollable muscle movements, often affecting facial muscles around the mouth); less common in second-generation antipsychotics</td>
</tr>
</tbody>
</table>

For more information, see article in this issue on Impact of Psychotropic medications on Glycemic Control (page 13)

### Treatment modalities: Medications

<table>
<thead>
<tr>
<th>Treatment modalities: Behavioral and psychosocial approaches</th>
<th>Cognitive and behavioral therapy to reduce severity of symptoms and risk for relapse</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Coping strategies to address challenges with activities of daily living, interpersonal relationships, consistent attendance at work, school, medical appointments</td>
<td>Coping strategies to address challenges with activities of daily living, interpersonal relationships, consistent attendance at work, school, medical appointments</td>
</tr>
<tr>
<td>• Identification of early warning signs of relapse to enable prevention</td>
<td>Identification of early warning signs of relapse to enable prevention</td>
</tr>
<tr>
<td>• Integrated treatment for those with concomitant substance abuse improves outcomes</td>
<td>Integrated treatment for those with concomitant substance abuse improves outcomes</td>
</tr>
<tr>
<td>• Rehabilitation programs for job counseling/training, financial management, oral and written communication skills</td>
<td>Rehabilitation programs for job counseling/training, financial management, oral and written communication skills</td>
</tr>
<tr>
<td>• Inclusion and ongoing education and support of family and other caregivers</td>
<td>Inclusion and ongoing education and support of family and other caregivers</td>
</tr>
<tr>
<td>• Involvement in self-help groups for support and advocacy efforts</td>
<td>Involvement in self-help groups for support and advocacy efforts</td>
</tr>
</tbody>
</table>

For more information, see article in this issue on Diabetes, Depression, and Emotional Distress: Key Issues in Assessment and Clinical Intervention (page 6)

<table>
<thead>
<tr>
<th>Treatment modalities: Nutrition and lifestyle change programs</th>
<th>Weight management, with ongoing follow-up evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Vitamin/mineral supplementation to correct deficiencies</td>
<td>Weight management, with ongoing follow-up evaluation</td>
</tr>
<tr>
<td>• Interdisciplinary team approach</td>
<td>Vitamin/mineral supplementation to correct deficiencies</td>
</tr>
<tr>
<td>• Referral to other providers</td>
<td>Interdisciplinary team approach</td>
</tr>
<tr>
<td>• Referral to community agencies/programs</td>
<td>Referral to other providers</td>
</tr>
<tr>
<td>• Family/caregiver support</td>
<td>Referral to community agencies/programs</td>
</tr>
</tbody>
</table>

| | Family/caregiver support |
first-generation typical antipsychotic medications. Data linking SGAs to metabolic disturbances are conflicting, with some studies documenting a high incidence of metabolic syndrome, insulin resistance, and diabetes in individuals with psychotic and affective disorders that is independent from use of antipsychotic medications (14-16).

Rapid weight gain has been documented during the first several months of SGA treatment (10), but data linking use of SGAs as a causal effect on weight gain are mixed. Confounding factors include data showing that individuals suffering from psychiatric disorders are frequently physically inactive, consume poorly balanced diets, and have limited access to quality health care and other resources (17). For example, one study of drug-naïve patients with schizophrenia found they had more than three times the intra-abdominal fat as age- and body mass index-matched controls (18).

Not surprisingly, one strategy suggested to address the weight gain and metabolic abnormalities associated with antipsychotic medication use and schizophrenia is to select alternate medications for treatment. Mukundan and associates (19) concluded that although such an approach would appear to be prudent, the research supporting a change in medications is relatively weak due to a limited number of trials and small sample sizes.

Further research is warranted to elucidate the temporal relationship between various psychiatric disorders and diabetes and the medications used for treatment.

Prevention of Diabetes and Lifestyle Change Interventions

In 2004, triggered by numerous reports of metabolic disturbances in glycemic control, dyslipidemia, and significant weight gain in individuals treated with SGAs, the American Diabetes Association, American Psychiatric Association, American Association of Clinical Endocrinologists, and North American Association for the Study of Obesity published findings from a consensus development conference on antipsychotic drugs and obesity and diabetes (10). Recommendations for practitioners included:

- Obtain baseline screening measures before or soon after the initiation of any antipsychotic medication
- Assess parameters on an ongoing basis (frequency of monitoring based on personal/family history of obesity, diabetes, dyslipidemia, hypertension, or cardiovascular disease): weight and height (to calculate body mass index), waist circumference, blood pressure, fasting plasma glucose, and fasting lipid profile

Several studies have demonstrated the efficacy of a lifestyle intervention program for individuals with the dual diagnosis of schizophrenia and diabetes. The 24-week Diabetes Awareness and Rehabilitation Training (DART) study assigned patients older than age 40 to either the DART or the usual care plus information (UCI) group (20). Results showed a mean loss of 5 lb for those participating in the DART, while those in the UCI group gained a mean of 6 lb. In addition, the DART program was associated with a lowering of serum triglyceride values and increases in self-reported physical activity, diabetes knowledge, and self-efficacy. However, positive changes were not shown for fasting plasma glucose or glycated hemoglobin values (20).

