

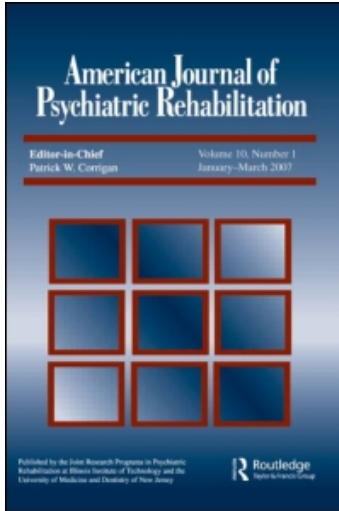
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### Psychosocial Rehabilitation in Older Adults with Serious Mental Illness: A Review of the Research Literature and Recommendations for Development of Rehabilitative Approaches

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# Psychosocial Rehabilitation in Older Adults with Serious Mental Illness: A Review of the Research Literature and Recommendations for Development of Rehabilitative Approaches

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The number of older adults with serious mental illness (SMI) is expected to increase dramatically in the coming decades. This group uses a disproportionate amount of mental health resources and is at high risk of institutionalization. There is an urgent need for effective psychosocial rehabilitation programs specifically designed to meet the special needs of this population. This article summarizes recent research in this area, including three new models of skills training. We also describe several other empirically supported approaches for the general population of people with SMI that may be tailored for use with older adults, including assertive community treatment, family and caregiver support, vocational rehabilitation, and medication adherence interventions. Finally, we consider new directions for research and service development to support the next generation of psychosocial interventions for the growing population of older adults with SMI.

*Keywords:* Older adults; Psychosocial rehabilitation; Schizophrenia; Skills training

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According to U.S. Census Bureau projections, the number of Americans aged 65 and older is expected to more than double (from 34 million in 1990 to 70 million in 2030) in the coming decades as postwar baby boomers begin to reach age 65 (U.S. Census Bureau, 2000). This increase is predicted to include a disproportionately greater growth in the number of older adults with serious mental illness (SMI) due to advances in medical and psychiatric treatments and improved standard of living (Cohen, 1995; Jeste et al., 1999). As increasing numbers of people with SMI are expected to continue to live in the community as they age, it will become imperative to provide effective psychosocial interventions that are tailored to address the unique needs of this population.

Problems in functioning among older adults with SMI are associated with increased use of intensive and expensive institution-based care and poor health outcomes. For example, functional deficits in older adults with schizophrenia are associated with both acute and long-term psychiatric hospitalization (Davidson et al., 1995; Mulsant et al., 1993). More severe impairments in self-care skills (e.g., eating and hygiene) and in community living skills (e.g., using the telephone, using transportation, caring for personal living space, and managing finances) are strongly associated with nursing home admission (Bartels et al., 1997a). Impaired social skills and low levels of social support also are associated with a greater likelihood of nursing home placement among aging individuals with SMI (Meeks et al., 1990). Finally, functional impairments due to comorbid physical and medical illnesses also increase the risk of placement in restrictive residential settings, especially nursing homes (Burns & Taube, 1990; Meeks et al., 1990).

In addition to the burden of increased Medicaid expenditures for the states, unnecessary or inappropriate nursing home placement for older adults with psychiatric disabilities has become an important civil rights issue under the recent *Olmstead Decision* by the U.S. Supreme Court (Bartels et al., 2003; Bartels & Van Citters, 2005). Under this interpretation of the Americans with Disabilities Act, the Supreme Court determined that it is a form of discrimination to institutionalize a person with disabilities if that individual can benefit from life in the community. This decision mandates that the states must provide adequate and appropriate accommodations for a wide range of individuals with disabilities, including older adults with mental disorders. The implementation of effective rehabilitation interventions and support services designed for this

high-risk population provides a critical response to this federal mandate to ensure community-based alternatives and programs.

The field of psychiatric rehabilitation grew out of a need to address the psychosocial impairment in individuals with SMI that often remains despite optimal psychopharmacological treatment and that is associated with a greater risk of institutionalization. Rehabilitative approaches, such as skills training, are based on the premise that systematic teaching of behavioral components of important life skills can reduce impairments in social and role functioning (Bellack et al., 2004; Dilk & Bond, 1996; Hayes et al., 1995). Psychiatric rehabilitation is most likely to effect major changes in functioning when it is embedded into an ongoing treatment or community support program (Bellack & Mueser, 1993; Hayes et al., 1995). A considerable body of literature now exists describing psychosocial interventions designed to reduce disability and maximize environmental adaptation for individuals with SMI (e.g., Bustillo et al., 2001; Corrigan et al., 2008; Huxley et al., 2000). These interventions almost exclusively have been studied in adults aged 20 to 50.

Despite the literature supporting the benefits of psychiatric rehabilitation and skills training in younger adults, the need for effective interventions that enhance functioning in older adults with SMI has only recently been recognized (Carmichael et al., 1998). Older adults with SMI residing in the community have greater social skill deficits compared with older persons with other, less severe, psychiatric disorders, including greater impairments in accepting and initiating contact, communicating effectively, engaging in social activities, and asking for help (Bartels et al., 1997b). As mentioned, deficits in social skills and independent living skills are strongly associated with placement in nursing homes (Bartels et al., 1997b; Meeks et al., 1990) and long-term care in psychiatric hospitals (Davidson et al., 1995; Mulsant et al., 1993). Interventions that address the unique constellation of needs and problems faced by older adults therefore are urgently needed to avert costly and restrictive long-term care.

The knowledge base supporting the potential benefit of psychosocial interventions for older adults has developed gradually over the past 20 years. The first generation of models began with demonstration projects by the National Institute of Mental Health under the Community Support Program in 1977 to help persons with long-term SMI remain in the community (Turner & TenHoor, 1978).

The Community Support Program promoted a range of services addressing psychosocial needs including outreach, case management, family and community support, mental health treatment, and rehabilitation services. In 1986, efforts were expanded to include older adults with serious long-term mental illness and 16 state demonstration projects were funded (Schafft & Randolph, 1994).

