

Treatment Decisions in Major Mental Illness: Weighing the Outcomes

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Increased morbidity and mortality in persons with severe mental illness (SMI) are due in large part to preventable medical conditions. An array of factors contributes to the development of obesity and other medical problems, such as diabetes and cardiovascular disease. A holistic approach that integrates both mental and physical health is critical in treating individuals with SMI. The most common causes of disability and death are influenced by behaviors such as smoking, poor nutrition, and lack of exercise. Nonpharmacologic interventions focusing on lifestyle changes can help to prevent and manage psychotropic-associated weight gain. Furthermore, monitoring and treatment guidelines are underutilized in people with SMI; increased use of these guidelines could help to detect and possibly prevent some cardiometabolic problems. *(J Clin Psychiatry 2007;68[suppl 12]:5-11)*

THE PROBLEM

There is an urgent need to address the physical health and well-being of people with severe mental illness (SMI). This population has a significantly increased rate of morbidity and mortality and will lose a staggering 13 to 30 years of life as compared to their nonpsychiatric cohorts.¹ Many studies over the past 30 years have found high rates of physical health-related problems, as well as premature death, among individuals with SMIs.² In one study, nearly half of the patients with mental illnesses had at least 1 chronic illness that limited daily functioning.² People with mental illnesses are also more likely to have multiple comorbidities. One study found that adults with a mental illness were approximately twice as likely to have multiple medical disorders as compared with adults without mental illness.² Further complicating this issue is the fact that detection of these physical health problems remains poor.²

While suicide and injury account for about 30% to 40% of this excess mortality, about 60% of premature deaths in

persons with schizophrenia are due to “natural causes.”³ In people with SMIs, these “natural causes” include cardiovascular diseases; diabetes and diabetes-related conditions; respiratory diseases, including influenza and pneumonia; and infectious diseases such as human immunodeficiency virus/acquired immunodeficiency syndrome.³ While these diseases are also prevalent in the general population, their impact on individuals with SMI is significantly greater.³

The National Association of State Mental Health Program Directors (NASMHPD) Medical Directors Council recently published a report on the morbidity and mortality observed in people with SMIs. The council concluded that most morbidity and mortality seen in this population are due to preventable medical conditions.³ The morbidity and mortality are largely due to a higher prevalence of modifiable risk factors, many of which are related to individual lifestyle choices. In addition, this report found that access to health care is problematic for individuals with SMI.³

A confluence of patient, provider, and system factors has created a situation in which access to quality physical health care is challenging and often fragmented. Patient factors including lower socioeconomic status, impaired cognition and social skills, fearfulness, and lack of awareness of the need to address physical health issues all contribute to the problems of competing provider demands, stigma, and the fragmentation of systems currently in place.³ Further compounding the problem are the overuse, underuse, and misuse of the health care system by persons with SMI.³ The overuse of emergency room care, the underuse of preventive services, lower rates of cardiovascular procedures, and poor treatment of existing medical problems such as diabetes in this population all make access to and delivery of health care quite poor.³ Indeed,

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during hospitalization, persons with schizophrenia are almost twice as likely to have infections due to their lack of medical care.³

The growing problem of medical comorbidities and premature death in people with SMIs is an urgent call to action. It is crucial that psychiatric professionals broaden their treatment paradigm to include the whole person; they must treat not only the mind, but the body and spirit as well.⁴ Psychiatric professionals must collaborate with both the patient and the primary care provider to address these multiple aspects of health and wellness.⁴ A well-functioning therapeutic alliance is necessary for the optimization of psychiatric and physical outcomes in this population.⁴

POSSIBLE SOLUTIONS

Various approaches have been proposed and are available to improve the detection, prevention, and treatment of medical comorbidities in people with SMIs. These approaches focus on understanding the prevalence and causes of medical comorbidities, providing quality health care, improving modifiable lifestyle behaviors, and improving integrated models of health care for persons with SMI.