Menza and colleagues (21) conducted a year-long prospective trial of exercise, nutrition interventions, and behavioral therapy among patients with schizophrenia and diabetes. The interventions resulted in weight loss and improved glycemic control.

Positive data also were seen in an NIMH-funded study of people with schizophrenia, bipolar disorder, and major depression who lost weight and sustained the weight loss through a modified lifestyle intervention program (22). To overcome psychosocial and economic factors that often prevent individuals with psychiatric disorders from participating in lifestyle change programs, the Achieve Healthy Lifestyles in Psychiatric Rehabilitation (ACHIEVE) Trial was conducted onsite at 10 psychiatric rehabilitation outpatient programs in Maryland. The randomized trial compared usual care, which provided information on nutrition and physical activity, to 6 months of intensive intervention, which consisted of weekly individual or group weight loss classes and exercise classes three times a week. Patients in both arms of the study were followed for an additional year after the initial study period. Most participants were taking an average of three psychotropic medications, with lithium or another mood stabilizer (to treat bipolar disorder) prescribed for at least 50%. All of these medications have been shown to cause weight gain. Participants in the intensive intervention arm not only lost 7 lb more than those in the control group, but they continued to lose weight without recidivism, despite a reduction in frequency of class offerings and counseling sessions over time (22).

Case Study

A 37-year-old African American obese male is admitted to a university medical center for uncontrolled diabetes for the third time in 3 months. He was diagnosed
with type 2 diabetes (T2DM) 3 years ago while receiving psychiatric care for schizophrenia. The patient is referred to the diabetes support team, which consists of a registered dietitian (RD), registered nurse, pharmacist, social worker, and clinical psychologist, for self-management education.

The patient is 69 inches tall and weighs 245 lb (BMI 36.2). His laboratory results upon admission are:
• Fasting Glucose: 145 mg/dL
• Hemoglobin A1C: 8.5%
• Cholesterol: 235 mg/dL
• Low-density lipoprotein cholesterol: 130 mg/dL
• Triglycerides: 165 mg/dL
• High-density lipoprotein cholesterol: 50 mg/dL
• Blood urea nitrogen: 21 mg/dL
• Creatinine: 0.8 mg/dL
• Estimated glomerular filtration rate: 80 mL/min/1.73 m²

He is currently taking risperidone (an antipsychotic), an angiotensin-converting enzyme (ACE) inhibitor for hypertension, and 500 mg metformin twice a day. He does not take any over-the-counter multivitamin-mineral, dietary, or herbal supplements.

This high school graduate has never been married and has no children. He is currently unemployed and lives with his mother, who was diagnosed with T2DM 10 years ago. He has been unable to obtain full-time employment and live independently because of schizophrenia.

During a previous hospitalization for schizophrenia and diabetes management, he received medical nutrition therapy by an inpatient RD. His mother could not attend this session because of a conflict with her work schedule.

The diabetes support team concludes that the patient and his mother would benefit from attending the diabetes self-management education sessions together. During the initial evaluation, the RD determines that the patient had a limited understanding of diabetes-related nutrition principles. He states, “I like what I like and I am getting tired of people telling me what I need or what is best for me to eat.” His eating habits consist of breakfast and dinner prepared by his mother, which are consistent with the nutrition guidelines for the management of diabetes. He frequently snacks on cheese and crackers, canned soup, and single-serving apple pies. He also eats cheeseburgers at a local fast food establishment twice a week.

The RD provides an individualized nutrition plan that incorporates some of the patient’s personal preferences. She also suggests modifying previous habits in an effort to meet mutually identified goals for improved health and diabetes management. She uses the Teach-back technique (23) to help reinforce her nutrition recommendations at his level of cognition.

To prevent relapse, one member of the diabetes team is designated to meet with the patient and his mother on a weekly basis. Additional services will be arranged by the social worker, including a community-based adult care agency that provides day, evening, and weekend services. This agency specializes in managing patients with multiple medical and psychiatric needs. The ongoing support “is expected to” benefit the patient and provide a respite for his mother, who oversees his diabetes and schizophrenia management.

Discussion
Persons with a dual diagnosis of schizophrenia and diabetes require additional attention and comprehensive nutrition counseling. The RD needs a basic understanding of this neurologic brain disorder to tailor the nutrition counseling accordingly.

Asking the patient to recount instructions for taking medication or to describe a proposed procedure or skill can illustrate the individual’s needs and challenges. The Teach-back technique is an effective counseling method that promotes dialogue between the patient and practitioner (23). The educator first presents material on a topic(s) and then asks the patient to repeat or “teach-back” the content or skills. This helps confirm the patient’s understanding and ability to implement the recommendations. Based on the patient’s response, the clinician either presents the same information in a different format or adds new information as needed.

Best practice for the management of the person with diabetes and schizophrenia is a coordinated, concentrated team approach. Incorporating management strategies such as the Teach-back technique provides the environment to enhance learning and promote positive behavioral change. In addition, The Academy of Nutrition and Dietetics Nutrition Care Manual (3) and the Evidence Analysis Library (4) contain teaching materials and research data for the medical nutrition professional and others working with this patient population.

