Supported Education for Adults With Psychiatric Disabilities: Effectiveness of an Occupational Therapy Program

Sharon A. Gutman, Robin Kerner, Irene Zombek, Jennifer Dulek, C. Andrew Ramsey

KEY WORDS
• education, special
• mental disorders
• program evaluation
• rehabilitation, vocational
• social support

OBJECTIVE. This study assessed the effectiveness of a supported education program for adults with psychiatric disabilities.

METHOD. Thirty-eight adults with psychiatric disabilities were randomly assigned to an experimental group (n = 21) that received supported education services or to a control group (n = 17) that received treatment as usual.

RESULTS. We found a statistically significant difference between experimental and control group participant scores on the five instruments used to measure the program’s effectiveness. Sixteen of the 21 experimental group participants (76%) completed the program. At 6-month follow-up, 10 (63%) had enrolled in an educational program, had obtained employment, or were applying to a specific program. Only 1 of the control group participants was enrolled in an educational program.

CONCLUSION. The results support the effectiveness of the supported education program. A significant number of participants were able to improve their basic academic skills, enhance professional behaviors and social skills, and return to the school or work environment.


The Bridge Program was developed as a supported education service for adults with psychiatric disabilities who require assistance to pursue postsecondary education, employment, or both. Because the onset of psychiatric disability commonly occurs in late adolescence and early adulthood, many people with mental health concerns have difficulty completing high school and entering postsecondary education or employment (Mowbray et al., 2005). Consequently, members of this population frequently have gaps in their basic educational knowledge and lack the interpersonal skills needed to succeed in the student or worker role. They may also have a history of failed attempts to enter and succeed in school or work. A history of failed experiences in the school and work environment further reinforces decreased confidence and self-esteem. Many find that they have become limited to minimum-wage, entry-level positions that do not offer access to adequate health care (Smith-Osborne, 2005), including the psychiatric care needed to manage symptoms, beginning a pernicious cycle. Lack of access to appropriate health care and gaps in basic educational and interpersonal skills converge as multiple factors that further impede a person’s ability to succeed in the student or worker role.

Several public acts have attempted to help people with disabilities—including psychiatric disabilities—receive accommodations that could promote their ability to succeed in an educational setting. These include the Americans With Disabilities Act of 1990, Individuals With Disabilities Education Improvement Act of 2004, and the Rehabilitation Act of 1973. Yet, despite this legislation, supportive services for people with physical and learning disabilities are more commonly offered in
institutions of higher education than are services for people with psychiatric disabilities (Hutchinson, Anthony, Massaro, & Rogers, 2007). Stigmatization and misperception may account for this disparity in service. Administrators and faculty may believe that people with psychiatric disabilities are unable to endure the rigors and stress of an academic environment. Recent incidents of school violence involving people with mental illness may reinforce the fear that students with psychiatric disabilities may harm themselves or others on school property. If the perpetrators of such incidents had received the needed psychiatric support and treatment—as advocated through supported education programs—such violence may have been prevented. Although advances in pharmaceutical intervention have helped people with psychiatric disabilities attain a higher level of functional performance in daily activities, misunderstanding and fear about mental illness appear to inhibit the development of supported services in institutions of higher education (Mowbray, 2004).

Fewer than 100 documented supported education programs currently exist in the United States, and most have been developed by social workers and psychologists (Leonard & Bruer, 2007). Although occupational therapists have more commonly provided supported employment services on the job site (Auerbach, 2001; Moll, Huff, & Detwiler, 2003; Oka et al., 2004; Waghorn & Lloyd, 2005; Wong et al., 2004), some occupational therapists have begun to deliver supported education services to children in the secondary school system. Downing (2006) described a supported education program in the public school system called the Portland Identification and Early Referral Program. The program helps students with psychiatric disabilities and their family members to better understand mental illness and to use strategies that enable identified students to complete their secondary education and enter postsecondary educational settings or employment. Similarly, Chandler (2007) described occupational therapy services provided in the public school system to children with emotional disturbances; such services are designed to enhance learning and promote high school degree completion.

Other occupational therapists have described supported education services in the postsecondary school system. Pathways to Success (Knis-Matthews, Bokara, DeMeo, Lepore, & Mavus, 2007; Stern, 2006) is a supported education program in which adults with psychiatric disabilities are able to enroll in simulated college courses—offered through a university occupational therapy program and run by students—in preparation for return to the educational setting. Similarly, a supported education program at the University of Southern California is implemented through its Occupational Therapy Faculty Practice. Therapists provide support to university students who self-identify the need for supported education services (Schindler et al., 2007).

