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## One Size Doesn't Fit All: A Trial of Individually Tailored Skills Training

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### Abstract

**Objectives**—This paper describes a pilot test of an individually tailored program to improve community living and health self-management skills in older adults with serious mental illness.

**Methods**—This study provided the Helping Older People Experience Success – Individually Tailored (HOPES-I) intervention, an adaptation of an empirically supported, manualized, group-based skills training program shown to improve community functioning, psychiatric symptoms, self-efficacy, and receipt of preventive health. HOPES-I targets five skill areas: leisure time, communication, independent living, friendships, and health self-management. We enrolled 47 adults age 50 and older (mean age=62) with serious mental illness (38% schizophrenia spectrum, 62% mood disorders). Trained HOPES-I coaches evaluated participants' skills and functioning and engaged them in shared decision making to select which curricular areas to receive. Participants received one HOPES-I session per week for 9–12 months, with assessments of overall psychosocial functioning and the five skill areas targeted by the program at baseline, post-intervention, and at 3- and 6-months.

**Results**—Participants with baseline impairments in overall functioning and in each of the skill areas targeted by the program demonstrated significant improvements on related outcome measures. Selection of specific HOPES-I curriculum was not associated with level of impairment in associated skill areas at baseline, but participants with more impairment overall chose and completed more curriculum modules.

**Conclusions and Implications for Practice**—The results of this study support the feasibility and potential benefits of an individually tailored skills training program for the rapidly growing and vulnerable group of older people with serious mental illness.

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## Keywords

schizophrenia; skills training; older adults; serious mental illness; individual tailoring

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Serious mental illness (SMI), including schizophrenia, schizoaffective disorder, bipolar disorder, and treatment-refractory depression, has a negative impact on the functioning and well-being of many older adults (Bartels, Mueser, & Miles, 1997; Jeste et al., 2003) and is associated with increased morbidity, healthcare utilization and costs, and early mortality (Bartels, 2004; Jeste, Gladsjo, Lindamer, & Lacro, 1996). Older adults with SMI are predicted to rapidly increase over the coming decade with the aging of the “baby boom generation (U.S. Census Bureau, 2004). The need for psychosocial interventions specifically tailored for this group stems from three critical factors. First, Medicaid recipients with SMI age 40–64 are almost 4 times more likely to be admitted to nursing homes compared to other Medicaid beneficiaries (Andrews, Bartels, Xie, & Peacock, 2009). Risk factors for nursing home placement include inadequate independent living skills, medical comorbidity, and poor social supports (Bartels, Mueser, & Miles, 1997), each of which can be addressed with psychosocial interventions specific to the needs of older adults with SMI. Second, adults with SMI experience a reduced life expectancy associated with high rates of co-morbid health conditions compared to adults without mental illness (Colton & Manderscheid, 2006). This early mortality disparity reflects a variety of preventable health conditions including greater rates of obesity and tobacco use (Dickerson et al., 2006; Daumit et al., 2003; Diaz et al., 2009; Lasser et al., 2000), as well as poor access to primary health care (Mitchell, Malone & Doebbling, 2009; Mitchell & Lord, 2010; Druss et al., 2001). Finally, the need for tailored interventions for older adults with SMI is underscored by the high cost of care for this growing subgroup with special needs (Hendrie et al., 2014).

The Helping Older People Experience Success (HOPES) program was developed by our group to address the need for skills training and health management support specifically tailored for older adults with SMI (Pratt, Bartels, Mueser & Forester, 2008). HOPES includes weekly group skills training for one year focused on social and independent living skills, combined with biweekly in vivo community practice trips. Among the seven HOPES curriculum modules, two cover topics of particular relevance to older persons: Healthy Living and Health Self-Management. The other five (see Table 1) address topics frequently covered in programs for younger people, but were tailored for older people. For example, the Independent Living module includes the skill of asking for help, and several skills related to communication over the telephone, both topics of importance as individuals age, become less mobile, and are more dependent on others. Given the importance of strengthening social networks in older people with SMI to improve management of chronic medical conditions and reduce premature nursing home placement, particular emphasis was placed on reconnecting and improving communication with family and friends. The effectiveness of HOPES was demonstrated in a randomized controlled trial with 183 people with SMI (mean age 60.1 years) in which participants assigned to HOPES improved significantly in social and independent living skills, community functioning, social functioning, negative symptoms, and receipt of preventive health care compared to those who received usual care

at 12 and 24 months (Mueser et al., 2010), with effects maintained over 3 years (Bartels et al., 2013).

