NREPP SAMHSA's National Registry of Evidence-based Programs and Practices

Literature Review
Serious Mental Illness

Serious mental illness (SMI) is a problem that affects the lives of millions of Americans, which results in billions of lost earnings per year (Insel, 2008). One of the leading causes of disability, SMI has been linked with much higher levels of overweight/obesity (Allison et al., 2009; Compton, Daumit, & Druss, 2006) and morbidity and mortality (Tiihonen et al., 2009). Although nationwide attention to this issue has increased over the past decade and efforts have been made by advocacy groups and other stakeholders to pass the Mental Health Parity Act, comprehensive legislative mental health reform in the United States is not yet on the horizon. Fortunately, studies suggest that an array of evidence-informed strategies can reduce symptom severity and promote recovery from SMI (Arbesman, 2011; Lloyd-Evans et al., 2014; Woltmann et al., 2012), even among high-risk populations (Coldwell & Bender, 2007).

What is SMI? The Substance Abuse and Mental Health Services Administration (SAMHSA), applying language from federal legislation, define SMI as a "mental, behavioral, or emotional disorder (excluding developmental and substance use disorders) of sufficient duration to meet diagnostic criteria specified within DSM-IV….that has [been diagnosed at any time in the past year and] resulted in serious functional impairment, which substantially interferes with or limits one or more major life activities." (SAMHSA, 2013, section 2). Commonly cited types of SMI are chronic forms of major depressive disorder, schizophrenia, posttraumatic stress disorder, bipolar disorder, panic disorder, obsessive compulsive disorder, and borderline personality disorder (National Alliance on Mental Illness, 2014).

Serious functional impairments in persons with SMI typically appear in the areas of self-care (eating well, abstaining from drugs and alcohol, maintaining personal hygiene), physical health and wellness, household management, instrumental living skills (managing money, negotiating transportation, taking medication as prescribed), social and family functioning, and vocational and educational functioning (Compton, Daumit, & Druss, 2006; Floersch, 2002; Hert et al., 2011; Scott & Happell, 2011).

Scope of the Problem

Recent data suggest that approximately 4 out of every 100 U.S. adults aged 18 or older (about 9.6 million) are estimated to have been diagnosed with an SMI in the past year, which is a rate comparable to findings from 2008 (SAMHSA, 2013, based on 2012 data).

SMI is more prevalent among some populations than among others. For example, the prevalence of SMI among adults on probation is 10.8 percent and 12.1 percent for adults on

Prepared in 2015 by Development Services Group, Inc., under contract no. HHSS 2832 0120 0037i/HHSS 2834 2002T, ref. no. 283–12–3702

parole (SAMHSA, 2013). Moreover, approximately 26 percent of homeless adults staying in shelters live with SMI (U.S. Department of Housing and Urban Development, 2011). In a study conducted by Fazel and Seewald (2012), psychotic disorders among prisoners were estimated at around 4 percent (3.6 percent for males and 3.9 for females); and major depressive disorders were estimated at around 10 to 15 percent (10.2 percent for males and 14.1 percent for females).

Certain social and demographic populations are also more likely to have SMI. For example, SMI appears to be slightly more common among middle-aged adults (ages 26 to 49) than among younger adults (ages 18 to 25) and older adults (ages 50 or older); past-year prevalence rates for these three age groups total 5.2, 4.1, and 3.0 percent, respectively. The prevalence of SMI has also been found to vary by gender and race/ethnicity (SAMHSA, 2013). For example, women are at greater risk for SMI than men (4.1 versus 3.2 percent), and American Indian/Alaska Natives are at greater risk for SMI than Hispanics, whites, blacks, and Asians (8.5 percent versus 4.4, 4.2, 3.4, and 2.0 percent, respectively).