Although evaluative components of these demonstration projects consisted of qualitative or uncontrolled designs, outcomes from these programs suggested that community-based programs have the potential to improve psychosocial outcomes for older adults. Positive outcomes included improved self-care skills, enhanced self-esteem, greater socialization, increased residential stability, decreased depression, delay of nursing home placement, and lower mental health service costs. The most common approaches used in these projects were skills training, outreach, and case management (Schafft & Randolph, 1994).

To identify and review psychosocial treatment models that have been applied to older adults with SMI, we searched the Medline, PsychInfo, and Cinahl databases for English language articles indexed through December 2005 using the keywords: serious mental illness or schizophrenia, psychosocial, and geriatric or late-life or elderly. This search strategy identified six published studies, including three randomized controlled trials, two quasiexperimental studies, and one uncontrolled prospective cohort study. In addition, we reviewed the NIMH CRISP website using the same keywords and contacted investigators with expertise in this field to identify unpublished studies and interventions currently under evaluation.

## EMERGING FINDINGS ON SECOND GENERATION PSYCHOSOCIAL INTERVENTIONS

Psychosocial interventions that enhance social skills and independent living skills hold promise for helping aging persons with SMI to live independently and to decrease use of intensive institution-based care. The success of skills training as an effective intervention for young adults with SMI has led to the development of rehabilitation models specifically adapted and designed for older adults. In addition to skills training, several other psychosocial

interventions hold particular promise for older adults with SMI. These include case management and assertive community treatment, family and caregiver interventions, and vocational rehabilitation.

## SKILLS TRAINING INTERVENTIONS

Three promising skills training interventions for older adults with SMI have been developed, systematically evaluated, and described in the research literature. These include a social skills training program for middle-aged and older adults with chronic psychotic disorders (Patterson et al., 2003); a combined skills training and cognitive behavioral treatment program for older adults with schizophrenia (Granholtm et al., 2005); and a combined skills training and health management intervention for community-dwelling older adults with SMI (Bartels et al., 2004). Each represents a manualized intervention with prospective outcome data reported in controlled pilot studies. These models are summarized in Table 1.

### Functional Adaptation Skills Training (FAST)

The FAST program, designed by Patterson and colleagues (2003), is a 24-week modular skills training intervention based on social learning theory to improve community functioning in middle-aged and older adults with persistent psychotic disorders. The FAST program is delivered in group sessions in community settings (primarily board-and-care homes) by trained group leaders who teach component skills in the areas of community functioning (e.g., handling finances, making and keeping a schedule, using public transportation), communication (e.g., social perception, having conversations, making telephone calls), and illness management (e.g., medication management, detecting warning signs of relapse) using modeling, rehearsal of skills, and positive reinforcement.

Thirty-two board-and-care residents in four sites in the greater San Diego area participated in a pilot study that randomly assigned two sites to receive the FAST program and two sites to receive care as usual. Ten participants were selected from each of the four board-and-care facilities to participate in this study. Individuals with dementia, serious suicide risk, inability to complete the assessment battery, or participation in another research study were

TABLE 1. Summary of tested psychosocial models for older adults with serious mental illness

	FAST/PEDAL	CBSST	ST + HM
	Principle Therapeutic Components of Models		
Rehabilitative components	24-week program Targets independent living, communication, and illness self-management skills Skills training approach None	12-week program Targets illness self-management Skills training and cognitive behavioral approach None	48-week program Targets communication skills and medication self-management Skills training approach Health care case management services provided by nurse case managers
Case management component	None	None	None
	Age-Specific Modifications to Models		
Strategies for addressing medical comorbidity	Training in medication self-management	None	Facilitation of access to preventive, routine, acute, and chronic health care by a nurse case manager Training in medication self-management Assistance from nurse case manager with accessing community resources
Strategies for addressing functional impairment	Training in independent living skills (e.g., using public transportation, managing money) Delivered in board-and-care homes	None	Delivered in assisted living facilities or assistance with transportation to appointments
Accommodations for transportation needs	Delivered in board-and-care homes	Transportation assistance provided	Delivered in assisted living facilities or assistance with transportation to appointments

Accommodations for cognitive impairment	Pace of learning slowed Curriculum shortened More frequent review and checking on understanding Strategies to facilitate recall Materials are printed in large typeface	Pace of learning slowed Curriculum shortened More frequent review and checking on understanding Strategies to facilitate recall None	Pace of learning slowed Curriculum shortened More frequent review and checking on understanding Assessed for impairments in hearing and vision, and assistive devices acquired
Accommodations for sensory impairments			
	Outcome Data from Controlled Studies		
Study design	24 week randomized, controlled pilot study with 32 participants (16 FAST/16 usual care), mean ages of 47.9 (FAST) and 51.7 (usual care)	Randomized, controlled trial with 76 participants (37 CBSST/39 TAU), mean ages of 54.5 (CBSST) and 53.1 (TAU) for 12 weeks	52-week controlled pilot study with 24 participants (12 ST + HM/12 HM), mean ages of 65 (ST + HM) and 67.9 (HM)
Study outcomes	Greater improvement on a performance-based measure of independent living skills (Patterson et al., 2005; Patterson et al., 2003)	Greater improvement in social functioning, cognitive insight, and performance on a comprehensive module test (Granholm et al., 2005; Granholm et al., 2002; McQuaid et al., 2000)	Greater improvement in social and health functioning; receipt of preventive health care services; identification of previously undetected medical problems (Bartels et al., 2004)



excluded from the study. Furthermore, eight clients dropped out of the study following the baseline assessment. Participants ranged in age from 42 to 69 years; 78% were Caucasian, 31% were female. Diagnoses included 53% schizophrenia, 22% schizoaffective disorder, and 25% mood disorders with psychotic features. Almost all clients (31 of 32) were taking antipsychotic medication and the average length of illness was 21 years.