Despite the involvement described earlier in supported education for young adults with psychiatric disabilities, occupational therapists have not commonly become involved in this critically needed service area. Occupational therapists can contribute to supported education services in unique and unparalleled ways. A primary role of the occupational therapist is to help people assume or reenter desired community roles such as student or worker. The occupational therapy processes of activity analysis and synthesis can be used to break down cognitive and psychosocial skills into component parts that can be addressed separately until participants can integrate all steps in the correct sequence. Therapists can help participants learn academic and social skills by providing progressively greater challenges until functional performance in specific activities is attained. Occupational therapy formal education distinctly prepares therapists to become proficient providers of supported education and employment services.

Occupational therapy involvement in supported education services is highly congruent with several of the profession’s most recognized and used frames of reference—for example, Mosey’s (1970, 1986) acquisitional frame of reference and Kielhofner’s (2002, 2004) Model of Human Occupation (MOHO). In accordance with the acquisitional frame of reference, the assumption of the adult student role can be facilitated through a structured classroom setting with similar peers. This type of group setting can provide an awareness of the behaviors and skills needed for successful interactions and performance in the postsecondary educational setting. In accordance with the model of human occupation, supported education participants can develop

- An occupational identity as an adult learner,
- Occupational competence in the educational and social skills needed to succeed in a postsecondary setting, and
- Occupational adaptation to the demands of being an adult learner with a psychiatric disability.

Through structured activities and opportunities for practice, participants can master the habits and routines needed to support the desired role as an adult learner.

The student and worker roles are among those most highly valued in U.S. society. The ability to succeed in these roles is directly related to one’s ability to secure basic needs—appropriate health care; food, clothing, and housing; and social participation. Success in these roles is also related to one’s ability to live independently, secure an acceptable quality of life, and engage in activities and roles that are personally meaningful. Because of the relationship between success in the student and worker roles and adult life opportunities, the development of supported education services for people
with psychiatric disabilities cannot be overstated. The expertise of occupational therapists is critically needed to help this population succeed in student roles and ultimately become fully participating members of society who can independently meet housing, health care, and social participation needs.

In this study, we assessed the effectiveness of a supported education program—the Bridge Program—for adults with psychiatric disabilities who desire to pursue educational or vocational training. The study used a quasi-experimental design with random assignment to an experimental or control group.

**Method**

We initially recruited 46 participants with psychiatric disabilities to participate in this study. Eight dropped out over the course of the study, leaving a total of 38. Participants were randomized to an experimental group \((n = 21)\) that attended the Bridge Program or to a control group \((n = 17)\) that received treatment as usual at their own mental health facility. The Bridge Program ran twice per week for 6 weeks in the occupational therapy program of a large urban university. The control group received treatment as usual for the same 6-week period. Data were collected at pre- and postprogram points, with follow-up at 1 and 6 months. We collected both quantitative and qualitative data.

**Instruments**

We used six instruments to measure how effectively the Bridge Program could assist participants in pursuing personal educational goals. The Participant Comfort With the Student Role Scale (Gutman et al., 2007) is a 10-item, 5-point Likert scale with two open-ended questions; the scale was developed for assessment of the Bridge Program. Internal consistency of the scale was found at an alpha coefficient of .88. To determine whether the program helped participants feel more comfortable as adult learners in an academic environment, we administered the scale as a pre- and postprogram survey on the first and final days of the program. Both experimental and control group participants were asked to complete this scale on the same dates.

We used three rating scales (the Task Skills, Interpersonal Skills, and School Behavior Scales) to measure whether participants were able to enhance the professional behaviors and social skills needed to succeed in an academic environment (Schindler, 2004). The Task Skills Scale (TSS), Interpersonal Skills Scale (ISS), and School Behavior Scale (SBS) are standardized evaluations with high levels of reliability and internal consistency. Interrater reliability was found to range from .81 to .93 for the TSS, from .70 to .88 for the ISS, and from .86 to .99 for the SBS. Test–retest reliability ranged from .81 to .93 for the TSS and from .82 to 1.0 for the ISS; the SBS has not yet been tested for test–retest reliability. Internal consistency was found at an alpha coefficient of .99 for both the TSS and ISS and .83 for the SBS.