Research suggests that SMI and factors related to socio-economic status (SES) are bi-directionally related. In other words, while SMI is more prevalent among adults from low-income or low-educated families (SAMHSA, 2013), poor employment and financial outcomes are also more prevalent among those with SMI (Goldberg et al., 2001; Mechanic, Bilder, & McAlpine, 2002). . A recent study of U.S. adults aged 18 and up, for example, suggests that unemployed, lower income, and less educated adults are more likely to have SMI than employed, higher income, and better educated adults (SAMHSA, 2013). More specifically, adults who are unemployed are at greater risk for SMI than those who are employed part-time or full-time (7.8 versus 3.9, or 2.7 percent, respectively). Adults who are below the poverty level are at greater risk than adults who are at 100–199 percent of the poverty level and at 200 percent or more of the poverty level (7.2 versus 5.2 and 3.0 percent, respectively). Finally, adults who have not completed high school are at greater risk for SMI than adults who have a high school degree, adults who have completed some college but who have not received a degree, and adults who have a college degree (4.8 versus 4.4, 4.4, and 3.1 percent, respectively).

Interventions for Persons with SMI

Generally, practitioners recommend a combination of medication, psychotherapy, lifestyle choices, and community supports to treat persons with SMI (SAMHSA, 2014a). Treatment programs that have been developed for persons with SMI can be categorized as psychotherapeutic or recovery-based. Psychotherapeutic models are goal-oriented and target specific skills and cognitions, whereas recovery-based models are process-oriented and use a holistic approach to bolster supportive relationships, social inclusion, and independent living (SAMHSA, 2014b).

Psychotherapeutic Models

- ***Cognitive–Behavioral Treatment (CBT)*** – a structured, lesson-based program that uses handouts, worksheets, and homework assignments to help clients gain insight into their thoughts and beliefs and restructure their cognitions (Mueser et al., 2008).

- ***Social Skills Training*** – a type of program that uses social learning strategies for teaching new skills, such as goal-setting, role-modeling, behavioral rehearsal, positive reinforcement, corrective feedback, and homework assignments (Kurtz & Mueser, 2008).
- ***Peer Support Model*** – a service-delivery model that brings two or more nonprofessionals with similar health problems together for mutual support or support from a peer. These interactions may occur in person, over the telephone, or through the Internet, so barriers such as cost and lack of transportation are minimized (Pfeiffer et al., 2011).
- ***Psychoeducational Model*** – a competence-based approach to service delivery, led by a professional, which combines psychotherapeutic and educational interventions to promote "health, collaboration, coping, and empowerment" (Lukens & McFarlane, 2006, p. 206).

Recovery-Based Models

- ***Assertive Community Treatment*** – an innovative case management model that includes a multidisciplinary team, low staff caseloads to allow for more intensive contact, the direct provision of community-based services, and 24-hour access to treatment team responders (Coldwell & Bender, 2007).
- ***Collaborative Care Model*** – a disease management strategy that involves patient self-management support, delivery system redesign, use of clinical information systems, provider decision support, linkage to community resources, and health care organization support (Woltmann, et. al., 2012).
- ***Full-Service Partnership –*** client-centered models that provide supported housing to increase residential stability and team-based services, with a focus on rehabilitation and recovery (Gilmer, Stefancic, Ettner, Manning, & Tsemberis, 2010).
- ***Supported Employment Model*** – a vocational rehabilitation model that places individuals in competitive employment in line with client preferences and provides ongoing support to the client and employer through the use of an employment consultant. The client also receives ongoing assessments of his or her work performance. Some programs combine this approach with supplemental social skills or cognitive skills training (Arbesman & Logsdon, 2011; Twamley, Jeste, & Lehman, 2003)

Outcome Evidence

Several meta-analyses have examined the impact of psychotherapeutic and recovery-based programs for persons with SMI. These studies suggest that, by and large, these programs have favorable impacts on symptom severity, personal and interpersonal health, and independent living.

Reducing Psychiatric Symptoms

Schizophrenia Symptoms. A meta-analysis of 22 randomized controlled trials (RCTs) of social skills training (SST) for schizophrenia (Kurtz, 2008) found that SST had a moderate effect on reducing negative schizophrenia symptoms (Standardized Mean Difference [SMD] =.40), with larger effect sizes for younger samples, and a small effect on reducing overall symptoms (SMD=.15). Effects on relapse, assessed across different time intervals in nine studies, were also small (SMD=.23). Effects of physical activity interventions are promising. One meta-analysis

found large effects on schizophrenia symptoms (SMD=1.0; Rosenbaum, Tiedemann, & Ward, 2014) and another found moderate-to-large effects (SMD for negative symptoms=-0.54; SMD for positive symptoms=-1.66; Pearsall, Smith, Pelosi, & Geddes, 2014).