The primary outcome measure for this pilot study was a performance-based measure of community living skills developed for older adults with SMI, the UCSD Performance-Based Skills Assessment (UPSA, Patterson et al., 2001). The UPSA involves assessment of five skill areas (money management, communication, using public transportation, planning, and shopping) using simulated tasks. Study participants in the FAST group ( $n = 16$ , mean age = 47.9) demonstrated significantly greater improvement in performance on the UPSA compared with the care-as-usual group ( $n = 16$ , mean age = 51.7) both at posttreatment and 3-month follow-up (Patterson et al., 2003). Secondary outcome measures included the PANSS positive, negative, and general psychopathology scales, the Hamilton Depression Scale, and the Quality of Well-Being Scale. The FAST group improved significantly more than the care-as-usual group on the PANSS negative syndrome scale but did not differ on any other outcome measure.

Patterson and colleagues (2005) recently tested a version of the FAST intervention adapted for use with Latinos with schizophrenia or schizoaffective disorder age 40 or older entitled Programa de Entrenamiento para el Desarrollo de Aptitudes para Latinos (PEDAL [Program for Training and Development of Skills in Latinos]). The basic structure and content of FAST remained the same; however, the authors conducted focus groups with Mexican-American clients, family members and providers in the community to inform cultural content adaptations and alterations in scripts and role-play scenarios for PEDAL. The manual also was translated into Spanish and back-translated into English to correct problematic text and was delivered by Spanish-speaking instructors.

Twenty-nine outpatients from three mental health clinics in the greater San Diego area participated in the study, which randomly assigned two sites to receive the PEDAL program and one site to receive a time-equivalent support group. Twenty-one participants were recruited to receive PEDAL and eight were recruited to the

support group condition. Individuals with dementia, serious suicide risk, inability to complete the battery, or participation in another psychosocial intervention or research study were excluded from the study. The mean age of participants in PEDAL was 46.8 (sd = 7.3), which was significantly younger than the mean age of the support group participants, which was 57.3 (sd = 9.3). All participants were of Mexican decent and 52% were female. Diagnoses included 55% schizophrenia and 45% schizoaffective disorder.

The primary outcome measure for this pilot study was performance on the afore-mentioned UPSA (Patterson et al., 2001), that was translated into Spanish. Study participants in the PEDAL group demonstrated significantly greater improvement in performance on the UPSA compared with the support group at posttreatment, but not at 6-month or 12-month follow-up (Patterson et al., 2005). Results for performance-based measures of medication management and social skills included significantly more improvement for the PEDAL group in medication management skill at 12-month follow-up and no significant differences in social skills between the groups. Secondary outcome measures included the PANSS and the Quality of Well-Being Scale. The only between-group difference on these measures was worse PANSS scores for the support group at 12-month follow-up.

Specific strengths of the evaluations of the FAST and PEDAL programs include theory-based interventions designed for middle-aged and older adults with psychotic disorders, manualized interventions, and longitudinal, randomized designs. However, the studies are limited by the potential cohort effects due to randomization at the site level, lack of inclusion of natural supports such as family members or board-and-care staff, and the reliance on performance-based measures of functioning, which only assess if the participant is able to demonstrate the skill in a controlled test setting, but do not evaluate whether these skills translate into improved functioning in the community. Furthermore, generalizability of the FAST intervention may be limited given that most participants were middle-aged men and all were living in board-and-care homes. By contrast, almost all participants in the PEDAL study were living with family members.

Patterson et al. (2005) note that the PEDAL study is limited because they did not take into account differences in level of family support or level of acculturation in designing the intervention. They note, for example, that less acculturated individuals

with less family support may require more intensive instruction and help with using the skills. As with the other preliminary examinations of skills training interventions for older adults with psychotic illnesses, these studies also are limited by lack of intent-to-treat analyses and adjustments for severity.

### Cognitive-Behavioral Social Skills Training (CBSST)

McQuaid et al. (2000), Granholm, McQuaid et al. (2002), and Granholm et al. (2005) describe results of an integrated treatment program for older adults with schizophrenia that combines cognitive behavioral therapy (CBT) and social skills training (SST). The modular CBSST program provides group training in cognitive restructuring and illness self-management skills. Cognitive behavioral strategies are used throughout the program to challenge convictions regarding delusional beliefs and to explore resistance to treatment recommendations, medication nonadherence, and homework noncompliance. The first module orients participants to basic thought-challenging skills that encourage them to “stop and think” before acting. The second module teaches participants about identifying early warning signs of relapse and eliciting support from others when warning signs appear. The third module uses a problem solving approach to teach skills for coping with persistent symptoms of mental illness. Each of the three modules lasts 4 weeks, resulting in a 12-week intervention.

Nine individuals over age 50 participated in a pilot study of CBSST aimed at assessing the feasibility and acceptability of the intervention (McQuaid et al., 2000). Over 75% of the participants were male and 67% were Caucasian. The pilot study lasted 11 weeks, with the final two classes collapsed into one session. Attendance was quite good, with six of the nine participants attending 10–11 sessions, and one each attending 8 sessions, 5 sessions, and 3 sessions. Two of the nine participants dropped out of the program. Six participants completed at least 80% of their homework assignments and two-thirds met their personal goals established at the outset of treatment. This pilot study established the feasibility of engaging older adults with schizophrenia in the group-based psychosocial program and actively involving them in activities both in and out of the group setting. In addition, participants reported that many components of the program were helpful. Statistical analyses were not performed due to the small sample size

and uncertain reliability of the assessment measures (McQuaid et al., 2000).

A subsequent pilot study of the CBSST intervention randomly assigned 15 middle and older aged adults to receive 12 weeks of regular pharmacotherapy (RP;  $n = 7$ ) or regular pharmacotherapy plus CBSST (RP + CBSST;  $n = 8$ ) (Granholm et al., 2002). Two psychologists delivered CBSST in 90-min group sessions. Participants were older (mean age = 56.3,  $sd = 7.7$ ), community-dwelling individuals with a relatively early onset of schizophrenia (mean duration of illness = 34.3 years,  $sd = 7.9$ ). Most participants were Caucasian (80%), male (87%), and had never been married (71.4%) (Granholm et al., 2002).