References


Substance Use Disorders: Diagnosis, Causes, and Treatment

Substance use disorders (SUD) are categorized with more than 300 other psychiatric diagnoses in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (1). When initially published in 1952 (DSM-I) by the American Psychiatric Association, this was the first official manual of mental disorders focusing on clinical application. The need for such a publication arose from growing recognition by the United States Army and Veterans Administration that World War II veterans needed services addressing what we now refer to as mental health disorders (2). The most recent version of the DSM, DSM-5, was released in May 2013 and continues to be viewed as the “bible” by mental health professionals who diagnose psychiatric illnesses in adults and children. It uses a multidimensional approach (i.e., consideration of clinical syndromes, developmental disorders and personality disorders, physical conditions, severity of psychosocial stressors, and highest level of functioning) as the basis for diagnosing mental health disorders because other factors in a person’s life typically affect mental health.

Compared to the DSM-IV, the DSM-5 does not differentiate between substance abuse and dependence, but instead, recognizes them as the same disorder on a continuum within a new category referred to as “addictions and related disorders” (1). To diagnose substance use disorder, the DSM-5 states that two or more criteria must be present within a 12 month period. Severity of the SUD is based on the number of criteria presented, ranging from mild (2 – 3 criteria) to moderate (4-5 criteria) to severe (6 or more criteria).

Genetic factors are recognized for their role in causing substance use disorders. Additional theories about the causes of substance use disorder include a desire to cover up or obtain relief from an uncomfortable life situation or chronic problem, (i.e., self-medicating to address emotional or physical pain) (1).

Magnitude of the Problem

- In 2012, the Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, and the United States Department of Health and Human Services published a 162-page report of findings from the 2011 National Survey on Drug Use and Health (NSDUH) (3). This survey is conducted annually to gather information about the use of illicit drugs, alcohol, and tobacco, with data collected during the month just preceding the survey interview. The 2011 interviews involved approximately 67,500 nonmilitary, noninstitutionalized individuals aged 12 years or older. The following is a snapshot of the 2012 report. Survey results have been extrapolated to reflect trends applicable to the larger United States population."
- An estimated 22.5 million people (8.7% of the population) were currently using illicit drugs, defined as marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics (pain relievers, tranquilizers, stimulants, and sedatives) used nonmedically.
- Slightly more than 50% of respondents reportedly had consumed alcohol, with slightly more than 58 million individuals (22.6% of the population) having engaged in binge drinking (defined as having 5 or more drinks on the same occasion) on at least 1 day during the 30 days before the survey.
Among young adults aged 18 to 25 years, binge drinking was reported by nearly 40% of respondents, with heavy drinking reported for more than 12%. Heavy drinking was defined as binge drinking on at least 5 days during the past 30 days.

Slightly more than 68 million Americans (26.5%) reported using tobacco products, with the majority smoking cigarettes (22.1%), followed by cigars (5%), smokeless tobacco (3.2%), and pipes (<1%).

Not quite 21 million individuals (8% of the population) were estimated to meet the criteria for substance dependence or abuse, according to the DSM-IV criteria.

Treatment provided by medical facilities specializing in substance abuse (now categorized as SUD in DSM-5) is severely lacking for those in need. Of the nearly 22 million individuals aged 12 years or older in need of treatment for illicit drug or alcohol abuse, fewer than 11% received treatment.

Prevalence of Substance Use Disorder in Individuals With Diabetes

The NSDUH survey was conducted among the general United States population and did not identify participants who had a coexisting diagnosis of diabetes. Nonetheless, given the number of individuals known to have diabetes in this country (25.8 million) (4), medical nutrition professionals/diabetes educators inevitably will work with a number of patients who have both diabetes and a substance use disorder diagnosis.

Tobacco Use

Recent data from the Centers for Disease Control and Prevention found that 20% of adults aged 18 years or older with diabetes reportedly smoked cigarettes (5). Several studies have linked cigarette smoking to an increased risk for microvascular complications of diabetes (6) as well as insulin resistance, elevated blood pressure, and impaired endothelial function (7,8). Other investigators have reported a dose-dependent association between cigarette smoking and the risk for type 2 diabetes (9). Early smoking cessation has been shown to reduce the risk for developing type 2 diabetes to a level comparable to that of nonsmokers (10) and to mitigate the increased risk for coronary heart disease and mortality (11).

Alcohol

Based on data gathered from epidemiologic surveys and reports of those seeking treatment, 50% to 60% of individuals with diabetes currently are estimated to use alcohol (12,13). Binge drinking has been shown to increase the risk for diabetic ketoacidosis and is an independent risk factor for peripheral neuropathy and retinopathy (14). This is particularly worrisome for adolescents and young adults with type 1 diabetes because of the risk-taking behaviors that are common in these age groups and the prevalence of binge drinking, as described previously.

Other studies have shown a higher rate of adverse health outcomes linked to alcohol (15) or other drug use substance disorders among those with diabetes. Leung and colleagues (16) reported increased hospitalizations, longer length of hospital stays, and more frequent and severe health-related complications for Medicare and/or Medicaid beneficiaries with type 2 diabetes and a coexisting diagnosis of an alcohol or substance use disorder. Finally, individuals who have substance use disorder diagnoses are less likely to follow diabetes treatment guidelines, including visits to the medical team for routine diabetes care (17).