Although group-based programs for older adults have demonstrated effectiveness in improving social functioning and independent living skills, individualized skills training programs are needed for several reasons. First, not all individuals have the same impairments, thus individually tailored programs can efficiently provide opportunities to enhance skills in areas of greatest need and preference, which may also facilitate engagement. Second, individual tailoring accommodates the cognitive, functional, and sensory limitations that may especially affect older adults. Third, individual training may be needed for those who cannot access a group because of mobility or transportation problems. Fourth, individual programming may be needed for people who are socially anxious or feel stigmatized by treatment provided at a mental health clinic, which is especially true for older people. Finally, individualized skills training permits more opportunity to observe, support, and practice specific skills in the environments where they will be used, facilitating generalization.

The purpose of this project was to adapt HOPES to create an individually-based program (HOPES-I); to evaluate the feasibility of providing HOPES-I; and to explore whether participation in HOPES-I was associated with improved functioning in an open pilot study. We sought to examine whether: (1) the HOPES-I program could be delivered in individual weekly sessions by “coaches” with varied levels of training (interns, case managers, master’s level therapists) and would be acceptable to older people with SMI; (2) participation would be associated with improvements on specific measures of behavior and skills for people with baseline impairments in those areas; and (3) HOPES-I would be associated with improved community functioning and quality of life.

## Methods

We conducted an open pilot trial of HOPES-I at two community mental health centers in New Hampshire. Participants provided written informed consent through procedures approved by the Committees for the Protection of Human Subjects at Dartmouth College and the New Hampshire Bureau of Behavioral Health, which also approved the full study protocol. Trained research interviewers administered all assessments at baseline, post-intervention, and 3- and 6-month follow-up. Participants were recruited through self- and clinician referrals and were paid for completing assessments, but not for participation in HOPES-I sessions.

## Participants

Eligible individuals met the following inclusion criteria: age  $\geq$  50; enrolled in mental health treatment for at least 3 months; SMI defined as DSM-IV axis I diagnosis of schizophrenia, schizoaffective disorder, bipolar disorder, or major depression and pervasive impairment lasting at least one year across multiple areas of psychosocial functioning; and ability to provide voluntary informed consent, or assent with consent by a legal guardian. Exclusion criteria included: residing in a nursing home; diagnosis of dementia; terminal illness with

life expectancy  $\geq 1$  year; or moderate to severe cognitive impairment determined by a Mini-Mental State Examination (Folstein, Folstein & McHugh, 1975) score  $< 24$ .

### **HOPES-I Intervention**

HOPES-I is a manualized program targeting 5 of the 7 HOPES skill areas. Each of the 5 domains includes 6–8 component skills (see Table 1). HOPES-I coaches delivered the intervention in weekly, 60-minute sessions in community settings (e.g., participants' homes, local public libraries, coffee shops, senior centers). All HOPES-I coaches received a 2-day training in skills training techniques, instruction on delivering the curriculum, and weekly supervision.

During the first session, following orientation to the program, HOPES-I coaches administered the Client's Assessment of Strengths, Interests, and Goals (CASIG; Wallace, Lecomte, Wilde & Liberman, 2001), to evaluate physical health, medication and symptom management, substance abuse, social functioning, communication skill, personal hygiene, instrumental activities of daily living, work, and leisure functioning as potential areas in need of skills training. Feedback on the CASIG was provided during the second session to facilitate discussion of recovery-oriented goals and identification of the first HOPES-I module to receive. HOPES-I coaches encouraged participants to identify at least one long-term, recovery-oriented goal to work towards (examples included: obtaining a volunteer job, reconnecting with family or old friends, pursuing meaningful activities, e.g., painting, writing poetry, joining a senior center). HOPES-I sessions included discussion of objectives set the previous week (steps toward the long-term goal), review of previous learning, presentation of new curriculum, and identification of new objectives. HOPES-I coaches focused on skill building, including role-play practice, and direct facilitation and support of goals and objectives (e.g., going to a fitness center with a participant to encourage independent access of this resource). Coaches helped participants identify steps they could take each week to continue making progress toward long-term goals. For example, one participant who wanted to expand her social network agreed to visit the senior center to tour the facility.