A high degree of convergent validity was also found for the TSS and ISS using instruments with established content validity (Goldman, Rodriguez, Saunders, Shiman, & Solomon, 2005). The convergent validity of the TSS significantly correlated with the Occupational Therapy Task Observation Scale \((r = .709, p = .01;\) Margolis, Harrison, Robinson, & Jayaram, 1996). Similarly, the convergent validity of the ISS significantly correlated with the Specific Level of Functioning Scale \((r = .761, p = .01;\) Schneider & Struening, 1983). The convergent validity of the SBS has not been tested because of the unavailability of a similar instrument with established validity.

The TSS, ISS, and SBS are observational measures that were completed for each participant by a double-blinded coinvestigator who did not know which participants were in the experimental or control group. These scales were completed during the second and final weeks of the program for participants in both the experimental and control groups.

We administered the Participant Overall Satisfaction Scale (Gutman et al., 2007) on the final day of the program to the experimental group participants. This scale asks participants to rate their level of satisfaction with specific aspects of the Bridge Program. It is a 10-item, 4-point Likert-type scale with two open-ended questions. Internal consistency of the scale was found at an alpha coefficient of .88. Because the scale asks participants to assess their satisfaction with the Bridge Program curriculum, we did not administer it to control group participants.

We also administered pre- and posttests to the experimental group participants for each of the 12 academic modules. Each test consisted of 10 multiple-choice questions. The questions directly reflected the material presented in each module and were administered to determine whether the participants were able to learn the presented concepts. Although these evaluations do not possess reliability or validity, they were developed on the basis of literature reviews that identified the salient factors to address for each specific topic.

Additionally, the number of experimental and control group participants who engaged in some type of further educational pursuit or obtained employment on study completion was compiled at three points in time: (1) the final day of the program, (2) 1 month after the program, and (3) 6 months after the program.

Because occupational therapy students participated in the Bridge Program as instructors and mentors, they were
evaluated to determine whether their comfort level with a mental health population changed as a result of their involvement in the program. We administered the OT Student Comfort With a Mental Health Population Scale (Gutman et al., 2007) as a pre- and posttest survey. This scale is a 10-item, 5-point Likert-type scale with three open-ended questions. Internal consistency of the scale was found at an alpha coefficient of .84. To ensure that students were not biased by their mental health coursework, we administered the scale during the first week in which students began their occupational therapy educational curriculum. The scale was administered as a posttest survey on the final day of the Bridge Program.

**Participant Selection**

We recruited participants from three separate mental health facility sites. To be eligible for the study participants had to

- Be ≥18 years of age,
- Be their own legal guardians,
- Be able to cognitively weigh study risks and benefits to decide whether to participate,
- Possess a psychiatric disorder diagnosed by a physician,
- Be receiving medication management from a licensed psychiatrist or nurse practitioner,
- Demonstrate an interest in pursuing further education,
- Be willing to make a commitment to attend all 12 sessions of the program,
- Be able to function adequately in most daily living activities,
- Be ready to begin greater community participation, and
- Have a minimum 10th-grade reading and writing level.

Reading and writing levels were assessed through the Wide Range Achievement Test (Wide Range Incorporated, 1993), which was administered during recruitment sessions. Exclusion criteria included a lack of fluency in English and possession of an active substance abuse disorder. Participants who met these criteria were asked to sign letters of informed consent and were then randomized to an experimental group (n = 21) or a control group (n = 17).

**Setting**

Of the 12 Bridge Program modules, 9 were held in an electronically equipped classroom in the occupational therapy program at a large urban university. Two modules took place in computer labs to provide all participants with use of a computer. One module was held in the university library.

Control group participants received treatment as usual at their regular mental health facilities. Treatment as usual consisted of medication management by a licensed psychiatrist or nurse practitioner, case management, one-to-one and group counseling, and a variety of daily activities groups (e.g., recreational group, community affairs group, vocational preparation group, life skills group, world events group).

**Procedures**

All procedures were first approved by the institutional review boards of the university and the participating psychiatric facilities. The Bridge Program consisted of 12 classroom–lab modules that were held twice per week over 6 weeks. Module topics included the following:

- An exploration of training programs, degrees, and work options;
- Study skills for school or work;
- Time management skills for school or work;
- Effective reading skills for school and job training;
- Basic writing skills for school or job seeking;
- Basic computer skills;
- Introduction to Internet skills;
- Basic math skills for school and job placement tests;
- Use of library resources;
- Public speaking strategies for school or work;
- Professional behaviors and social skills; and
- Stress management skills for school or work (see Figure 1).