Treatment

Research is ongoing to identify the most effective treatment approaches for individuals dealing with substance use disorders and diabetes, individually and as comorbid chronic diseases. Several studies have documented improved coordination of care and positive outcomes with a team-based care approach, as in the patient-centered medical home (18). Some investigators found reductions in nicotine dependence and the negative consequences of alcohol use with an integrated care model (18,19).

A report by Ghitza and associates (20) found implementation of this care model resulted in lower total medical costs and improved health outcomes in a variety of settings. Ongoing social support in a one-on-one or group setting, coupled with an open and non-judgmental approach have been recognized as critical components of treatment for both diabetes and substance use disorders. However, the effectiveness of participation in Alcoholics Anonymous (AA) has revealed mixed results, as described in a review by Kastakas (21). The number of people with diabetes in this review were not identified.

As reported by McLellan and colleagues in 2000 (22), part of the challenge in treating substance use disorders is fueled by a longstanding belief held by the public and some medical care providers that dependence is an acute condition, rather than a chronic illness. The researchers conducted a literature review comparing drug dependence to several other chronic diseases: type 2 diabetes, hypertension and asthma.
Comparators included diagnosis, heritability, genetic and environmental factors, pathophysiology, adherence to treatment, and relapse rates. Results of the review led the researchers to conclude that drug dependence must be viewed as a chronic illness, and that long term strategies of medication management and continued monitoring and follow-up are needed to produce lasting benefits for the patient and society.

### Hands-on Patient Nutrition Programs

The following is a discussion of hands-on nutrition and cooking programs used by registered dietitians (RDs) at the North Florida/South Georgia Veterans Health System to increase the nutrition knowledge and skill levels of patients with substance use disorders. While class composition varies, as many as one third of the participants may also have a diagnosis of diabetes.

**Nutrition Education Program**

Good nutrition is essential to recovery from substance use disorders. Eating well replenishes nutrients, enabling those in recovery to function at optimal mental and physical abilities, which helps them to participate fully in cognitive aspects of the rehabilitation program, fully engage emotionally in the process, and bolster their chances at relapse prevention by keeping their mood and emotions on an even keel.

In an effort to motivate and empower residents to make positive food choices, we have been conducting hands-on interdisciplinary (occupational therapist registered [OTR]/RD) nutrition education as an integral part of the Substance Abuse Residential Rehabilitation Treatment Program (SARRTP), at the Veterans Administration Medical Center in Gainesville, FL, since 1997. Until recently, residents of this 20-bed, 90-day program prepared most of their meals as a community. This approach allowed OTRs and RDs to reinforce didactic classes on the role of diet in recovery with actual menu planning, functional and educational shopping trips, and weekly hands-on cooking classes. Although residents currently are temporarily housed on a hospital ward, the cooking (albeit scaled-down) and shopping classes continue.

Hands-on nutrition education can benefit any patient population. Via hands-on nutrition education, adults (most of whom learn best by doing) can master basic food skills, thus boosting their self-efficacy (perceived capability) and likelihood of succeeding in the behavior change process. Edible lessons are literally internalized, resistance to trying new foods can be overcome, and patients become empowered with practical tools to actively participate in their own health care, which is the hallmark of patient-centered care. Working together in the kitchen can transform the RD-patient dynamic to foster a therapeutic alliance.

For those in recovery, active participation in food preparation and enhancement of a nutrition knowledge base can highlight one aspect of life in which they can practice self-control and self-determination while nourishing themselves both literally and emotionally. From the perspective of occupational therapy, substance use disorder leads to “role deficiency,” that is, the loss or lack of development of many roles that usually anchor a person’s life in the realms of relationships, work, leisure, and schooling. Such problems in role performance frequently serve as the catalyst for people to enter recovery programs. The hands-on approach reinforces those roles, providing successful experiences that assist in the development of motor, process, and communication skills as well as feelings of competence. Such activity can impart the sense of mastery, purpose, and structure necessary for meaningful living and successful recovery.

Nutrition education and food preparation often provide opportunities for dealing with interpersonal and other issues such as control, deprivation, and gender roles in a therapeutic environment. Cooking and taking meals together also allows residents to develop leadership skills (especially among those with food backgrounds who can contribute their expertise), lends a sense of family and normality, and can be a venue for all staff team members to model appropriate mealtime conversation and interact less formally with residents. The cooking classes have also been a terrific volunteer experience for dietetic students.