Following completion of the first module, HOPES-I coaches and participants engaged in a process of shared-decision making to identify the next area to cover. Coaches encouraged selection of curricula related to areas of need identified on the CASIG; however, participants made the final decisions about which topics to pursue, in succession. HOPES-I coaches provided 10 sessions (2 skills from each of the 5 modules) representing a core subset of the curriculum to all participants. Participants were encouraged to receive at least 3 modules in their entirety, but could cover all 5 if desired, within a period of up to 12 months.

### **Implementation of HOPES-I**

After adapting the HOPES curriculum for delivery in individual sessions, we trained staff at the mental health center research sites to provide HOPES-I, billing for sessions under the Medicaid rehabilitation option. Several months after the program was underway, we trained masters in social work interns and bachelor and master's level staff at the office of the Principal Investigator to provide all HOPES-I sessions because the mental health center staff

struggled to prioritize delivery of HOPES-I over other outreach and support (e.g., helping clients with grocery shopping, paying bills, making appointments). Given the standardized nature of the intervention, the interns and clinical research staff were easily trained and supervised.

## Measures

Psychosocial functioning was assessed using the Multnomah Community Ability Scale (MCAS; Barker et al., 1994), a 17-item informant-rated measure of community functioning, and the Heinrichs Quality of Life Scale (QLS; Heinrichs, Hanlon & Carpenter, 1984), a 21-item interviewer-rated scale. Each item on the QLS is rated from 0 to 6. Each item on the MCAS, which includes four domains (interference with functioning, adjustment to living, social competence, and behavioral problems), is rated from 1 to 5. A case manager working closely with the participant completed the MCAS at baseline and after the participant completed the HOPES-I program. The leisure skills subscale of the Independent Living Skills Scale (Wallace et al., 2000), which includes 12 questions about engagement in enjoyable activities within the prior 30 days, was used to evaluate productive use of leisure time (Module 1). The Social Skills Performance Assessment (SSPA; Patterson et al., 2001), a role-play test designed for use with older people with SMI, was employed to evaluate communication skills (Module 2). The UCSD Performance-Based Skills Assessment (UPSA; Patterson et al. 2001), a role-play test developed for use with older people with SMI, was used to evaluate independent living skills (Module 3). The Relationship with Friends and Peers item of the Scale to Assess Negative Symptoms (Andreasen, 1984), was used to measure friendship skills and social connectedness (Module 4). An expanded version of the SSPA (Pratt et al., 2007), which includes two additional role-plays to measure skills for talking to doctors, was used to evaluate health self-management skills (Module 5).

## Statistical Analyses

In order to determine whether HOPES-I was associated with improved functional outcomes, we first classified individuals at baseline with respect to specific domains targeted by the intervention. Performance in each domain was assessed using one of the study measures described above, with “impairment” defined separately for each measure based on standard interpretation of the scores. Table 2 presents each domain, the measure used to evaluate performance, the definition of impairment, and the number of participants with baseline impairments. Following this, we conducted general linear mixed model regression analyses with unstructured covariance to analyze differences over time (within those subgroups of participants) on all the outcomes except the MCAS. Since the MCAS was administered only twice, paired t-tests were conducted instead. Time was entered into the mixed models as a continuous variable. Mixed-effects linear regression has advantages over traditional repeated-measures analyses of variance in that it accommodates missing data, thereby allowing for the inclusion of anyone with baseline and at least some follow-up data in the analyses. Statistical significance was set at  $p < 0.05$ . We conducted secondary exploratory analyses using chi-square analyses to determine whether impairments in specific skill areas influenced participants’ selection of which HOPES-I modules to receive.

## Results

A total of 146 potential participants were screened, 144 of whom appeared to meet eligibility criteria. Study staff were able to contact 98 of these individuals. Many people who could not be reached had no telephone or were in the hospital. Among those who were invited to join the study, 64 (65%) consented to participate. The most common reasons for declining were lack of desire to work with a new clinician or unwillingness to commit the time required for sessions and assessments. Among the 64 people who provided informed consent, 5 did not actually meet entry criteria, 8 changed their minds about participating, and 4 could not be reached to complete the baseline assessment, leaving 47 individuals who enrolled and participated in HOPES-I sessions. Over 12 months, participants completed a mean of 29.6 ( $\pm 9.4$ ) sessions and 3.32 modules ( $\pm .98$ ). Table 3 lists further information about participation, including the number of participants who chose each module and the average percentage of each module completed. Participants were predominantly female (76%) and 62% had major depression or bipolar disorder, while 38% had schizophrenia or schizoaffective disorder. Characteristics of the study sample at baseline are listed in Table 4.