Better Adherence to Guidelines

One important area that could benefit from a more integrated and cooperative approach between primary care and mental health providers is in the implementation of monitoring and management guidelines for individuals taking second-generation antipsychotic (SGA) medications. The prescribing of SGAs has grown substantially since the early 1990s,³ largely due to fewer associated neurologic side effects. However, these drugs have also become more highly associated with weight gain, diabetes, dyslipidemia, insulin resistance, and the metabolic syndrome.⁵ Because of the increased risk of metabolic disturbances associated with the use of SGAs, several authoritative guidelines have been developed for the monitoring and management of metabolic disturbances in individuals taking SGAs. Guidelines and recommendations from the American Diabetes Association (ADA) and the American Psychiatric Association (APA) Consensus Development Conference on Antipsychotic Drugs and Obesity and Diabetes have been developed for use in patients taking SGAs. Although these guidelines have been available for several years, they continue to be underutilized, despite the fact that improvements in monitoring could help detect and possibly prevent the development of some metabolic problems.⁵

The NASMHPD report on morbidity and mortality seen in people with SMI also addresses the impact of medications in individuals with SMIs.³ A key finding of the report was that monitoring and treatment guidelines designed to lower the risk associated with SGAs are underutilized in

the SMI population.³ Actions such as increasing routine monitoring of individuals taking SGAs, referral of abnormalities to primary care providers for treatment, and coordination of care between primary care and mental health are sorely needed. Unfortunately, the task of creating structures and incentives necessary for the integration of physical and mental health care is not a simple one; there remains much uncertainty regarding how to accomplish this. A multidisciplinary team approach has been suggested, in which the skills of psychiatrists, nurses, social workers, and primary care professionals would be utilized; the entire treatment team would work collaboratively with patients and their family members to help bridge the gap that currently exists between mental and physical health care. In fact, psychiatric nurses, because of their holistic training and treatment approach, are well prepared to work collaboratively with mental and physical health care providers and systems.⁶

Attention to Risk Factors

Another important area to address is the modifiable risk factors that contribute to increased medical morbidity and mortality in patients with SMIs. The most common causes of disability and death are heart disease, cancer, stroke, respiratory disease, accidents, and diabetes.⁷ All of these causes of mortality and morbidity are impacted by behavioral and lifestyle factors, including smoking, obesity, lack of exercise, diet, and substance abuse. Such lifestyle modifications require changes within the individual and, ideally, should be approached as a partnership between the health care professional and the individual. Many individuals with SMIs either are unaware of the need to change or do not possess the knowledge and skills required to make such lifestyle changes. Physicians, nurses, and other members of the multidisciplinary team can help educate and motivate people with SMIs to address their lifestyle habits such as smoking, diet, and exercise through the use of effective behavioral interventions. A simple intervention such as asking patients if they smoke and advising them to quit can make a difference.

Cardiovascular disease (CVD) is the leading cause of death in this country and accounts for 29% of all deaths.⁷ Therefore, it is understandable that CVD and associated illnesses should be of great importance to the health care professional who is treating individuals with SMIs. The Framingham Heart Study⁸ calculated the odds of an individual developing CVD by the number of risk factors a person has, including an increased body mass index (BMI), smoking, total cholesterol, diabetes mellitus, and hypertension. Individuals with multiple risk factors are at much greater risk of CVD.⁸ Therefore, it is important to assess each risk factor and intervene as appropriate.

The ADA has initiated the Cardiometabolic Risk Initiative in an effort to combat CVD and type 2 diabetes mellitus.⁹ Cardiometabolic risk describes a set of risk factors