Following are some general practical guidelines for establishing and conducting hands-on cooking classes with patients/clients:

- Enlist institutional support by sharing timely reports that demonstrate cost-effectiveness and active participation by patients, highlighting the enhanced quality of care and improved patient satisfaction.
- Identify the target population. Participants can be outpatients with similar diagnoses, people interested in eating well on a tight budget, or those who simply want to stay healthy. Including family members in the program...
multiplies the effect.
• Ideally, find a well-lit kitchen venue where equipment can be stored securely and work surfaces and spaces allow for group preparation. The location should be easy to access and have sufficient parking.
• Try to approximate the standard participant’s basic kitchen equipment to make everyone feel at home and recognize that they do not need fancy utensils and machines for healthy food preparation. Suggestions for heart-healthy cookware are provided as well as encouragement to try using a second-generation (non-jiggle top) pressure cooker to increase the repertoire of delicious foods (beans!!) and decrease time spent in a hot kitchen.
• Use a patient-centered approach for the cooking class. Keeping the atmosphere supportive, nonjudgmental, gentle, and fun can inspire creativity, confidence, and ownership. Include participants in the planning by asking them to submit recipes and survey their likes, dislikes, medical needs, and interests.
• Limit the class size to 5 to 10 participants (depending on space and staffing) and prepare a small number of dishes to reduce the anxiety level. Having more than one staff person plus student volunteers allows us to work in smaller groups on several recipes simultaneously. Preparing the space in advance by setting up “stations” with each written recipe and its corresponding ingredients and utensils streamlines the process. We begin by gathering the entire group, explaining what we are going to prepare and the accompanying nutritional concepts/benefits, which sets the intention, putting the lesson into a larger framework. Before the first cooking class, a session on kitchen sanitation and safety is very helpful (we use a video and quiz). Obviously, everyone must understand that they must wash their hands before beginning to work.
• Establish an overall learning goal of demystifying the process of putting food on the table. This can be accomplished by imparting general kitchen skills (e.g., measuring ingredients, use of knives); techniques and shortcuts; use of equipment; sanitation and safety; following and modifying recipes; preparing food from scratch for control of nutrient content; preparing lower fat and sodium, higher fiber, less processed, less expensive, better-tasting food; overcoming fear of trying new foods; and reducing the carbon footprint. Specific aspects are predicated by participants’ interests and nutrition goals.
• Introduce new foods (e.g., tofu, quinoa) by weaving the familiar with the less familiar. For example, we make changes in traditional southern recipes, such as preparing collards seasoned with lemon juice or sesame oil instead of fatback (fatty cut of meat from a pig’s back), creating barbeque tempeh with a homemade low-sodium sauce, crafting a glorified version of macaroni and cheese by sneaking in some tofu, and developing an oriental stir fry with gluten (affectionately dubbed “Chinese Chitlins”). Presenting nutrient dense foods and their role in disease prevention and treatment along with discussion of additional health-related topics specific to the audience can pique interest and increase acceptability.
• Consider other hands-on nutrition education activities, such as field trips to farmers’ markets, “health food” stores, supermarkets, restaurants, and farms.
• Gather outcomes data with simple pre- and posttests of objective knowledge, food habits, attitudes, and/or self-efficacy. Do the participants still think of tofu as a four-letter word? Share your results with institution administrators to gain support for expanding the program.

Incorporating hands-on nutrition education into your RD toolbox can enhance customer success while broadening your skills, job satisfaction, and fun quotient.

“Cook for Life” Program
“Cook for Life” was launched in August 2011, and is the Gainesville, FL, version of the Veterans’ Administration Nutrition and Food Services’ “Healthy Teaching Kitchen” project. Conducted by two RDs, the format includes 5 weeks of 2-hour sessions. Four of the sessions are hands-on cooking classes (very roughly themed breakfast, lunch, dinner, and snacks) and one session is a “consumer savvy” field trip to a local food market. Veterans are referred from the MOVE weight management program and outpatient nutrition clinics, most commonly due to one or more health concerns of overweight, hypertension, or diabetes. Our mission is to give participants the tools and motivation to prepare healthy, tasty, affordable meals to meet their dietary needs. The class is usually limited to four to eight people, and Veterans are encouraged to bring their significant others or family members.

Before the first class, students
complete an interest/needs survey (so we can tailor the menu items and topics to each cohort) and a preprogram questionnaire. The questionnaire is designed to discern each participant’s baseline in terms of dietary knowledge, attitudes, and self-efficacy. At the end of the final session, we ask them to complete the questionnaire again as well as a participant evaluation of the program. Using this material, we can generate quantitative data to document any changes in the dietary indices and qualitative data about the program to help us modify and improve it.

As of September 2012, data has been collected from 22 of 31 participants (several participants did not attend the final meeting). The knowledge and attitudinal sections of the questionnaires produced less useful results. This may be due to confusing wording of the items, such as “Write the number that best reflects how you feel right now (1 – 5 from strongly disagree to strongly agree): Unsalted foods always taste terrible.” There were only four or five items in those sections. In contrast, the self-efficacy questions revealed definitive changes. Participants were asked to rate their degree of confidence by recording a number from 0 – 100 using a scale ranging from 0 = cannot do at all to 100 = highly certain can do. One example that they were asked to rate was: “How certain are you that you can … shop for healthy food?” By tracking general trends (grouping results: 0 to 49%, 50% to 79%, 80% to 100% ) rather than smaller incremental changes, the self-efficacy data indicated a clear trend from “clueless” to “confident” in all ten items. These results are particularly gratifying because the adherence literature reveals self-efficacy to be the only consistent indicator of behavioral change (23, 24, 25). In other words, people who perceive themselves as capable of doing something are much more likely to attempt the task and to succeed.