The modules consisted of an integration of lecture and lab activities through which participants could practice the skills they were learning. Each module lasted 2 hr with two 10-min breaks. The modules provided the opportunity for participants to enhance their basic educational knowledge and to practice the skills needed to succeed in postsecondary settings or job training programs (e.g., coming to class on time, comfortably interacting with instructors and peers, having the confidence to speak in front of others, independently completing homework assignments). Occupational therapy students instructed each module with faculty guidance.

An hour of one-to-one mentoring followed each 2-hr module. Each participant was paired with an occupational therapy student who became that participant’s mentor for the entire 6-week period. Mentors helped participants

- Maintain their motivation to remain in and complete the program,
- Apply skills learned in each module to the participant’s personal educational goals,
- Explore available educational and job training programs,
- Complete application forms for specific schools or training programs,
- Complete financial aid forms,
- Study for the GED or school or job placement tests, and
- Use customized compensatory strategies to enhance performance at school or work.

Mentoring was carried out under faculty supervision.
1. An Exploration of Training Programs, Degrees, and Work Options
This module helped participants to explore educational options and their connection to specific employment opportunities. GED courses, technical certification programs, adult community education courses, associate’s degrees, and bachelor’s degrees were discussed with regard to their requirements and financial expense. Participants were also provided with information about specific programs in the local metropolitan area offering these educational certifications and degrees. Mentors helped participants to directly contact specific educational programs to obtain further information or speak with school counselors.

2. Study Skills for School or Work
In this module, participants were taught various note-taking strategies and were provided with hands-on activities in which to practice these skills. Participants also practiced reviewing skills, using tape recorders in class, using organizational strategies (such as color-coded notes, notebooks, and folders), and using memory enhancers and mnemonic devices to memorize large amounts of material. Mentors helped participants to create a study space in their home environment (with consideration of room temperature, lighting, noise level, seating, and easy access to study materials). The benefits of study groups and strategies to reduce test anxiety were also examined. Participants additionally practiced skills needed to negotiate with roommates for desired quiet time.

3. Time Management Skills for School or Work
The goal of this module was to help participants learn to enhance their time use to succeed in the student role. Participants were provided with weekly schedule planners and were taught skills to plan daily activities. Such planning skills included information regarding how to (1) prioritize daily responsibilities and required activities; (2) balance work, school, family care, and leisure as an adult learner; (3) prepare for unexpected events that disrupt planned schedules; and (4) set clear beginning and end times for specific activities. Mentors also helped participants learn to recognize procrastination and complete needed activities.

4. Effective Reading Skills for School and Job Training
This module provided the opportunity for participants to practice the skills needed to efficiently read educational and training materials to extract the most salient points. Various reading and comprehension techniques were covered, along with the opportunity for hands-on practice sessions. Mentors helped participants learn how to preview reading assignments to better understand the overall goals and content of material. Strategies to improve memory and concentration while reading were reviewed and practiced (e.g., using colored highlighters, making notes in page margins, and creating outlines for reading assignments). Participants also discussed the benefits of scheduling breaks during reading sessions and learned how to modify their environment to enhance reading effectiveness (by considering noise level, lighting, seating position, room temperature, and environmental distractions).

5. Basic Writing for School or Job Seeking
In this module, participants practiced the skills needed to write a basic essay and cover letter. Skills included how to (1) write topic sentences; (2) write an introduction, body, and conclusion; and (3) use proper grammar and punctuation. Participants also practiced the techniques of brainstorming and outlining to gather and organize ideas for specific writing tasks. Mentors then helped participants to transfer these skills to specific writing activities desired by the participant—for example, writing an essay for a college application, writing an essay to apply for a desired internship or training program, and writing a cover letter to apply for a desired employment position.

6. Basic Computer Skills
This module provided a basic overview of computer skills because many participants had only limited prior computer skill experience. The module began with a review of the fundamental components of a computer (e.g., the screen, tower, keyboard, and mouse), followed by an overview of essential skills—for example, how to turn the computer on and off, how to create and save documents using Microsoft Word, how to save documents to the hard drive or portable storage device, and how to print documents. This module occurred in a university computer lab so that all participants could practice skills on a desktop computer as they received instruction on a large overhead screen. Mentors accompanied participants to provide one-to-one assistance.