Results of analyses to explore potential improvement on outcome measures are summarized in Table 5. Some improvements were observed for all of the HOPES-I functional domains as well as overall psychosocial functioning. With respect to leisure skills (Module 1), participants with baseline impairment on the leisure subscale of the ILSS increased their engagement in leisure activities. Many participants, with encouragement and support from their HOPES-I coaches, initiated new leisure activities or resumed hobbies that had not been pursued in the recent past (e.g., spending time on crafts, joining social groups, exploring local libraries and museums). With respect to communication skills (Module 2), participants with baseline impairments on the SSPA improved in their ability to communicate effectively. Many participants felt more confident starting and maintaining conversations at places such as family gatherings or group home common areas. Regarding community living skills (Module 3), participants with baseline impairments in independent living skills on the UPSA improved in their ability to perform tasks associated with maintaining community tenure, such as budgeting money, making medical appointments independently, and using public transportation. Regarding friendship skills (Module 4), participants with few and/or underdeveloped friendships based on their SANS score at baseline increased the quantity and/or quality of their friendships. Many participants were able to identify places to meet new people and initiated more contact with existing friends.

Regarding skills for health self-management (Module 5), participants with baseline impairment in skills for communicating with doctors on the SSPA improved their ability to report physical symptoms and ask for treatment options, which was anecdotally confirmed by mental health center clinical staff. With respect to participants' ability to report medication side effects and negotiate medication issues, participation in HOPES-I was associated with some improvement from the baseline to the 3-month follow-up, but skill level then attenuated at 6-months follow-up. In terms of general psychosocial functioning, participants with baseline impairment on the QLS improved in overall quality of life, and those with baseline impairment on the MCAS showed improvement in community functioning. These gains, which did not differ based on HOPES-I coaches' level of

education or experience, potentially have real-world implications for long-term tenure in the community.

None of the exploratory chi-square analyses to evaluate the relationship between the HOPES-I curriculum area that participants chose to learn and the presence of impaired functioning at baseline in that area was significant (all  $p$ 's  $>.10$ ). Thus, preference for skills training in particular domains of functioning did not appear to be related to greater impairments in those areas. However, the number of modules that participants completed was highly significantly correlated with the number of domains of impaired functioning at baseline ( $r=.67$ ,  $p<.001$ ), indicating that participants with more impairments chose more modules. An examination of which HOPES-I modules were most often chosen indicated that Module 1 (leisure skills) was the most popular (chosen by 41 participants), while Module 3 (community living skills) was the least popular (chosen by 15 participants), with the other 3 modules selected by roughly equal numbers of participants (Module 2 chosen by 36 participants; Modules 4 and 5 each chosen by 32 participants).

## Discussion

Given the constellation of needs, goals, and preferences of older people with SMI, developing tailored, individually based psychosocial rehabilitation is especially important. Most prior studies of skills training have focused on younger adults (age 20-50), and have evaluated programs with a fixed curriculum using a group-based approach. For example, the mean age of participants in a meta-analysis of 19 randomized controlled trials of skills training for schizophrenia was 37.7 years (Kurtz & Mueser, 2008). The results of this pilot study confirm the feasibility of providing manualized training in psychosocial and health self-management skills to older people with SMI in individual, community-based sessions. A particular strength of the study was the ability to train clinicians with varying levels of expertise (e.g., bachelor's level case managers, social work interns) to deliver HOPES-I.