Most participants (75%) attended all 12 treatment sessions and most (75%) completed 80% of homework assignments. The primary outcome measures for this pilot study were symptom assessment scales, including the Brief Psychiatric Rating Scale (BPRS), the Scale for the Assessment of Positive Symptoms (SAPS), the Scale for the Assessment of Negative Symptoms (SANS), and the Hamilton Depression Scale (Ham-D). Positive findings from this study included greater reductions in positive and depressive symptoms for the RP + CBSST group as compared with the RP group, based on effect size calculations. Within-group effect sizes showed greater improvement in the RP + CBSST group as compared with the RP group on the BPRS ( $d = .85$  vs.  $d = .26$ ), the SAPS ( $d = .56$  vs.  $d = .14$ ), and the Ham-D ( $d = .93$  vs.  $d = .39$ ). In contrast, the RP group had greater improvement of negative symptoms as compared with the RP + CBSST ( $d = .64$  vs.  $d = .13$ ).

The authors concluded that RP + CBSST improved symptom severity, especially depressive symptoms. However, these data were limited due to the small sample size and reliance on effect size calculations rather than between-group comparisons. Also, functional outcomes were not reported in either pilot study of the CBSST intervention.

Results of a randomized controlled trial of CBSST with 76 outpatients with schizophrenia or schizoaffective disorder ranging in age from 42–74 years old were reported recently (Granholm et al., 2005). Participants were randomly assigned to CBSST or treatment as usual (TAU) and were assessed at midtreatment (3 months) and posttreatment (6 months). The authors reported significant improvements at posttreatment in the CBSST group compared with the TAU group in social functioning, cognitive

insight (insight about beliefs), and performance on a comprehensive module test. But in spite of the effect sizes obtained in the pilot study, there were no improvements for either group in symptoms, hospitalizations, or living skills. The positive effect on cognitive insight is important considering the focus of the intervention on cognitive restructuring, but the implications for functioning are not clear. The authors found that CBSST was associated with improvement on the leisure and transportation subscales of the Independent Living Skills Survey (ILSS: Wallace et al., 2000) and suggested that these results may reflect improvement in social functioning, although a direct measure of social functioning was not administered.

Strengths of this study include the high level of engagement in CBSST (only four participants were not engaged), the randomized design, the manualized intervention, the positive impact on cognitive insight and some of the ILSS subscales, and the use of intent-to-treat analyses. However, the study is limited by the lack of longitudinal follow-up, relatively moderate sample size, and lack of involvement of natural supports such as family members or paid care providers.

### Skills Training and Health Management (ST + HM)

The ST + HM intervention was developed for older adults with SMI (primarily schizophrenia-spectrum disorders and bipolar disorder) with the aim of enhancing independent functioning and health care outcomes (Bartels et al., 2004). The ST + HM intervention included two different but overlapping components to enhance functioning and health care management. ST consisted of weekly skills training classes in basic conversation skills and medication self-management over 12 months. HM involved promotion of preventive health care and identification and monitoring of acute and chronic medical problems. Specific HM tasks included ensuring that participants have an identified primary care physician; facilitating receipt of preventive health care services such as eye and dental exams, mammography, and colorectal cancer screening; accompanying individuals to medical appointments; and teaching strategies for interacting with doctors. The rationale for linking skills training and health management was that both are needed to optimize independent functioning and health outcomes to maintain community tenure.

A pilot study of the one-year ST + HM intervention included 24 individuals over age 60 with SMI, including 16 with schizophrenia or schizoaffective disorder (Bartels et al., 2004). All individuals resided in the community and were Caucasian, 71% of participants were female, and 13% were married. On average, clients were 66 years old and had four or more medical illnesses. All individuals were offered the ST + HM intervention. Half the sample received ST + HM ( $n = 12$ ) and half chose to receive only HM ( $n = 12$ ). Fully 75% of the ST + HM group attended 40 or more of the 50 sessions offered over the one-year program.

Two registered nurses served as nurse case managers and delivered both the ST and HM components of the intervention. Functional outcomes for the ST intervention were evaluated comparing within group and between group ratings of community living skills using the ILSS (Wallace et al., 2000) and social behavior using the Social Behavior Schedule (Wykes & Sturt, 1986) at baseline and posttreatment (one year). Pre-post outcomes for the HM intervention also were assessed for the total group of 24 persons using within-group comparisons of preventive health care use for the year prior to involvement in the program and posttreatment. A longer follow-up period was used to assess the HM intervention to allow an adequate time frame to assess changes in preventive health care use.

Individuals who received the ST + HM intervention demonstrated greater improvement in community living skills over one year compared with individuals who received only HM. Medium to large effect sizes were obtained for individuals who received ST compared with HM only in several specific skill areas including self-care (hygiene:  $d = .53$ ; appearance:  $d = .60$ ), care of possessions ( $d = .84$ ), food preparation ( $d = .64$ ), and health management skills ( $d = .45$ ). Compared with those who received HM alone, older adults receiving ST also demonstrated significant improvement in social behavior ( $d = -.78$ ) and functioning ( $d = -.59$ ). No differences were noted between baseline and one-year follow-up in symptoms on the BPRS, the SANS, the Geriatric Depression Scale, or the mini-mental state exam (Bartels et al., 2004).

Positive findings from the HM component, which all participants received, included identification of several previously undetected medical conditions in approximately one-third of the sample and improvement in the receipt of preventive health care services.

In addition, the nurse case managers played a key role in assuring timely care for acute medical conditions. Finally, at 2-year follow-up, all 24 individuals (100%) had an assigned primary care physician and 100% had at least one physical examination (Bartels et al., 2004). Using nurses to provide both the ST and HM components of treatment in the pilot study provided unique opportunities to prompt persons to use appropriate skills during naturalistic interactions with physicians and other health providers.

The authors concluded that ST resulted in improved social and community functioning and that HM led to the identification of new medical illnesses and improved use of preventive health care. Although ST + HM was well described, resulted in positive findings, and focused on older individuals (over age 60), outcomes were not examined using an intent-to-treat analysis, participants were not randomly assigned to treatment groups, and natural supports such as family or paid care givers were not included in the intervention. These factors, combined with positive preliminary findings, led to a more structured evaluation of the ST + HM model.