7. Introduction to Internet Skills
In this module, participants had the opportunity to learn how to use the Internet as a resource for educational information and job searches. Participants practiced signing on, surfing, and exploring pertinent Internet sites. They also created their own Yahoo e-mail accounts and practiced sending and replying to messages. Participants were encouraged to exchange e-mail with each other and with mentors. For many, e-mail became a customary method through which they could communicate during the week. Participants also received instruction on remaining safe from risks such as phishing and identity theft. Like the computer module, the Internet module was carried out in a university computer lab to provide all participants with desktop computers on which to practice hands-on skills.

8. Basic Math Skills for School and Job Placement Tests
This module provided participants with a review of the basic math skills that may be found on the GED and on foundational college algebra courses and job placement tests (specifically those for state and government civil service positions). The intent of this module was to provide a refresher on such skills and identify areas in which participants required further assistance from mentors. Once such skill deficits were identified, mentors then helped participants to enhance their performance in specific calculation skills over the next week. Similar to the other modules, learning was facilitated through hands-on practice in activities and games.

9. Use of Library Resources
The goal of this module was to help participants understand how to use a library as a resource for school assignments and job searches. An overview of library resources was offered through a tour of university library premises. The Library of Congress system—the categorization system used by most colleges—was reviewed, and participants were offered the opportunity to search for an item with a specific call number. Participants were then encouraged to practice independently using the library computer catalogue and databases to search for and retrieve books or other resources of interest. Additionally, participants received instruction on applying for a member card at their local public library, and each participant’s neighborhood library was identified using an online database system.

10. Public Speaking Strategies for School or Work
In this module, participants learned the skills needed to speak comfortably in public situations—whether for class or work presentations, raising one’s hand to answer a question in class, or speaking with ease in a social peer group. Appropriate body language and gestures, eye contact, and articulation and rate of speech were all reviewed. The use of note cards and outlines were also explored as helpful techniques for public presentations. Participants were afforded the opportunity to practice public speaking techniques through a variety of in-class activities. Additionally, strategies to diffuse the anxiety of public speaking were explored and practiced.

11. Professional Behaviors and Social Skills
The intent of this module was to provide an overview of the professional behaviors and social skills needed to succeed in a school or work environment. Professional behaviors such as timeliness, appropriate dress and grooming, and eye contact and appropriate body language were reviewed. Skills needed to (1) speak with instructors, supervisors, and fellow employees; (2) work collaboratively with fellow students or employees; and (3) meet and socialize with new people and coworkers were also reviewed. Participants discussed the kinds of social situations that produce discomfort and role-played various scenarios to practice these skills. Additionally, strategies to resolve conflict at school or work were also practiced.

12. Stress Management Skills for School or Work
The goal of this module was to help participants better deal with the stress of being an adult learner in an academic environment or meeting the demands of a new worker role. The module covered (1) identifying one’s own stress response, (2) using specific techniques to reduce stress (such as meditation, visualization, and guided imagery), and (3) balancing one’s day to create time for relaxation. Participants had the opportunity to practice a variety of stress reduction techniques to determine which worked most effectively for their own personal needs.

Figure 1. Basic description of each of the 12 Bridge Program modules in the sequence in which they were provided
We invited all participants who successfully completed the Bridge Program and were actively involved in school reentry, job training, or work to receive mentoring for an additional 2-month period to help them successfully make the transition to the school or work environment.

Data Collection

We used a demographic form to collect information about gender, race or ethnicity, psychiatric diagnosis, highest educational level achieved, medication use, psychiatric history, marital status, and income level. The demographic form was completed by participants directly after they signed consent forms for study participation.

We administered the Participant Comfort With the Student Role Scale (Gutman et al., 2007) as a pre- and posttest survey. Control group participants completed this scale first on the day that consent forms were signed and then again during the final week of the study during treatment as usual at their mental health facilities. The experimental group participants completed this scale on the first and final days of the Bridge Program.

The TSS, ISS, and SBS (Schindler, 2004) are observational scales that were completed for all participants by a double-blinded investigator who knew neither the purpose of the study nor which participants were assigned to the control or experimental group. These scales were completed as pre- and posttest measures. The control group participants were observed during treatment as usual at their mental health facilities during the second and final weeks of the study. Experimental group participants were observed during the second and final week of the Bridge Program in the classroom setting.

We administered the Participant Overall Satisfaction Scale (Gutman et al., 2007) to the experimental group participants as a posttest scale on the final day of the Bridge Program. Because the scale requested that the participant assess specific aspects of the program, we did not administer it to control group participants.

We also administered pre- and posttests for each of the 12 modules to the experimental group participants. These were completed directly before and after the actual modules to determine whether the participants were able to learn the material presented.