Depressive Symptoms. Research suggests that collaborative care models, peer support interventions, and physical activity interventions can reduce symptoms of depression in adults with mental illness. A meta-analysis of 57 RCTs to assess the effects of collaborative care models found small effects for depression (SMD=0.31; Woltmann et al., 2012). Pfeiffer and colleagues (2011), in their meta-analysis of evaluations of peer support interventions (PSIs), found that PSIs were superior to usual care in reducing depressive symptoms (PSI versus usual care: SMD= -0.59) and equivalent to CBT (PSI versus CBT: SMD=0.10). Physical activity interventions (ranging from exercise programs and counseling to tai chi and physical yoga) were also found to reduce depressive symptoms, in a meta-analysis of 39 RCTs conducted with adults diagnosed with SMI (a large effect size of SMD=0.80; Rosenbaum et al. , 2014).

Overall Psychiatric Symptoms. Assertive Community Treatment-based rehabilitation for homeless individuals has been found to produce a 26 percent greater improvement in psychiatric symptom severity, compared with standard case management treatments (Coldwell & Bender, 2007). Exercise programs have also been found to have beneficial (although not statistically significant) effects on anxiety and depressive symptoms (SMD=−0.26; Pearsall et al., 2014), but peer support programs may not have such strong effects on anxiety and depressive symptoms (SMD=-0.10; Lloyd-Evans et al., 2014).

Promoting Personal and Interpersonal Health

Fitness. A meta-analysis of 39 RCTs to evaluate physical activity interventions (Rosenbaum et al., 2014) found small effects for body measurements (SMD = 0.24) and moderate effects for aerobic capacity (SMD = 0.63). Another meta-analysis by Pearsall and colleagues (2014) found (of exercise programs only) that exercise had very large effects on exercise activity (SMD=1.81), but small effects on body mass index (SMD = −0.24) and body weight (SMD = 0.13).

Quality of Life. Physical activity interventions (Rosenbaum et al., 2014) and collaborative care models (Woltmann et al., 2012) have been found to result in small and moderate effects on quality of life (SMD= 0.64 and SMD=0.20, respectively). Another meta-analysis (Pearsall et al., 2014) found that exercise programs improved physical and mental quality of life (physical domain: SMD = 0.45; mental domain: SMD = 0.65), although these effects were not found to be significant.

Social Functioning. Several systematic reviews and meta-analyses have assessed the effects of interventions on social functioning. Thus far, findings for collaborative care models and social skills training (SST) programs look promising (Gibson et al., 2011). In Woltmann et al.'s (2012) meta-analysis of collaborative care models, small effects were found for social role functioning (SMD=0.23); and in Kurtz et al.'s meta-analysis of SST models (2008), moderate effects were found on social and daily living skills (SMD=0.52) and community functioning (SMD=0.52). Interestingly, SST programs of shorter duration and less intensity produced a greater effect size than longer duration programs of greater intensity, and samples with younger participants experienced more gains in social and daily living skills than samples with older participants (Kurtz et al., 2008).

Promoting Independent Living

Instrumental Activities of Daily Living. Evaluations of Functional Adaptation Skills Training (FAST), which is a manualized cognitive–behavioral intervention for patients with schizophrenia and schizoaffective disorder, found that participants assigned to FAST have greater improvement in everyday living skills than participants assigned to a treatment-as-usual condition (Patterson et al., 2006).

Employment and Education. Studies of supported employment (SE) models have found large effects on employment. A systematic review by Bond (2008) found that 67 percent of study participants assigned to SE, combined with Individual Placement and Support models, worked over 20 hours per week, compared with only 23 percent of participants assigned to the control group.

Housing. A meta-analysis of Assertive Community Treatment (ACT) evaluations found that participants assigned to ACT demonstrated a 37 percent greater reduction in homelessness than participants assigned to standard case management (Coldwell & Bender, 2007).