Based on findings from the ST + HM pilot study, a larger, randomized, controlled study of the Helping Older People Experience Success (HOPES) program is ongoing currently (NIMH R01 MH62324: "Rehabilitation and Health Care for Elderly with SMI," Bartels, Principal Investigator). This study is evaluating the effects of the two-year HOPES intervention in 183 adults with SMI age 50 and older receiving mental health services in several inner-city Boston clinics and a community mental health center in New Hampshire. Social and independent living skills, health behaviors, and social, community, cognitive, and health functioning are evaluated at baseline and at 12-, 24-, and 36-month follow-up (Pratt, Bartels, Mueser, & Forster, 2008, this issue). Service use and cost also are monitored at 6-month intervals.

Development of the HOPES program involved an expansion of the skills training curriculum and manualization of the nursing intervention delivered in the pilot study of the ST + HM model. The HOPES skills training program includes age-specific adaptations of established teaching techniques used in other standardized skills training packages and teaches skills identified elsewhere as critical building blocks for successful interpersonal functioning (Bellack et al., 2004; Liberman et al., 1993; Liberman et al., 1989). Community trips and monthly meetings with family members or

other key individuals providing support facilitate generalization of skills to natural settings.

The skills training curriculum is organized into seven modules, each of which may stand alone as a distinct intervention. The skill areas covered in the modules include healthy living, making and keeping friends, making the most of doctor visits, communicating effectively, making the most of leisure time, using medications effectively, and living independently in the community. Choice of these skill areas is consistent with results of a recent survey of older adults with SMI in which at least half the respondents identified improving physical health, communicating more effectively, and having more friends as high priorities (Auslander & Jeste, 2002). During the first 12 months of HOPES, rehabilitation specialists provide 50 skills training classes in weekly sessions offered either at the mental health center or the local senior citizens center. The classes are accompanied by biweekly community trips to practice skills in natural settings. One review session and one community trip are offered each month during the second year of HOPES to consolidate skills. The HM component of the HOPES program, which is provided by nurses in monthly meetings with participants, is similar to the model tested in the pilot study. A major strength of this intervention is the integration of skills training and management of health care, and the inclusion of natural supports, such as family members and paid care providers.

## OTHER PROMISING PSYCHOSOCIAL INTERVENTIONS

Psychosocial interventions that may effectively address the needs of older adults with SMI include case management and assertive community treatment, family and caregiver interventions, and vocational rehabilitation. These models have been developed for application with young adults; yet modified versions are likely to benefit the growing numbers of older adults with SMI.

### Case Management and Assertive Community Treatment

Given their emphasis on providing services in home and community-based settings, attention to supporting self-care and living skills, and low client to staff ratios, the intensive case management (ICM) and assertive community treatment (ACT) approaches are



especially well suited to the complex needs of older persons with SMI. Controlled research on younger populations demonstrates that ICM and ACT reduce relapse rates and hospitalizations and stabilize housing in individuals with SMI (Bustillo et al., 2001; Marshall et al., 2005; Mueser et al., 1998). A recent review of community-based treatments for individuals with schizophrenia and SMI found 6 of 16 ACT studies included individuals age 50 or older (Mohamed et al., 2003). Although outcomes were not analyzed by age group, five of these studies had favorable results and one showed mixed results. A similar review of case management studies indicated that 8 of 20 studies included persons age 50 and older; 4 studies showed positive results, 2 showed mixed results, and 2 showed no advantage of case management services (Mohamed et al., 2003).

Finally, anecdotal and observational studies of case management models for older adults suggest similarly favorable outcomes. For example, a naturalistic study of older adults who were moved from a state psychiatric hospital to their own apartments found that assignment to an ACT team produced a 98% reduction in hospital days and high rates of satisfaction among family members and consumers (Blackmon, 1990).

## Family and Caregiver Interventions

Effective mental health services for older adults with SMI require direct enhancement of social supports (Meeks et al., 1990). When combined with effective pharmacotherapy, family therapy has produced symptomatic improvement, better social and vocational functioning, and reduced relapse rates for younger adults with SMI (Baucom et al., 1998; Bustillo et al., 2001; Huxley et al., 2000). Older adults with SMI who have less family support are at particularly high risk for placement in long-term care settings (Meeks et al., 1990). This points to the importance of family interventions to help maintain supportive social networks that may avert or delay institutionalization. Many older adults with SMI maintain close contact with family members, especially their siblings and adult children, who could be included in treatment on a more regular basis (Semple et al., 1997). For individuals who do not have involved relatives, indigenous community supports such as residential care providers in assisted living settings may be enlisted to provide assistance (Bartels et al., 1997b; Meeks & Murrell,

1997). Because staff and caregivers in residential settings often have little mental health training and may not know how to respond effectively to psychotic symptoms or disturbed behaviors, it may be helpful to provide them with psychoeducation about the use of behavioral interventions for older persons with mental disorders, which has been shown to reduce stress for both patients and caregivers (Tariot, 1996).

## Vocational Rehabilitation

Within the field of treatment for SMI there has long been a belief that work is “good therapy” (Anthony & Blanch, 1987; Beard et al., 1982; Black, 1988; Harding et al., 1987; Strauss et al., 1988). Supported employment programs, specifically designed to help people with SMI find and maintain competitive jobs, are an important component of rehabilitative programs for younger people with SMI. Positive outcomes of these programs include increased rates of competitive employment (Bond 2004), greater earnings, and more hours worked per month (Crowther et al., 2005). A substantial body of evidence also documents the clinical and subjective benefits of work for persons with SMI (Arns & Linney, 1993; Bell et al., 1996; Bell et al., 1993; Bond et al., 2001; Clark et al., 1998; Fabian & Wiedefeld, 1989; Fabian, 1992; Mueser et al., 1997), including decreased self-perceptions of social stigma among employed than nonemployed persons with SMI (Link et al., 1987; Link et al., 1992). The benefits of work may be similar for older people with SMI.