We tallied the number of control and experimental group participants who enrolled in some form of educational training or who obtained employment at three points in time: the final day of the Bridge Program, 1 month after the program, and 6 months after the program. Contact was made through telephone calls. Follow-up data collection at 1 year is planned.

We administered the OT Student Comfort With a Mental Health Population Scale (Gutman et al., 2007) to the experimental group participants as a posttest scale on the final day of the Bridge Program. Follow-up data collection at 1 year is planned.

Qualitative data were collected through open-ended questions on the Participant Comfort With the Student Role Scale, the Participant Overall Satisfaction Scale, and the OT Student Comfort With a Mental Health Population Scale. These questions provided the opportunity for participants and occupational therapy students to express their opinions in narrative form (e.g., “How do you feel about being a student again?” [Participant Comfort With Student Role Scale]; “Which module was most helpful and why?” and “Which module was least helpful and why?” [Overall Satisfaction Scale]; “What are your general impressions about people with psychiatric disabilities and their ability to attain desired educational/employment goals?” [OT Student Comfort Scale]).

Data Analysis

We initially analyzed demographic data using frequency measures. To determine whether the experimental and control groups were demographically different at baseline, we used a Mann–Whitney U test to find existing differences among all ordinal-level demographic variables (Warner, 2008). We used a chi-square for nominal-level demographic variables.

We also statistically analyzed pretest measures using a Mann–Whitney U test to determine whether differences existed between the experimental and control groups’ pretest scores on four instruments: (1) Participant Comfort With the Student Role Scale, (2) TSS, (3) ISS, and (4) SBS. These scales collected nonparametric data. Because we found no differences at baseline between the experimental and control groups, we then used a Mann–Whitney U test to determine whether a statistically significant difference existed between the experimental and control group postscores on these four instruments.

We used paired t tests to determine whether a statistically significant difference existed between pre- and posttest for all of the 12 modules. We used the pre- and posttests to collect parametric data through 10 multiple-choice questions designed to determine whether the participants were able to learn the material presented in each module. To determine whether any demographic variables were correlated with successful completion of the program and enrollment in further education, we used a Spearman rho correlation coefficient.

We used a Wilcoxon signed-rank test to determine whether a statistically significant difference existed between
the occupational therapy students’ pre- and posttest scale responses on the OT Student Comfort With a Mental Health Population Scale (Warner, 2008).

We performed semantic analysis to analyze and compile patterns in participant narrative responses to all open-ended questions on the Participant Comfort With the Student Role Scale, Participant Overall Satisfaction Scale, and the OT Student Comfort With a Mental Health Population Scale.

Results

The participants were 38 adults with psychiatric disabilities who ranged in age from 19 to 55 (22 men and 16 women). Most participants were Hispanic \( n = 15; 39\% \), African-American \( n = 14; 37\% \), and White \( n = 8; 21\% \). Psychiatric diagnoses included schizophrenia \( n = 16; 42\% \), schizoaffective disorder \( n = 11; 29\% \), bipolar disorder \( n = 6; 16\% \), and depression \( n = 5; 13\% \). Approximately 56% \( n = 21 \) of participants reported that they had been hospitalized at least once because of their illness. Eleven (29%) participants reported that they had not required hospitalization for their illness in the past 5 years. The majority of participants \( n = 25; 68\% \) reported that they had been hospitalized one to two times for their illness in the past 5 years. The highest educational level most participants achieved was a high school diploma or GED \( n = 20; 53\% \). Eight participants reported that they completed some college \( n = 8; 21\% \). Another 8 participants \( 21\% \) reported that they did not complete high school. Two participants \( 5\% \) had been able to earn a college degree.

A Mann–Whitney \( U \) test found no statistically significant differences between experimental and control group demographic variables \( p > .05 \). Demographic variables included gender, race and ethnicity, diagnosis, educational level, income, marital status, parents’ educational level, age of illness onset, and number of hospitalizations in the past 5 years.

A Mann–Whitney \( U \) test found no statistically significant differences between experimental and control group pretest scores on the Participant Comfort With the Student Role Scale, TSS, ISS, and SBS \( p > .05 \). We found a statistically significant difference, however, between experimental and control group posttest scores on the Participant Comfort With the Student Role Scale, TSS, ISS, and SBS \( p \leq .000 \). Paired \( t \) tests found statistically significant differences between pre- and posttest scores for all 12 modules taught in the Bridge Program (see Table 1).