The program evaluation form poses questions such as “What was the most helpful part of this program?” and asks for favorite and least favorite parts as well as suggestions for improving the program. In response to “Do you feel that your participation in this program will help you in achieving your health goals?”, 19 of 22 participants answered “yes” (plus 1 neutral and 2 “somewhat”). Favorite and helpful parts of the program included linking food to health, how to prepare various foods, new ways of cooking, exposure to new foods, spices, ideas, group discussion and input, gaining confidence by hands-on cooking, getting copies of recipes, and especially eating. Other comments included “delightful surprise,” “look forward to the class each week,” and “enjoyed learning how to use a pressure cooker.” Suggestions for future classes included more meat, more menu planning, more liquids, and most commonly, more and longer sessions.

A larger data set (n=86, ) was also collected May 2011 to May 2013 from the SARRTP nutrition education program, where cooking classes have been conducted for more than 15 years. Of 69 residents who were asked “Do you feel that the nutrition knowledge and skills you gained will help you in sustaining your recovery?”, 64 wrote in “yes”, 3 “no”, and 2 “somewhat”. Although SARRTP is voluntary, residents are often surprised by the mandatory “Nourishing Recovery” didactic and hands-on cooking classes, which often lead to some initially reluctant and even hostile participants. Their feedback frequently notes that they had negative impressions initially, but then found they actually enjoyed the classes. Serendipitous positive outcomes included socializing with peers, staff, and volunteers as a means to practice social skills; discovering an interest in nutrition; realizing the joy of cooking in community; and working through other life issues via food and cooking.

Overall, “Cook for Life” participants from both groups have found hands-on cooking classes to be informative, motivating, and simply fun. The dietetic practitioners have verified that the program is extremely gratifying for them. Our goal as RDs is to teach and promote healthy food preparation and cooking habits, for a greater understanding of how diet modulates health and the acquisition of practical experience and skills to be implemented in the home. “Cook for Life” provides this in a patient-centered, nonjudgmental, supportive atmosphere where RDs can inspire creativity and confidence, empowering our Veterans to optimum nutritional wellness. As the Native American proverb states, “Tell me and I’ll forget. Show me and I may not remember. Involve me and I understand.” Complete graphed results, access to a video about “Cook for Life,” copies of our evaluation forms, and other information about the program can be obtained by contacting Renee. Hoffinger@gmail.com.

References
Accessed August 2013.


A Flourishing Approach to Mental Health in Patients With Diabetes

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Abstract
Therapeutic approaches addressing mental health often focus on mental illness (i.e., depression, stress, anxiety, and burnout) rather than mental health. This has led to treatment approaches primarily focused on what clinicians characterize as “coping.” We suggest additional treatment approaches rooted in mental health in an attempt to expand the treatment repertoire of health care providers, explore salutogenesis (i.e., the study of what causes health), and introduce the concept of “flourishing with diabetes.”

Introduction
The mental health aspect of living with diabetes is often referred to in negative terms, such as coping with depression, denial, stress, shame, and guilt. Working from this negative perspective embodies a “coping mindset,” which focuses on what is not working, followed by a problem-solving process that attempts to move the patient to what is considered “normal” functioning. Further, patients are generally guided to work at avoiding negative outcomes, such as complications, overweight, high blood glucose values, depression, and anxiety.

Remarkably, little attention is given to people who are living well with diabetes and, in fact, may be experiencing a benefit living with diabetes. Such people may be described as “flourishing” in that they have moved beyond coping and are living healthy, happy, and meaningful lives, not despite their diabetes but because of it. Exploring the causes of flourishing yields a different treatment approach that we term working from a “flourishing mindset.”

A review of the literature explains the concept of flourishing and provides case studies and practical tips that health care providers can use to aid patients in designing forward-looking approaches to care.

Literature
Emerging research investigating the flourishing mindset includes knowledge on salutogenesis, solution-focused brief therapy (SFBT), and positive psychology.

Most literature on diabetes and mental health focuses on mental illness (1). Titles of mainstream books are illustrative: Diabetes Burnout: What to Do When You Can’t Take it Anymore (2), Psyching Out Diabetes: A Positive Approach to Your Negative Emotions (3), Depression and Diabetes (4), and The Mind-Body Diabetes Revolution: The Proven Way to Control Your Blood Sugar by Managing Stress, Depression, Anger and Other Emotions (5).

Hislop and colleagues (6) investigated the prevalence of psychological distress in young adults with type 1 diabetes. They found that 64.8% had experienced no distress at all, which the authors considered “normal,” and 35.2% had experienced moderate and severe distress, which they considered to be “abnormal.” Instead of investigating why 64.8% had experienced no distress, the authors focused solely on those whom they considered abnormal.

In contrast, medical sociologist Aaron Antonovsky has conducted inquiries into the origins of good health (7,8). To his surprise, his research showed that nearly one third of a research population of Holocaust survivors were maintaining good health and leading satisfying lives. He asked the salutogenic question, “How can a person be moved toward greater health?”