Substantial numbers of older adults who do not have mental illness continue to work after age 60, and it is expected that growing numbers will continue part-time or full-time employment after age 65. The success of vocational rehabilitation for younger people with SMI suggests that a similar approach might be utilized with older adults. A recent study by Bell and colleagues (2005) compared the clinical and vocational benefits of a work rehabilitation program in 41 participants age 50 or older (mean age = 53.3, *sd* = 2.5) and 104 participants younger than age 50 (mean age = 38.9, *sd* = 6.6). Results suggested similar therapeutic value of work activities for the older and younger age groups in terms of reduced symptoms and improved quality of life. In spite of greater neurocognitive compromise for the older group, vocational outcomes (work performance and hours worked) also were similar to the younger

group. Limitations of this study include inability to assign causality to clinical improvements due to lack of a no-work control group, limited age range of the older group (age 50–58), low rate of completion of the 26-week work rehabilitation program in the older and younger groups (56.1% and 52.7%, respectively), and reliance on sheltered work as opposed to competitive employment.

A pilot study designed to compare the effectiveness of 12 months of supported employment with 12 months of traditional vocational rehabilitation (primarily vocational training and counseling) in outpatients who are age 45 or older and have either schizophrenia or schizoaffective disorder (Twamley et al., 2008, 76–89) is underway. Findings from this study will help determine whether supported employment as designed for younger people with SMI is similarly effective for older individuals. However, research is needed that evaluates potential adaptations of vocational rehabilitation technologies that may be needed for the subgroup of older adults with SMI who desire competitive employment. For example, many older people may prefer volunteer work or jobs with flexible hours and schedules.

Many older adults no longer have aspirations to work but instead seek involvement in civic, volunteer, religious, social, or other community activities. Remaining active in meaningful activities is commonly cited by older adults as an important element of successful aging. For example, a needs assessment of older adults with SMI indicated greater interest in participating in more leisure activities (a high priority for 44% of survey respondents) than in obtaining a job (a high priority for 29% of survey respondents) (Auslander & Jeste, 2002). Participation in integrated settings in which civic or volunteer activities take place, together with continued follow-along support, hold the promise of improved outcomes in leisure, recreational, and other meaningful activities for this age group.

## Medication Adherence Interventions

Medication nonadherence is common among individuals with schizophrenia (Boczkowski et al., 1985; Corrigan et al., 1990; Young et al., 1986) and is associated with poor clinical outcomes including increased rates of relapse, rehospitalization, and treatment failure. Much of the research on medication nonadherence in schizophrenia has focused on relatively young adults. The only published studies

specifically examining nonadherence in older adults with schizophrenia examined prescription refill records for middle-aged and older patients receiving care at a VA clinic. Results suggested that 46–50% of prescribed medications are not taken. A variety of interventions have been developed to address medication nonadherence in younger adults with schizophrenia (e.g., Boczkowski et al., 1985; Cramer & Rosenheck, 1999; Kemp et al., 1996) and in medically ill older adults (e.g., Murdaugh, 1998; Rich et al., 1996; Winland-Brown & Valiante, 2000). We are unaware of any published reports describing studies of adherence interventions tailored for older adults with schizophrenia, despite factors that may make adherence even more challenging for older people including polypharmacy for physical health problems, cognitive decline, mobility limitations, and deficits in vision and hearing.

However, two evaluations of medication adherence interventions for older people are underway currently. One of the interventions, Medication Adherence Training (MAT), targets adherence to antipsychotics in individuals aged 45 and older with schizophrenia or schizoaffective disorder. Participants in an ongoing evaluation are randomly assigned to receive 12 weeks of either supportive treatment or MAT, which includes psychoeducation on antipsychotics, motivational interviewing, and skills training in medication management (such as reading prescription labels and using a pill organizer) (Lacro, 2005). The other intervention, Using Medications Effectively, is a multimodal adherence intervention that includes psychoeducation (on five classes of psychotropic medications and drugs for common medical problems), motivational interviewing, behavioral tailoring, instruction on adherence technologies (including electronic devices), and skills training on negotiating medication issues with doctors to promote medication adherence in individuals with SMI aged 50 and older (Pratt et al., 2005).

The effect on adherence of this 8-week module was evaluated in 72 individuals who were participants in a multisite RCT of the HOPES intervention, with 37 persons receiving the module in weekly group sessions and 35 persons in the usual care comparison. To our knowledge, this is the first study in individuals with SMI in which adherence to all prescribed medications was measured using pill counts. A trained research interviewer visited the homes of all 72 participants three times over five months to count all medications. Preliminary findings from this evaluation suggest

that older people with SMI take, on average, only 60% of their prescribed medications, with no difference between adherence to psychotropic and nonpsychotropic medications (Pratt et al., 2006). This finding highlights the need to develop adherence interventions for older people.

## AGE-SPECIFIC MODIFICATIONS TO PSYCHOSOCIAL INTERVENTIONS

Many of the psychosocial interventions used with younger adults with SMI, including assertive community treatment, skills training, family therapy, and vocational rehabilitation, could readily be used with older adults. However, differences in the nature and constellation of impairments in older people with SMI suggest the need for attention to age-specific modifications in these treatment approaches.

### Limitations in Mobility and Transportation Needs

Older adults are especially hard to engage in services and are less likely to seek or use office-based specialty mental health due to difficulties with physical mobility (Moak, 1996), impaired transportation skills (Bartels et al., 1997b), and lack of transportation resources. Providing rides to the clinic or offering mental health services in the community whenever possible would make them maximally accessible and effective (George, 1992). All three of the recently developed manualized skills training interventions mentioned in this article address this by providing morning and afternoon group meetings on the same day, thereby reducing the number of required weekly clinic visits compared with traditional twice weekly skills training sessions often provided to younger clients. The FAST and ST+HM programs also addressed the difficulty in delivering traditional office-based services to older adults by providing group sessions in community settings where the participants reside (e.g., board-and-care homes, assisted living facilities). Transportation assistance was offered to participants in the CBSST program who needed help getting to the clinic.