We used a Spearman rho to determine which factors correlated with success in the program (success was defined as the ability to complete the program and enroll in further school or job training). One factor that correlated highly with success was whether the participant was able to consistently adhere to a medication routine \( r = .70, p \leq .000 \).

Participants who decided to stop their medication or who experienced gaps in medication administration (i.e., failure to renew prescriptions in a timely manner) were less likely to complete the program and pursue desired educational goals. Having a stable residence (without fear of eviction or threat of homelessness) also significantly correlated with success in the program \( r = .64, p < .001 \). Participants who had only temporary shelter or who were forced to leave a familiar residence during the program were less likely to complete the program. Residential disruption was almost always followed by study dropout. Participants who had moderate child care responsibilities were significantly less likely to complete the program \( r = .62, p < .001 \). This finding suggests that this population would benefit from child care assistance to pursue educational goals. The ability to attain higher education and work skills would then increase the likelihood that parents could provide children with a higher quality of life.

The factor having the strongest correlation with success in the program was consistent program attendance \( r = .84, p \leq .000 \). Participants who demonstrated consistent attendance and motivation to participate in classroom activities and mentoring were those most likely to complete the program and enroll in school or job training.

No statistically significant correlations were found between success and educational level of participants or their parents, age of illness onset, or number of hospitalizations in the past 5 years. It is likely that having strong family support may correlate with success; however, we were not able to assess this factor because the majority of participants reported having little direct involvement with immediate family members. Family involvement that was reported tended to be strained and was sometimes a cause of conflict.

Table 1. Statistically Significant Differences Between Pre- and Posttest Scores for Each of the 12 Modules

<table>
<thead>
<tr>
<th>Module</th>
<th>( p )</th>
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<tbody>
<tr>
<td>1. Exploration of training programs, degrees, and work options</td>
<td>( \leq .000 )</td>
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<tr>
<td>2. Study skills for school or work</td>
<td>( \leq .000 )</td>
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<tr>
<td>3. Time management skills for school or work</td>
<td>( \leq .000 )</td>
</tr>
<tr>
<td>4. Effective reading skills for school and job training</td>
<td>( \leq .000 )</td>
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<tr>
<td>5. Basic writing skills for school or work</td>
<td>( \leq .000 )</td>
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<tr>
<td>6. Basic computer skills</td>
<td>( &lt; .01 )</td>
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<tr>
<td>7. Introduction to Internet skills</td>
<td>( &lt; .01 )</td>
</tr>
<tr>
<td>8. Basic math skills for school and job placement tests</td>
<td>( \leq .000 )</td>
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<tr>
<td>9. Use of library resources</td>
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</tr>
<tr>
<td>12. Stress management skills for school or work</td>
<td>( \leq .000 )</td>
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</table>
Sixteen (76%) of the 21 experimental group participants completed the Bridge Program. At a 6-month follow-up, 10 (63%) of these 16 had enrolled in some form of educational program or job training, had obtained employment, or were in the process of applying to a specific program in the next year (see Table 2). In their Overall Satisfaction Scale responses, participants expressed that the Bridge Program had prepared them for further education and job pursuit by teaching them needed skills and helping them gain the confidence to test their abilities in the school and work environments. Only 1 (6%) of the 17 control group participants reported being presently involved in school coursework.

We performed a Wilcoxon signed-rank test to determine whether the occupational therapy students experienced an increase in comfort level with people with psychiatric disabilities after participating in the Bridge Program. Sixteen students participated in the program as instructors and mentors and completed the OT Student Comfort With a Mental Health Population Scale both before and after the program. At posttest, these students showed a statistically significant increase in comfort level ($p < .01$). Before participating in the program, students reported that they feared people with psychiatric disabilities and were uncertain whether occupational therapy could help this population to pursue student and worker roles. After their participation, students reported that they now viewed people with psychiatric disabilities as “regular people who need assistance just as others with disability do.” Students reported that they better understood how intervention could help this group to become contributing members of society who could more fully participate in desired roles. Some students expressed that they were now considering entering mental health practice on graduation.

**Discussion**

The results support the effectiveness of the Bridge Program and suggest that the program helped participants to increase their skill level in basic academic areas, improve professional behaviors and social skills needed for school and work settings, and gain the confidence to test their skills in the larger community. Factors that correlated most with success in the program included adherence to a medication routine, possession of a stable residence, and motivation to attend the program regularly. Prior education level, number of hospitalizations in the past 5 years, age at illness onset, and parental education level had no relationship to success in the program.