His research identified biological, material, and psychosocial factors that he defined as generalized resistance resources, including
optimism, self-efficacy, learned resourcefulness, hardiness, money, social support, intelligence, and tradition. The commonalities in these factors are captured in his “Sense of Coherence” (SOC) theory, which identifies three key elements necessary to move people to greater health:

1. Understanding the challenge (comprehensibility)
2. Believing that resources are within or available (manageability)
3. Being motivated (meaningfulness)

Antonovsky concludes that the stronger a person’s SOC, the more successful would be his or her attempts at creating health (8). Thus, a treatment plan that addresses these three points will likely enable patients to be more successful in reaching good health.

SfBT is a psychotherapy-based coaching approach whose orientation is “solution-focused” rather than “problem-focused” (9-11). SfBT aims to assist patients in setting goals and designing solutions and strategies to promote movement forward. Among the SfBT practices are helping patients to discover their strengths; search for “exceptions”; identify times when the problem or situation does not exist and contributors to that; and recall successes, exploring the factors and choices that led to their creation.

The guiding principle of SfBT is a coach and thinking partner approach. Many of the techniques can be helpful for health care professionals working with people with diabetes (12). Three representative techniques are: 1) scaling questions, in which patients determine where to place themselves on a scale from 0 (extremely poor/nonexistent) to 10 (excellent) in terms of self-management tasks and psychological well-being; 2) identifying strengths and exceptions; and 3) asking the “Miracle Question,” in which patients describe their desired future state and visualize solutions (9). Patients are then asked to design a next step to bring them closer to the envisioned ideal state.

The positive psychology movement also advocates seeking health through a more positive approach (13). Martin Seligman, PhD, considered by many to be the father of this movement, writes: “Positive mental health is a presence: the presence of positive emotion, the presence of engagement, the presence of meaning, the presence of good relationships, and the presence of accomplishment. Being in a state of mental health is not merely being disorder-free; rather it is the presence of flourishing” (14).

Barbara Fredrickson, PhD, has developed a “broaden and build” theory, stating that positive emotions such as joy, curiosity, contentment, love, play, gratitude, and appreciation broaden an individual’s mindset to be more open, see new possibilities, create social ties, and be more creative and flexible (15). These capacities build an individual’s well of inner strengths and resources from physical and intellectual to social and psychological, enlivening mental health. Frederickson also proposes that negative emotions such as fear, guilt, and shame narrow a person’s mindset, leaving individuals with fewer capabilities and resources. The positive psychology approach would encourage asking the unthinkable question: “What good has diabetes given the patient?”
Focusing on what causes health, rather than what causes illness yields additional treatment options that may lead to improved outcomes for both patients and providers (Table 1) (13, 16).

Clinical Applications
Table 2 illustrates samples of the first author’s experience in applying the flourishing approach in her workshops and coaching practice.

Conclusions
Based on emerging scientific evidence and anecdotal reports, the addition of a flourishing approach to existing treatment and coping strategies can generate new and effective methods of support and promotion of well-being in people with diabetes. Health care professionals can incorporate the strategies related to the flourishing mindset to leverage the expertise of patients and collaboratively find ways forward that are context-sensitive.

What remains is an urgent need for scientific and clinical research to analyze and evaluate the impact of this approach on self-efficacy, clinical outcome indicators such as the glycated hemoglobin, and long-term sustainability. In addition, implementation of the flourishing approach to treatment may challenge the skill sets of some health care professionals, which requires further research.

References
5. Surwit RS. The Mind-Body Diabetes

<table>
<thead>
<tr>
<th>Situation</th>
<th>Flourishing Approach</th>
<th>Observed Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010. 65-year-old married woman who had been diagnosed with type 1 diabetes 9 months previously. With the difficulty she is having in managing blood glucose, she is stressed and frustrated. Referred by her Certified Diabetes Educator.</td>
<td>Three sessions. Patient was asked to tell her life story. Provider and patient together identified the patient’s strengths and co-designed mechanisms for healthier habits.</td>
<td>Improved understanding of carbohydrate counting and the impact of food on blood glucose, increased confidence, and improvement in blood glucose control.</td>
</tr>
<tr>
<td>2011. Children with Diabetes Workshop. Parents of children with type 1 diabetes and adult patients with type 1 diabetes.</td>
<td>After introducing the coping and flourishing mindsets, the provider asked, “What is one positive thing that diabetes has given you?”</td>
<td>All 35 participants wrote one positive thing on pieces of paper; all stood, and smiling, shared what they had written, using a microphone.</td>
</tr>
<tr>
<td>2010. Diabetes Sisters Workshop. 100 female participants with either type 1 or type 2 diabetes.</td>
<td>Participants worked in pairs, sharing a difficulty in their lives that they had overcome. Partner listened for strengths. Three stories were shared with the group, noting how the identified strengths could facilitate better diabetes management.</td>
<td>Participants felt pride in recalling their successes and recognizing personal strengths. New insights were gained regarding how to resolve issues and to use strengths to improve diabetes management.</td>
</tr>
<tr>
<td>2013. Two-day workshop for the Diabetes Prevention &amp; Treatment Program for the Pascua Yaqui Tribe. First day for health care providers only. Second day for returning health care providers and patients they invited. Day one had 28 participants and day two had 52 participants.</td>
<td>Health care providers learned empathic listening techniques, identifying strengths, and coaching practices as well as how to apply these with their patients on day 2. Patients were asked to identify one good thing diabetes has given them.</td>
<td>Health care providers were invigorated by the approaches they learned/practiced. Patients identified personal successes and internal resources and expressed pride, increased confidence, and a renewed desire to improve their diabetes care. Each patient offered one positive thing diabetes had given them. Energy was high.</td>
</tr>
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Table 2. Applying the Flourishing Approach
Tips for Working From a Flourishing Mindset

1. Begin each session asking, “What’s improved since we last met?” This encourages the patient to reflect on successes, thereby guiding the visit in a positive direction.