We observed improvements in each of the domains among participants with baseline impairments in those areas, despite the lack of a significant relationship between impairment in a specific domain and selection of the corresponding HOPES-I module. This may suggest that benefits of skills training in a particular domain may extend beyond that focal area. Alternatively, participants may have improved across multiple domains because they all received at least 2 classes from each of the 5 modules. The positive relationship between total number of impairments and number of modules completed suggests that people with more challenges are aware of their need for more training, which could be attended to through the individualization of skills training in HOPES-I. By working one-on-one with participants, HOPES-I coaches were able to observe participants in community settings and to provide immediate training and reinforcement as needed. In contrast to group-based skills training, this aspect of HOPES-I may be especially important to facilitating behavior change because rehabilitation goals were encouraged directly in relevant community settings instead of merely discussing them in an office-based session. The combination of using a manualized curriculum, individual choice of modules, and flexible pacing represents a balance between standardization and *individualization* that may have allowed participants to benefit maximally from HOPES-I.

In spite of the positive outcomes of this pilot, several limitations warrant consideration. First, there was no comparison group and the sample size was modest, suggesting that improvements in functioning could reflect “regression to the mean” or the natural course of SMI. However, participants were older adults with SMI whose eligibility for services required longstanding impairment in social and community functioning, which tend to be stable over time and resistant to change in the absence of focused rehabilitation (Mueser et al., 2010, Bartels et al., 2013). Second, it cannot be determined whether participation in the skills training or non-specific treatment factors (e.g., attention) contributed to the observed gains. Controlled research on HOPES-I is needed to address these questions. Third, most of the participants were White, and thus the feasibility of implementing HOPES-I in more ethnically diverse populations remains to be evaluated. However, the community based setting of this trial may be generalizable to other mental health centers serving similar populations.

The results of this pilot study support the feasibility and suggest potential benefits of an individually tailored living skills training program for the vulnerable and rapidly growing subgroup of older individuals with SMI. Nevertheless, definitive conclusions about the effectiveness of HOPES-I cannot be drawn without a longer, randomized controlled trial with a larger, more diverse sample.

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**Table 1**

## HOPEs-I Curriculum

<b>Module 1</b>	<b>Making the Most of Leisure Time</b>
Class 1	Savoring the Moment
Class 2	Enjoying Leisure Time by Reminiscing
Class 3	Enjoying Leisure Activities Through Anticipation
Class 4	Putting it All Together: The Three Stages of Fun
Class 5	Inviting Someone to Share a Leisure Activity
Class 6	Planning for an Outing
<b>Module 2</b>	<b>Communicating Effectively</b>
Class 1	Starting a Conversation
Class 2	Maintaining Conversations by Asking Questions
Class 3	Maintaining Conversations by Giving Factual Information
Class 4	Sticking With a Topic of Conversation
Class 5	Appropriate Self-Disclosure
Class 6	Appropriate Disclosure in Conversation
Class 7	Ending a Conversation Smoothly
Class 8	Putting it All Together
<b>Module 3</b>	<b>Living Independently in the Community</b>
Class 1	Traveling Independently
Class 2	Reading Transportation Maps
Class 3	Making a Positive Request
Class 4	Communicating Effectively on the Telephone
Class 5	Leaving an Effective Telephone Message
Class 6	Making a Monthly Budget
Class 7	Acquiring Important Items from the Store
Class 8	Solving Community Living Problems
<b>Module 4</b>	<b>Making and Keeping Friends</b>
Class 1	Building a Foundation for Friendship & Finding Common Interests
Class 2	Meeting New People
Class 3	Giving and Receiving Compliments
Class 4	Learning About Another Person
Class 5	Making Plans with a Friend
Class 6	Negotiating a Compromise
Class 7	Reconnecting With Old Friends
Class 8	Responding to Requests
<b>Module 5</b>	<b>Health Self-Management</b>
Class 1	Anxiety Management
Class 2	Making and Preparing for a Health Care Visit
Class 3	Sharing Health Information with Your Doctor

<b>Module 1</b>	<b>Making the Most of Leisure Time</b>
Class 4	Reporting Physical Symptoms
Class 5	Healthy Sleep Habits
Class 6	Major Medical Problems
Class 7	Preventive Health Care
Class 8	Healthy Eating and Exercise

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**Table 2**

Definition of impairment for each measure and number of participants with baseline impairment