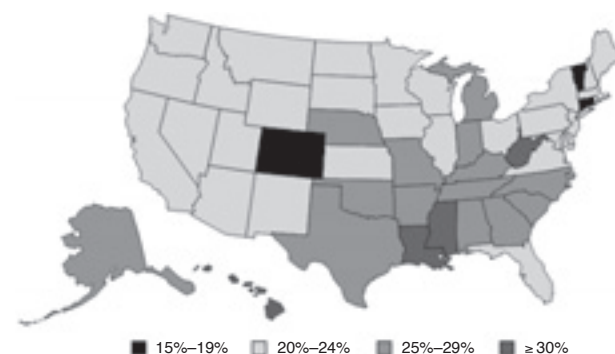
that together indicate an individual's overall risk of developing CVD and diabetes; these risk factors include obesity, high LDL cholesterol, high triglycerides, low HDL cholesterol, high blood pressure, smoking, and physical inactivity.⁹ As previously mentioned, the SMI patient population has a particularly high prevalence of these risk factors and is therefore at greater cardiometabolic risk. Physical inactivity is one of the risk factors that can perhaps most easily be addressed by health care providers and modified in individuals with SMIs. An intervention as simple as advising patients with SMIs to be less sedentary and incorporate more physical activity into their daily routine can help them modify their behaviors.

Adding to their increased risk of cardiometabolic disease and the low monitoring rates of SGA usage in patients with SMI is the fact that individuals with schizophrenia are also undertreated for cardiometabolic disorders, as evidenced by results from the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study.¹⁰ In this study, 1460 schizophrenic subjects were followed and found to have nontreatment rates ranging from 30.2% for diabetes, to 62.4% for hypertension, to 88.0% for dyslipidemia.¹⁰ The results of this study underscore the high likelihood that metabolic disorders go untreated in individuals with schizophrenia. Not only are substantial improvements in health screening and monitoring needed in this vulnerable population, but it is also imperative that the standard of care applied for the general population be implemented in the care of people with SMIs, especially since the data show higher degrees of risk and disease in this population.³

The adaptation to healthier lifestyles for individuals with SMIs, including recovery from addictions such as tobacco use, is well within the realm of possibilities.⁶ Tobacco use among SMI patients has many deleterious effects. Up to 85% of individuals with SMIs will die and/or have a reduced quality of life because of a tobacco-related disease, but only 50% are advised to quit by any physician.⁶ The danger is that nicotine use is a trigger for other substance use and can alter medication blood levels.⁶ The use of smoking cessation programs in this population has been met with encouraging results, although pharmacotherapy strategies of a higher-dose nicotine patch, the combination of nicotine gum and a patch, and/or the use of augmentation medication to nicotine replacement should be evaluated in future programs.¹¹ At a minimum, psychiatric professionals should assess tobacco use in all patients, advise all tobacco users to quit, assist patients in developing a quit plan, and arrange follow-up.

Other important lifestyle areas to address in individuals with SMIs include eating habits and physical activity. Additionally, the prevention or reversal of weight gain caused by psychotropic medications should be a goal. Several studies of interventions employing a combination of better nutrition, increased physical activity, and motivational ac-

Figure 1. Obesity Trends Among U.S. Adults (Behavioral Risk Factor Surveillance System, 2005)^a



^aReprinted from the Centers for Disease Control and Prevention.¹⁴ Figure shows percentages of adults with a body mass index ≥ 30 , or ~ 30 lb overweight for 5'4" person.

tivities have shown impressive outcomes regarding weight loss and/or the prevention of weight gain with psychotropic drugs.^{12,13} Weight loss has many health-related benefits that are of particular importance to SMI patients, including a reduction in risk of diabetes and CVD, reduction of serum triglycerides and total LDL cholesterol concentrations, increase in HDL cholesterol concentrations, and reduction in blood glucose concentrations and hemoglobin A1c among patients with type 2 diabetes. However, interventions that address nutrition, physical activity, and weight management have not become a routine part of psychiatric care.