NREPP Programs that Support Adults with SMI

The National Registry of Evidence-Based Programs and Practices (*NREPP*) summarizes evidence for over 25 programs designed to treat and support adults with SMI, which are included because they have been evaluated with at least one randomized controlled trial or quasi-experimental study that meets *NREPP's* minimum eligibility criteria. In the coming year, *NREPP* will employ a new study review protocol and initiate a re-review of these programs to rate evidence of their effectiveness.

Cognitive Behavioral Interventions

- ***Cognitive Behavioral Social Skills Training (CBSST)*** is a cognitive–behavioral rehabilitation intervention designed to help middle-aged and older outpatients with schizophrenia and other forms of SMI achieve their functioning goals related to living, learning, working, and socializing in their community of choice.
- ***Dialectical Behavior Therapy (DBT)*** is a cognitive–behavioral treatment approach with two key characteristics: a behavioral, problem-solving focus blended with acceptance-based strategies, and an emphasis on dialectical processes.
- ***Functional Adaptation Skills Training (FAST)*** is a cognitive–behavioral intervention for adult patients 40 years and older living in board-and-care facilities who have been diagnosed with schizophrenia or schizoaffective disorder.
- ***Mindfulness-Based Cognitive Therapy (MBCT)*** is a program for adults with recurrent major depressive disorder (as diagnosed by DSM-III-R or DSM-IV criteria). MBCT represents an integration of components from two interventions: Mindfulness-Based Stress Reduction, which is based on the core principle of "mindfulness" (i.e., a mental state whereby one attends to and purposefully manages one's awareness of what is happening in the moment), and cognitive–behavioral therapy for depression.
- ***Systems Training for Emotional Predictability and Problem Solving (STEPPS)*** is a manual-based group treatment for ambulatory adults diagnosed with borderline personality disorder (BPD). The program aims to improve BPD-related symptoms,

mood, impulsivity, and global functioning through a combination of cognitive–behavioral methods, psychoeducation, and skills training.

- ***The Coordinated Anxiety Learning and Management (CALM) Tools for Living Program*** aims to reduce anxiety, depression symptoms, or both, and improve the functional status of patients ages 18–75. The program, designed for use in primary care and other outpatient settings, is based on a collaborative care model and cognitive–behavioral therapy (CBT); however, the program was developed for use by clinicians with and without CBT expertise.

Interventions Focused on Trauma

- ***Cognitive Processing Therapy (CPT)*** is a cognitive–behavioral therapy for posttraumatic stress disorder (PTSD), which is used for older adolescent and adult clients with a PTSD diagnosis.
- ***Eye Movement Desensitization and Reprocessing (EMDR)*** is a one-on-one form of psychotherapy that is designed to reduce trauma-related stress, anxiety, and depression symptoms associated with posttraumatic stress disorder (PTSD) and to improve overall mental health functioning.
- ***Seeking Safety*** is a present-focused treatment for clients with a history of trauma and substance abuse. The treatment was designed for flexible use: group or individual format, male and female clients, and a variety of settings (e.g., outpatient, inpatient, residential).
- ***Trauma Affect Regulation: Guide for Education and Therapy (TARGET)*** is a strengths-based approach to education and therapy for survivors of physical, sexual, psychological, and emotional trauma. TARGET teaches a set of seven skills (summarized by the acronym FREEDOM--Focus, Recognize triggers, Emotion self-check, Evaluate thoughts, Define goals, Options, and Make a contribution) that can be used by trauma survivors to regulate extreme emotion states, manage intrusive trauma memories, promote self-efficacy, and achieve lasting recovery from trauma.
- ***The Trauma Recovery and Empowerment Model (TREM)*** is a fully manualized group-based intervention designed to facilitate trauma recovery among women with histories of exposure to sexual and physical abuse.

Other Interventions

- ***Acceptance and Commitment Therapy (ACT)*** is a contextually focused form of cognitive–behavioral psychotherapy that uses mindfulness and behavioral activation to increase clients' psychological flexibility—their ability to engage in values-based, positive behaviors while experiencing difficult thoughts, emotions, or sensations.
- ***Acceptance-Based Behavioral Therapy (ABBT)*** for generalized anxiety disorder (GAD) is a form of psychotherapy for adults who have a principal diagnosis of GAD. The treatment is designed to decrease symptoms of worry and stress, so clients no longer meet DSM-IV criteria for GAD or they experience a reduction in GAD symptoms and comorbid depression or mood-related symptoms.
- ***Assisted Outpatient Treatment (AOT)*** is the practice of delivering outpatient treatment under court order to adults with severe mental illness who are found by a

judge, in consideration of prior history, to be unlikely to adhere to prescribed treatment on a voluntary basis.