### Cognitive Impairment

Cognitive functioning in older adults with SMI is related to self-care and community-living skills (Bartels et al., 1997a;

Harvey et al., 1998) and may be critical for maintaining community tenure (Mosher-Ashley, 1989). Whereas the cognitive impairment associated with schizophrenia in younger adults is relatively stable or may even improve slightly over time with the help of novel antipsychotic medication, variability in cognitive impairment is somewhat greater among older adults (Harvey, 2001). At least some older people experience worsening in cognitive functioning in old age, perhaps as a function of the normal aging process (Bowie et al., 2005; Friedman et al., 2001; Fucetola et al., 2000; Niederehe & Rusin, 1987). This suggests a need to tailor psychosocial interventions for older adults to accommodate impaired cognitive abilities. For example, more extensive and frequent review of newly learned material or more opportunities to practice new skills may be particularly important in programs of psychiatric rehabilitation for older individuals.

The FAST, CBSST, and ST + HM programs include several strategies to address cognitive impairment. For example, the pace of the learning is slowed and the curriculum is shortened compared with skills training programs for younger adults. More frequent review of material and checking on understanding also are used in all three approaches. Information is often represented using mnemonic devices to facilitate recall. Finally, the CBSST intervention employs a variety of other strategies to improve memory for information and facilitate generalization of skills; for example, providing steps of a skill on a laminated card that participants may carry with them and use in real life settings. Cognitive enhancement strategies are included in these interventions to address cognitive impairment that is common in people with schizophrenia in the absence of any evidence that such strategies in fact facilitate learning in older people receiving skills training.

The persistence of cognitive impairment in older people suggests the potential utility of cognitive remediation. One recent study (McGurk & Mueser, 2008, this issue) compared the responses of older and younger clients with SMI to a standardized computer-based cognitive rehabilitation program that has been validated in schizophrenia (Sartory et al., 2005). They found that the younger clients demonstrated the expected improvements in cognitive functioning, whereas only minimal gains were seen in the older clients. However, the older study participants, but not the younger ones, demonstrated significant improvements in negative symptoms. This suggests some benefit from the training program. Adaptations

in cognitive rehabilitation programs may be necessary to improve the cognitive functioning in older persons with SMI.

## Sensory Impairments

The techniques used in psychosocial approaches may need to be adapted to accommodate sensory impairments (hearing and visual) among older adults. For example, the participant workbooks used in the FAST program are printed in large typeface to accommodate visual impairments. Whenever written materials are used with older individuals, magnifiers should be available for people who have poor vision. Hearing screens should be conducted prior to initiation of treatment that will rely on verbal processing of information and assistive devices should be available to individuals with poor hearing. Attention to voice volume and the acoustics of the treatment room also are important considerations. All participants in the ST + HM intervention were screened for vision and hearing impairments and assistive devices were obtained for those who needed them.

## Functional Impairment and Medical Comorbidity

Both younger and older adults with SMI tend to have functional impairments in personal care, social relationships, and community living. Older adults with SMI also are substantially impaired in health management behaviors such as medication self-management and accessing health care (Bartels et al., 1997b; Druss et al., 2001). Ineffective health management behaviors may be particularly problematic in late-life due to the high rate of comorbid medical conditions that develop as people age (Bartels, 2004; Bazemore, 1996; Jeste et al., 1996; Meeks & Murrell, 1997). Medical problems may worsen overall functioning as decreased mobility makes self-care, domestic activities, and engagement in social activities more difficult. This problem is compounded by the inadequate or inappropriate health care that older adults with SMI are more likely to receive compared with other older persons (Druss et al., 2000; Druss et al., 2001; Folsom et al., 2002; Lindamer et al., 2003; Petersen et al., 2003). This poorer quality of health care for diagnosed medical illnesses is associated with greater morbidity and mortality (Druss et al., 2001). Finally, age-related decreases in functional ability place older adults with SMI at particularly high risk of

admission to nursing homes or psychiatric hospitals (Meeks & Murrell, 1997; Semke et al., 1996).

These impairments strongly suggest the need for rehabilitative approaches for older adults that focus on remediation of health management and self-care skills. Remediation of these skills could be accomplished in the context of a skills training program that included modules teaching self-care and health management. The prevalence of comorbid medical illness among older persons with SMI also suggests the need for social skills and assertiveness training necessary to negotiate the complex arena of general health care. Social and communication skills may be crucial in health management, including such basic needs as communicating pain, discomfort, or side effects to health care providers; requesting and obtaining information necessary to make informed decisions; and expressing preferences for different health care options.

One approach to addressing functional impairment and medical comorbidity consists of coupling skills training in self-management of health with care management. For example, the HOPES study described previously includes a skills training curriculum that teaches skills for interacting with doctors (e.g., reporting physical symptoms, asking questions), medication self-management (e.g., using a pill organizer, behavioral tailoring strategies), and a variety of healthy living behaviors (e.g., diet, exercise, avoiding substances). These skills are supported by a nurse who facilitates preventive health care and reinforces self-management of health care problems, proper use of medications, and adoption of health behaviors.

## TAILORING PSYCHOSOCIAL REHABILITATION FOR OLDER ADULTS

Research on younger adults with SMI has demonstrated the benefits of a variety of psychosocial approaches including social skills training, vocational rehabilitation, and family therapy (Corrigan et al., 2008). The progress made in establishing the effectiveness of these approaches provides an excellent backdrop for research on psychosocial interventions for older adults. Because older adults have a variety of psychosocial needs that differ from younger adults, effectiveness studies specifically addressing this age group are critical.



Rehabilitation in areas such as family psychoeducation, recreation, symptom management, community survival, and social skills should be provided according to individual need. Accordingly, psychosocial rehabilitation for older persons with SMI should be adapted to respond to the primary needs of this age group. For example, with respect to family interventions, there are important differences in the concerns of very elderly parents of older adults with SMI, who are primarily focused on who will care for their child when they die, and parents of younger adults with SMI, who are primarily focused on management of problematic behaviors in their children (Cohen, 2000). These differences, and the fact that "family" often includes children and siblings of identified patients (Meeks & Murrell, 1997), may necessitate modifications to established family interventions for use with older adults.