2. Ask the patient to share a challenge or difficult life event and describe the steps he or she took to overcome it. Listen for strengths that were used, provide congratulations, and ask, “How can you use these strengths to help improve your diabetes management?”

3. When looking at a patient’s logbook or discussing proposed nutrition interventions, focus on what he or she is doing well, such as blood glucose numbers that are in range or the two vegetables a week he or she does eat. Ask “How did you do this?” and “What can you do to make this happen more often?”

4. Provide patients with suggested areas where improvement is needed and ask them to identify areas of focus and goal setting. Patients are more likely to be successful when they feel ownership for the goal. Discuss ideas for improvement and encourage the patient to implement one or two of them. Even if the selected approach(es) is/are not successful initially, the patient is more likely to engage in alternative approaches and future recommendations by the health care provider, if given the opportunity to choose.

5. Be present, attentive, and mindful in your visit with a patient. Show genuine curiosity and interest. As is often quoted in medicine, “Patients don’t care how much you know until they know how much you care.”

CPE CREDIT

ANSWER KEY

See the CPE credit self-assessment questionnaire on page 38.

1. A
2. B
3. C
4. C
5. D
6. B
7. D
8. C
9. D
10. A
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CPE Credit Self-Assessment Questionnaire

Select the one best answer for each question below.

1) The strength of the relationship between major depressive disorder (MDD) and chronic illness indicates:
   a. Chronic illness in younger adults is more closely associated with MDD than in older adults.
   b. Chronic illness in older adults is more closely associated with MDD than in younger adults.
   c. The incidence of MDD is similar regardless of age in those who have a chronic illness.
   d. There is no relationship between MDD, chronic illness and age.

2) When both structured clinical interviews for major depressive disorder (MDD) and self-report questionnaires that measure diabetes-related distress are used, findings indicate:
   a. MDD is closely associated with diabetes self-management and glycemic control.
   b. Diabetes-related distress is closely associated with diabetes self-management and glycemic control.
   c. Both MDD and diabetes-related distress have a similar correlation with diabetes self-management and glycemic control.
   d. No conclusions are able to be drawn regarding the impact of either MDD or diabetes-related distress on diabetes self-management and glycemic control.

3) For adults taking second-generation antipsychotics (SGAs), the recommendations for monitoring weight are:
   a. Every 4 weeks for the first three months and then semi-annually
   b. Every 3 months
   c. Every 4 weeks for the first three months and then quarterly
   d. Every 6 months

4) During the first several months of second-generation antipsychotic agent (SGA) treatment, individuals often experience:
   a. Healthier eating habits
   b. Increase in desire for physical activity
   c. Rapid weight gain
   d. Reduction in body mass index

5) Cognitive restructuring, a technique used in cognitive-behavior therapy:
   a. Exposes the client to repeated, detailed imaging of the trauma in a controlled setting
   b. Assists the client in confronting the trauma, one part at a time
   c. Is based on the premise that the person with PTSD has learned to fear feelings that now remind him or her of the traumatic event
   d. Challenges the belief that the person is to blame for the traumatic event and replaces it with a more acceptable perspective of the memory

6) An effective teaching strategy for those with PTSD is to:
   a. Make sure the client understands that diabetes education is the first priority in treatment of their health issues
   b. Provide education sessions that are of short duration
   c. Avoid setting one or two SMART goals with the client as this will be too overwhelming
   d. Always use individual counseling as this is most effective in conveying diabetes self-management education

7) The co-existence of diabetes and psychiatric illnesses, including schizophrenia, may be associated with:
   a. Decreased levels of stress and anxiety
   b. Increased self-esteem after a diagnosis of diabetes
   c. Schizophrenia as a dependent risk factor for glucose intolerance and diabetes
   d. Use of second-generation antipsychotic agents (SGAs)

8) Select the correct statement:
   a. Alcoholics Anonymous (AA) has shown to be best practice in treating substance use disorders with high levels of success.
   b. Individuals with substance use disorders benefit from honesty and judgmental advice from team members.
   c. Substance dependence must be viewed as a chronic illness requiring long term strategies of medication management and monitoring.
   d. Substance use disorders are considered an acute condition rather than a chronic illness.

9) The medical sociologist Aaron Antonovsky has identified which of the following in his “Sense of Coherence” theory?
   a. Being motivated
   b. Believing that resources are available
   c. Understanding the challenge
   d. All of the above

10) The “flourishing mindset” when treating individuals with diabetes may be described as:
    a. Collaborative
    b. Depressive
    c. Out-dated
    d. Negative
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