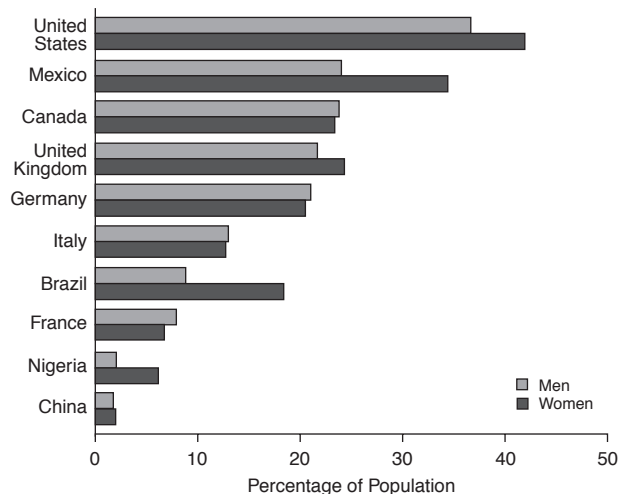
Obesity trends across the nation have reached staggering rates, as shown in Figure 1.¹⁴ In fact, the prevalence of obesity in the United States has increased significantly over the past 3 decades, from 25.4% for the period 1976–1980 to 35.2% for the period 1988–1994.¹⁵ In addition, when compared to obesity rates in other countries, the United States does not fare well, as shown in Figure 2.¹⁶

However, even moderate weight loss gives rise to an array of health benefits. A sustained 10% reduction in weight (for example, if a 200-lb person loses 20 lb) can lower lifetime risk for heart disease up to 4% and increase life expectancy up to 7 months.¹⁵ According to the National Heart, Lung, and Blood Institute (NHLBI), a modest weight loss of 5% to 10% results in decreased blood glucose and insulin levels, decreased blood pressure, decreased LDL ("bad") cholesterol and triglycerides, and increased HDL ("good") cholesterol.³

PROGRAMS OF ACTION

The psychiatric practitioner can involve the individual with SMI in educational and psychosocial programs that address the issues of health and wellness, which can reduce medical comorbidities in this population. An in-

Figure 2. Obesity Rate by Country: 2005 World Health Organization Global Comparable Estimates, Both Urban and Rural Populations^a



^aAdapted with permission from the World Health Organization.¹⁶

creased awareness of available interventions and approaches will assist the practitioner in selecting those psychosocial interventions best suited to the individual’s needs and preferences.

Healthy Living

The “Healthy Living” program is a multimodal weight-control program geared toward overweight and obese adults with SMI (Table 1). In a study utilizing this approach, 31 subjects with schizophrenia or schizoaffective disorder attending a psychiatric day-treatment program and taking a variety of SGAs participated in a 52-week weight-control program that incorporated nutrition, exercise, and behavioral interventions (Figure 3).¹² In addition, there were 20 subjects in the non-intervention group who received “treatment as usual.” At the end of 52 weeks, the intervention group had experienced a mean weight loss of 6.6 lb and a mean reduction of 1.7 BMI points, compared with a mean weight gain of 7.0 lb and a mean gain of 2.6 BMI points in the control group.¹² In addition, the subjects in the intervention group showed significant improvement in the amount of exercise they participated in (primarily walking), the amount of hunger they felt, and their knowledge about nutrition.¹³ Significant reductions in diastolic and systolic blood pressure (Figure 4), waist circumference, and hemoglobin A1c (Figure 5) were also seen in this study and have direct health implications for patients.¹² Further, these results suggest that individuals with SMI can adhere to and benefit from a weight control program.¹³

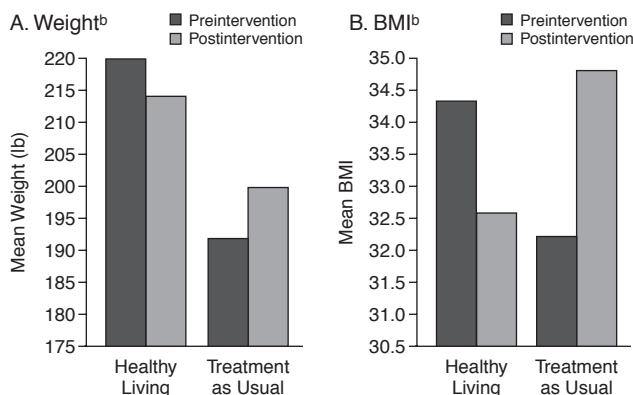
The Healthy Living program utilized national guidelines, including the NHLBI Clinical Guidelines on the