<b>Domain</b>	<b>Measure(s)</b>	<b>Definition of impairment</b>	<b>Number of participants with baseline impairment</b>
Overall Functioning	Heinrichs QLS	Total Score < 63	28
	Multnomah	Mean score < 4	25
<i>Module 1: Leisure Skills</i>	ILSS Leisure Subscale	Mean score <.5	33
<i>Module 2: Communication Skills</i>	SSPA Role-Play 1	Mean score <3	10
	SSPA Role-Play 2	Mean score <3	22
<i>Module 3: Community Living Skills</i>	UPSA Total	Score in bottom quartile	11
<i>Module 4: Friendship Skills</i>	SANS Relationships w/Friends & Peers	Score 3	38
<i>Module 5: Health Self-Management</i>	SSPA Role-Play 3	Mean score <3	11
	SSPA Role-Play 4	Mean score <3	13

**Table 3**

Dosage and Frequency of HOPES-I Modules

Module	Number of participants who selected the module	Mean number of sessions received <i>m</i> ( <i>sd</i> )
Module 1	41	6.36 (2.03)
Module 2	15	6.33 (2.44)
Module 3	36	7.42 (2.45)
Module 4	32	7.56 (2.12)
Module 5	32	9.16 (3.58)

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**Table 4**

Baseline demographic characteristics of N=47 participants

Characteristic	Total Sample (N=38)	
	N	%
Age (M±SD)	62±6.5	
<b>Gender</b>		
Male	11	24
Female	36	76
<b>Ethnicity</b>		
White	47	100
<b>Marital Status</b>		
Ever Married	31	81
Never married	7	19
<b>Education</b>		
High school	20	43
> High school	27	57
<b>Residential</b>		
Supervised/supported housing	9	19
Independent	38	81
<b>Psychiatric Diagnosis</b>		
Schizophrenia	17	36
Schizoaffective	12	26
Bipolar Disorder	11	23
Major Depression	7	15

**Table 5**  
Pre-post outcomes for participants with baseline impairments who received corresponding module.

Functional Domain	Baseline		Post-intervention		3-months		6-months		F	df	P
	M	SD	M	SD	M	SD	M	SD			
<b>Overall Functioning</b>											
Heinrichs QLS <sup>a</sup>	45.1	9.6	52.4	15.5	52.6	17.5	50.8	18.6	7.44	1, 22	0.012
Multnomah <sup>b</sup>	3.43	.35	3.64	.38					2.89 <sup>c</sup>	1, 24	.008
<b>Leisure (Module 1)</b>											
IL-SS Leisure subscale <sup>d</sup>	.346	.11	.382	.12	.422	.14	.417	.16	14.31	1, 25	0.001
<b>Communication (Module 2)</b>											
SSPA Role-play 1 <sup>e</sup>	1.6	.52	3.1	1.1	3.0	1.1	3.3	1.1	19.88	1, 8	0.002
SSPA Role-Play 2 <sup>e</sup>	2.67	1.71	4.0	2.43	4.0	2.62	5.0	3.16	42.75	1, 15	<0.001
<b>Community Living (Module 3)</b>											
UPSA Total <sup>f</sup>	63.05	18.3	64.71	17.6	71.63	18.8	72.90	20.5	5.31	1, 14	.037
<b>Friendship (Module 4)</b>											
SANS Relationships w/Friends & Peers <sup>g</sup>	3.84	.68	3.63	.66	3.90	.64	3.86	.66	6.01	1, 27	0.021
<b>Health Self-Management (Module 5)</b>											
SSPA Role-Play 3 <sup>e</sup>	2.41	.20	3.17	.66	3.31	.80	3.56	.58	31.01	1, 10	<0.001
SSPA Role-Play 4 <sup>e</sup>	2.08	.34	2.83	.89	3.50	1.0	3.00	.94	4.12	1, 11	0.065

<sup>a</sup>Possible scores range from 0 to 126; higher scores indicate greater quality of life. Baseline impairment = <63.

<sup>b</sup>Possible scores range from 0 to 5; higher scores indicate better community functioning. Baseline impairment = <4.

<sup>c</sup>Paired t-test.

<sup>d</sup>Possible scores range from 0 to 1; higher scores indicate more engagement in leisure activities. Baseline impairment = <.50

<sup>e</sup>Possible scores range from 1 to 5; higher scores indicate greater skills. Baseline impairment = <3.

<sup>f</sup>Possible scores range from 0 to 100; higher scores indicate greater skills. Baseline impairment = bottom quartile.

<sup>g</sup>Possible scores range from 0 to 5; higher scores indicate worse negative symptoms. Baseline impairment = <3.