Psychosocial interventions also should focus on areas identified as needs by older consumers themselves. In a recent survey of middle-aged and older adults with SMI, improving physical health was assigned the highest priority (Auslander & Jeste, 2002). At least half the survey respondents also assigned a high priority to aspects of social functioning such as communicating more effectively, having more friends, and feeling more comfortable around people. While psychosocial treatment for younger adults may typically focus on areas such as vocational rehabilitation, symptom management, family relations, and dating, psychosocial approaches for older adults with SMI may more appropriately focus on communication skills, accessing supports, and addressing general health care needs. For example, rehabilitation might address assertiveness, communication, and other skills necessary for acquiring assistance with personal care, transportation or household tasks, or strategies to encourage involvement in social or community activities (e.g., senior center, religious events).

Living independently also is an expressed priority for older persons with SMI (Bartels et al., 2003). Studies are needed to test interventions directly targeting skills and enhancing supports and functions essential for independent community living. Because impaired psychosocial functioning and comorbid medical problems are associated with institutional placement, interventions for older adults should focus not only on social and community living skills, but also on health management and self-care skills such as negotiating medication issues, describing symptoms, and making medical appointments on the telephone. The FAST program includes

training in independent living skills such as accessing public transportation, using the telephone, and managing finances that are particularly important for improving functioning among older adults living in community settings. The ST + HM curriculum includes a primary focus on health outcomes and management of physical health problems. In contrast, the CBSST intervention is very similar to programs of symptom self-management designed for younger people with SMI.

#### FUTURE DIRECTIONS FOR RESEARCH

This review underscores the need for development and evaluation of psychosocial interventions specifically tailored for older adults with SMI. Randomized trials of several promising models of skills training are underway, yet basic questions about the most effective approaches remain unanswered. In addition, very little is known about the effectiveness in older persons of psychosocial interventions that have a proven evidence-base in younger persons with SMI. In particular, assertive community treatment, family-based interventions, and vocational rehabilitation are proven effective interventions for younger adults with SMI, but research is needed to assess these modalities in older adults. Such studies should consider whether current models are appropriate and effective or whether age-specific modifications are required.

In addition to research on model development and evaluation, research is needed that matches clients' clinical and functional characteristics with the most appropriate type and intensity of psychosocial intervention. For example, cognitive impairment and negative symptoms are worse in older persons with early-onset schizophrenia compared with those with late-onset schizophrenia, who generally have better social skills and more social supports (Eastham & Jeste, 1997; Harris & Jeste, 1988). The latter group may have less need for intensive community support and skills training. But they have a greater potential to respond favorably to cognitive, supportive, personal, or behavioral psychotherapy, necessitating a different overall treatment approach.

Cognitive impairment and negative symptoms associated with schizophrenia have been cited as limiting factors in the effectiveness of skills training interventions (Jaeger & Douglas, 1992; Mueser et al., 1991). Despite uncertain results to date, investigations of

pharmacological approaches to improving cognition and negative symptoms in schizophrenia are ongoing and may hold promise for rehabilitative interventions. Furthermore, the interaction of pharmacological treatments with psychosocial interventions such as skills training in older adults is an untested yet important area for future study.

## BARRIERS TO IMPLEMENTING PSYCHOSOCIAL INTERVENTIONS

Despite the development and evaluation of several promising psychosocial interventions for older adults with SMI (Bartels & Drake, 2005; Van Citters et al., 2005), several factors may limit their dissemination in usual practice settings. For instance, barriers to implementation include limited funding for public mental health services, lack of providers with geriatric expertise, and provider resistance to change (Administration on Aging, 2001; Bartels, 2003). Older adults, in particular, are vulnerable to age-related economic and physical barriers to care, gaps in services, and inadequate financing of mental health treatments and services (Administration on Aging, 2001; Fields, 2000; Pace, 1989). Although community-based service providers are increasing their capacity to respond to the mental health needs of older adults, they often lack the reimbursement and staff required to provide appropriate prevention and early intervention services (Administration on Aging, 2001). Another challenge to improving the treatment of mental disorders in older persons lies in the fragmentation of services. Frequently, poor communication and coordination, differences in expertise, and different mechanisms of reimbursement or funding across providers, service settings, and agencies impede the implementation of best practices.

There is strong evidence that *what does* facilitate the adoption of evidence-based practices and programs is a longer term and sustained multilevel approach. This approach includes implementation components at the level of the provider and organizational components at the level of the organization or system. Four practitioner-level components of successful implementation include:

1. Selecting appropriate individuals who have the qualifications or characteristics to implement the practice or program.
2. Training to introduce background information, values, and key components of the practice or program.

3. On-the-job learning with support from a consultant or coach.
4. Evaluation of fidelity (accurate application and use of the practice or program) and outcomes (desired impact or objective for the consumer).

Two organizational (system-level) components include organizational “buy-in”, leadership, and administrative changes that facilitate the practice or program, and systems changes to ensure that the practices or programs are supported over time with the necessary financial, decision support, and human resources (Fixsen et al., 2005). In summary, regardless of the evidence-base supporting the effectiveness of a specific practice and the resources devoted to dissemination, implementation is likely to fail in the absence of a multilevel approach that includes organizational changes, targeted resources, and appropriate funding.

## CONCLUSIONS

This review points to the importance of developing and testing psychosocial interventions that are specifically designed to meet the treatment and rehabilitation needs of older adults with SMI. The effectiveness of several psychosocial treatment approaches has been established for younger individuals with SMI, but progress has been slower developing psychosocial approaches for older persons. Although older and younger adults with SMI demonstrate impairments in many of the same areas of functioning, age-specific differences described in this article suggest the need for age-specific psychosocial interventions.

Integration of skills-based psychosocial rehabilitation and family or caregiver interventions within a comprehensive rehabilitation context may be most promising for older adults with SMI. Anecdotal and observational studies of community support programs for older adults suggest that outreach, in vivo treatment, and a focus on improving health care also are needed adaptations for this age group. Three manualized psychosocial rehabilitative programs designed to improve functioning in older adults with SMI have been developed recently, including a skills training program, an intervention combining cognitive behavioral therapy and social skills training, and an intervention targeting both skill enhancement and health care management. Although these interventions remain under investigation, they hold promise for meeting the challenge of

providing effective services to the growing numbers of aging persons with SMI.

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