Table 1. Comparison of 1-Year Outcomes in 4 Weight-Loss Programs With “Healthy Living”^a

Program	Weight Loss (kg)	
	Mean	SD
Atkins	2.1	4.8
Zone	3.2	6.0
Weight Watchers	3.0	4.9
Ornish	3.3	7.3
Healthy Living	3.7	4.2

^aData from Menza et al.¹² and Dansinger et al.¹⁷

Figure 3. Weight and Body Mass Index (BMI) Changes in Healthy Living Participants (N = 31) Versus Controls (N = 20)^a



^aData from Menza et al.¹²

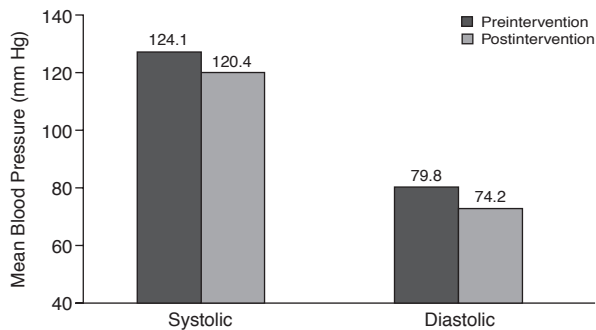
^bBetween-group comparison, $p = .01$.

Identification, Evaluation, and Treatment of Overweight and Obese Adults.¹² These guidelines advocate modifications in diet, exercise, and behavior in achieving weight loss and weight maintenance. The guidelines also encourage this combined strategy for optimal weight loss and maintenance.¹² The Healthy Living program incorporates wellness resources—“Solutions for Wellness” program materials, weekly weights, aerobic walking video classes, personalized goal setting,¹³ psychosocial approaches, and utilization of real-life examples—and encourages patients to make “small changes” in achieving weight loss or maintenance.

Small Changes

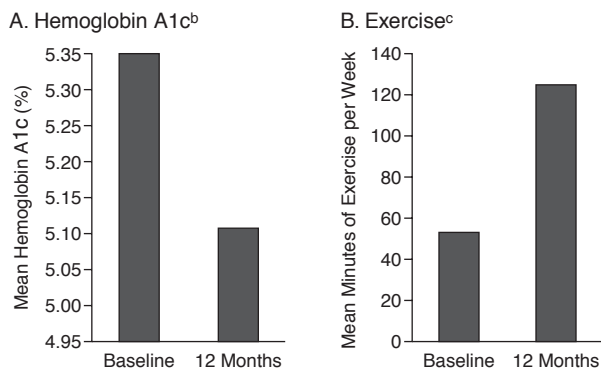
The “Small Changes” strategy for weight loss and control is a new approach with promise for people with SMI.¹⁸ The Small Changes approach is unlike traditional obesity treatment in that the goal is prevention of excessive weight gain and modest weight loss over a longer period of time. This strategy encourages the use of small everyday changes in dietary and physical activity patterns that are sustainable over time. The Small Changes plan suggests achieving some combination of reduced energy intake, by 1000 kcal/day or more, with increased physical activity,

Figure 4. Blood Pressure Changes in Healthy Living Participants (N = 31)^a



^aData from Menza et al.¹² Change in both systolic and diastolic was significant: for systolic, $t = 2.03$, $p < .05$; for diastolic, $t = 3.71$, $p = .001$.

Figure 5. Hemoglobin A1c and Exercise Changes in Healthy Living Participants (N = 31)^a



^aData from Menza et al.¹²

^b $p = .001$.