- ***Behavioral Day Treatment and Contingency-Managed Housing and Work Therapy*** is a manualized program for adults who are homeless and have co-occurring substance use and nonpsychotic mental disorders. The program, which is based on therapeutic goals management, helps participants to stop using substances and provides them with housing and work training.
- ***Cognitive Enhancement Therapy (CET)*** is a cognitive rehabilitation training program for adults with chronic or early-course schizophrenia or schizoaffective disorder (per DSM-III-R or DSM-IV criteria) who are stabilized and maintained on antipsychotic medication and not abusing substances.
- The ***Compeer Model*** is designed for use with adults (including veterans and their families), youths (including children with an incarcerated parent), and older adults who have been referred by a mental health professional and diagnosed with a serious mental illness (e.g., bipolar disorder, delusional disorder, depressive disorder).
- ***Dynamic Deconstructive Psychotherapy (DDP)*** is a 12- to 18-month, manual-driven treatment for adults with borderline personality disorder and other complex behavior problems, such as alcohol or drug dependence, self-harm, eating disorders, and recurrent suicide attempts.
- ***Housing First,*** a program developed by Pathways to Housing, Inc., is designed to end homelessness and support recovery for individuals who are homeless and have severe psychiatric disabilities and co-occurring substance use disorders.
- ***Life Goals Collaborative Care (LGCC)*** is an intervention for adults with chronic mental and physical health problems. LGCC is based on the Chronic Care Model, which identifies six areas of improvement necessary for health care systems to provide high-quality chronic disease care: 1) health system organizational support, 2) self-management support, 3) provider decision support, 4) delivery system redesign, 5) clinical information systems, and 6) access to community resources.
- ***Panic Control Treatment (PCT)*** is a manualized, individual cognitive–behavioral treatment for adults with panic disorder, with or without agoraphobia. The goal of the intervention is to help clients become panic-free by learning how to anticipate and respond to situations that trigger their panic attacks and managing the physical symptoms of panic using techniques such as controlled breathing.
- ***Psychoeducational Multifamily Groups (PMFG)*** is a treatment modality designed to help individuals with mental illness attain as rich and full participation in the usual life of the community as possible.
- ***Relationship-Based Care (RBC)*** is a mental health treatment model for individuals who have pronounced difficulty with engagement and sustained interpersonal contact. RBC was specifically developed for use with homeless adults who have been arrested and diverted from jail because of severe mental illness.
- ***Six Core Strategies to Prevent Conflict and Violence: Reducing the Use of Seclusion and Restraint (6CS)*** is a clinical model designed for use by institutions providing

mental health treatment to children and adults admitted to inpatient or residential settings.

- ***Team Solutions (TS) and Solutions for Wellness (SFW)*** are complementary psychoeducational interventions for adults with a serious mental illness. TS teaches life- and illness-management skills, whereas SFW focuses on physical health and wellness.
- ***Wellness Recovery Action Plan (WRAP)*** is a manualized group intervention for adults with mental illness. WRAP guides participants through the process of identifying and understanding their personal wellness resources ("wellness tools") and then helps them develop an individualized plan to use these resources on a daily basis to manage their mental illness.

Additional Resources

Substance Abuse and Mental Health Services Administration (SAMHSA) Resources

- Treatments for Mental Disorders. Available at http://www.samhsa.gov/treatment/mental-disorders
- Behavioral Health: Evidence-Based Treatment and Recovery Practices. Available for download at http://store.samhsa.gov/product/Behavioral-Health-Evidence-Based-Treatment-and-Recovery-Practices/SMA12-PHYDE061312

American Psychological Association (APA) Resources

- Resources and Improved Outcomes for People with Serious Mental Illness. Available at http://www.apa.org/practice/resources/grid/catalog.pdf
- The Proficiency in the Assessment and Treatment of Serious Mental Illness. Available at http://www.apa.org/practice/resources/treatment-mental.aspx

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