^c $p = .003$.

such as adding 2000 steps/day (about 1 mile), which is enough to stop excessive weight gain in most people.¹⁸ In patients who are already overweight or obese, simply preventing further weight gain could delay or prevent development of type 2 diabetes and other chronic diseases.¹⁸

The prevention of weight gain is an appealing strategy because small behavioral changes have been proven to be more feasible to achieve and sustain than larger ones; in fact, research has shown that big changes in caloric intake and physical activity are clearly not sustainable in the majority of people.¹⁸ Because improving both diet and physical activity patterns requires going against a culture that encourages overeating and discourages physical activity,¹⁸ it is important to acknowledge that small changes in diet and exercise, which most weight loss programs advocate, may be more attainable than large ones. The Small Changes approach begins with the lifestyle habits people currently have and helps them move gradually toward a

Figure 6. A Patient's Guide to Using Your Pedometer^a

How many steps per day should I take? The current recommendation to meet public health guidelines is 10,000 steps per day. 12,000-15,000 steps per day may be more appropriate for weight loss and weight loss maintenance. Don't get discouraged if you currently take less than 10,000 steps. Any activity is better than none, and you can work slowly towards achieving this goal.

Increasing your steps: Try increasing your steps by 500 steps per day per week. For example, if you average 3000 steps per day, set a goal to increase to 3500 steps per day the next week and 4000 steps per day the week after that.

How do I wear my pedometer? Place your pedometer on the waistband of your clothing or belt. Place it close to the midline of your thigh rather than to the side by your hip bone. Make sure it is straight and not at an angle. Do not get the pedometer wet.

^aReprinted with permission from the Centers for Obesity Research and Education.¹⁹

Table 2. Categories of Activity Based on Average Steps per Day^a

Category	Steps per Day
Sedentary	< 5000
Low active	5000-7499
Somewhat active	7500-9999
Active	10,000-12,499
Highly active	≥ 12,500

^aBased on Hill and Wyatt.¹⁸

healthier eating plan complemented by more physical activity incorporated into their everyday lives.¹⁸

Some examples of small changes that people can incorporate into their daily lives are reading food labels, controlling portion size, eating more slowly, making healthy snack choices, learning to discern differences between stomach and psychological hunger, cutting down on fast food, keeping food/activity diaries, increasing physical activity such as walking, and minimizing intake of soft drinks with sugar.

Health care practitioners need a feasible method to introduce the Small Changes concept into the lives of their patients and then encourage them to integrate these changes into their physical activities on a daily basis. One such method involves the introduction and use of a pedometer or step counter to measure steps taken per day; the Patient's Guide¹⁹ shown in Figure 6 is a tool that can help patients with SMIs to initiate the Small Changes strategy.

After patients are made aware of how many steps they take on a daily basis, they can be encouraged to simply increase their walking per day in small, gradual increments, such as adding 2000 steps per day, which is an achievable goal and can improve physical activity levels (as shown in Table 2), even in people who are very sedentary.¹⁸

Solutions for Wellness

Another program achieving success in managing weight in people with SMIs is the "Solutions for Wellness" program (Table 3), which is available in 2 formats:

Table 3. Solutions for Wellness: Interventions for Higher-Functioning Patients^a

Wellness Factor	Patients Reporting Positive Changes (%)	Significant Reduction in Body Mass Index
Diet	91	p = .014
Exercise	85	p = .035
Sleep	93.8	
Stress management	92.9	

^aData from Hoffman et al.²⁰ The 6-month Solutions for Wellness Personalized Program focused on nutrition, exercise, stress management, and sleep improvement. A total of 7188 patients with serious mental illness were enrolled in the program, of which 83% were obese or overweight. Table shows results at 6-month endpoint, including finishers (N = 1422); 97% reported that they were confident they would be able to sustain positive change.

the “personalized” program and the “manualized” program. The Solutions for Wellness personalized program was evaluated in a study for managing weight gain in psychiatric patients; 7188 patients with mental illness were evaluated, 83% of which were obese or overweight.²⁰ The Solutions for Wellness personalized program focused on nutrition, exercise, stress management, and sleep improvement. At the 6-month endpoint, 1422 patients had finished the program with notable results. The results suggested that patients are able to learn healthy lifestyle habits and that they can continue to utilize these changes after completion of the program. Additionally, there is an easy-to-use manualized Solutions for Wellness program for use by health care practitioners. In a study in which 70 patients with schizophrenia or schizoaffective disorder participated in a 4-month intervention that involved a weekly 1-hour psychoeducational class using Solutions for Wellness, there was a positive effect on preventing antipsychotic-induced weight gain as compared to a group who received treatment as usual.²¹ The manual is available free of charge and can be downloaded at www.treatmentteam.com.

Partners for Excellence in Psychiatry

The Partners for Excellence in Psychiatry (PEP) Program incorporates strategies for the successful implementation of the Neuroscience Treatment Team Partner (NTTP) Program, which includes the Solutions for Wellness program, and also encourages practitioners to adopt a “Complete Wellness” (mind/body/spirit) approach to mental health treatment. This program delivers 2-day training on the Complete Wellness treatment approach and is offered in major cities across the nation. PEP training includes free recovery and wellness resources and state-of-the-art scientific lectures and tools from the NTTP Program. The PEP Program identifies 3 to 8 multidisciplinary team members from a behavioral health organization, including a CEO/COO/Executive Director, medical and nursing staff, a clinical coordinator, and direct care staff members to champion the program within their facility.²²

Scientific lectures address the increase in medical morbidity and mortality in people with SMI, encourage practitioners to increase the use of monitoring guidelines, address barriers to accessing primary care, focus on how to improve lifestyle behaviors in people with SMI, and address mental health and recovery. Mental health facilities are trained in the use of the NTTP Program as a way to offer “Complete Wellness” implementation at their organizations. The NTTP Program contains 3 modules: Team Solutions, Solutions for Wellness, and Abnormal Involuntary Movement Scale (AIMS). All 3 modules emphasize a therapeutic alliance between the health care provider and the individual. The Team Solutions module educates individuals with SMI and their families about medications, how to avoid a crisis, and how to best promote mental health recovery. Team Solutions also utilizes video, client workbooks, and an instructor manual.

As mentioned, the Solutions for Wellness module stresses healthy living and how to achieve a healthier lifestyle via exercise, nutrition, and behavior. Solutions for Wellness also emphasizes how to develop support systems to maintain a healthy lifestyle, as well as how to adopt low- and no-cost exercise options. The AIMS module is a program for health care professionals that demonstrates how to use a systematic rating tool to document motor symptoms (such as abnormal involuntary movement), which are sometimes associated with the long-term use of SGAs.²³ The PEP Program implements best-practice lectures and approaches, strives to enhance psychosocial interventions, utilizes organizational change and implementation planning, and provides free follow-up consultation and technical assistance to behavioral health care organizations so they can successfully implement this new paradigm of care at their facility. Mental health organizations can learn more or apply to attend this free program at www.partners4excellence.org.

THE PARADIGM SHIFT

In conclusion, increased morbidity and mortality in persons with SMI are due in large part to preventable medical conditions. An array of factors contributes to the development of obesity and other medical problems, such as diabetes and CVD. The utilization of a holistic approach that integrates both mental and physical health is critical in treating individuals with SMI. The most common causes of disability and death are influenced by behaviors such as smoking, poor nutrition, and lack of exercise. However, these behaviors can be changed. In addition, nonpharmacologic interventions focusing on lifestyle changes can help to prevent and manage psychotropic-associated weight gain. Furthermore, monitoring and treatment guidelines are underutilized in people with SMI; increasing use of these guidelines could help to detect and possibly prevent some cardiometabolic problems.

A variety of programs and approaches are now available that can promote and sustain healthier living among people with SMI, making lifestyle changes not only easier, but feasible for many people. For example, over 600 mental health care facilities from 47 states have joined the PEP/NTTP partnership utilizing a “Complete Wellness” approach in working with individuals with SMI. This partnership is beginning to create a paradigm shift in mental health treatment that is helping to bridge the gap between physical and mental health.

Disclosure of off-label usage: The author has determined that, to the best of her knowledge, no investigational information about pharmaceutical agents that is outside U.S. Food and Drug Administration–approved labeling has been presented in this article.

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