Because the college setting is a highly esteemed, nonstigmatizing environment, supported education programs on college campuses can uniquely help mental health consumers to gain the skills needed to more fully participate in desired community member roles. The student role is highly valued in the larger society, and mental health consumers who assume this role through supported education programs report enhanced confidence and self-esteem (Knis-Matthews et al., 2007). Participants in supported education programs report that they begin to view themselves not singularly by their psychiatric disability but by their role as functioning, productive members of the community.

This study also demonstrates that occupational therapists can uniquely contribute to the development and provision of supported education services. Occupational therapists have expertise in

- Designing compensatory strategies and accommodations that can enhance functional performance in school and work settings;
- Using activity analysis and synthesis to break down cognitive and psychosocial skills into smaller components that can be progressively increased with client mastery; and
- Helping people to newly assume or resume desired occupational roles through enhanced performance in the activities, habits, and routines that support desired roles.

This population critically needs such expertise because the completion of higher education or job skill training is intimately linked to economic and social independence in adulthood.

Occupational therapy clinical guidelines should be developed to provide supported education services for a population of adults with psychiatric disabilities. Such clinical guidelines can then be tested and replicated using experimental design to build a body of evidence that can support the efficacy of such services. By ensuring that supported education services for people with psychiatric disabilities becomes routine and customary—as it has for people with physical and learning disabilities—occupational therapists can make a valuable contribution to this population while strengthening the profession’s footing in mental health practice.

This study also demonstrates that occupational therapy students can become more comfortable working with people with psychiatric disabilities when they are provided with clinical experiences through which they have the opportunity

<table>
<thead>
<tr>
<th>Type of Educational or Job Pursuit</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolled in a college course</td>
<td>2</td>
</tr>
<tr>
<td>Applied to college for next academic semester</td>
<td>1</td>
</tr>
<tr>
<td>Enrolled in an adult education course at a community center</td>
<td>2</td>
</tr>
<tr>
<td>Obtained paid employment</td>
<td>1</td>
</tr>
<tr>
<td>Completed a GED prep course and applied to take GED</td>
<td>2</td>
</tr>
<tr>
<td>Enrolled in a technical training certification program</td>
<td>2</td>
</tr>
</tbody>
</table>
to observe clients in the context of a normalized setting, learn to adapt cognitive and psychosocial activities to facilitate functional performance in the community, and can directly observe the positive results of their assistance as clients make progress toward desired goals. The fear and stigma of mental illness decline as students directly observe that psychiatric disability is similar to any other illness that requires both medication stabilization and intervention to enhance functional performance in desired occupational roles.

**Study Limitations**

One limitation of this study was the small sample size. This limitation is lessened by the existence of similar studies demonstrating the effectiveness of supported education services for adults with psychiatric disabilities (Leonard & Bruer, 2007). Although several studies have demonstrated supported education services, few have been randomized, controlled trials. Because this study used randomization and control, it uniquely contributes to the growing body of literature promoting supported education programs for adults with psychiatric disabilities. Replication of this study with a larger sample size is needed to generalize findings.

Another limitation was the lack of reliability and validity data for the 12 pre- and posttests used to determine whether learning occurred in each of the 12 academic modules. Although we developed the pre- and posttests on the basis of literature reviews that identified the salient information to address for each topic, it is not clear whether they truly assessed the complete range of content for each topic. Moreover, because the pre- and posttests were administered directly before and directly after each module, it is not clear whether new learning was long lasting. This limitation, however, was lessened by the finding that the other four scales (i.e., TSS, ISS, SBS, and Participant Comfort With the Student Role Scale) used to determine whether participants improved in educational skills possessed high levels of reliability or validity and found a statistically significant improvement from pre- to postprogram. Although the 12 pre- and posttests for each academic module did not possess reliability and validity data, the effectiveness of the Bridge Program was strengthened by the high number of participants who completed it and pursued further educational or vocational programs. The program’s effectiveness was also strengthened by the finding that statistical significance for all outcome measures was obtained using multiple instruments with varied designs (i.e., pre- and posttests, rating scales, and self-reports). Additionally, the qualitative data that were collected supported findings obtained through quantitative analysis.

A third limitation involved the length of time over which follow-up data collection occurred. Data were collected at 1- and 6-month follow-up points. Despite the high number of participants who were able to engage in school or work pursuit at the 6-month follow-up, it is not clear whether they will be able to maintain gains over a longer time period. Data collection at a 1-year follow-up is planned.

**Future Directions**

As mentioned earlier, 1-year follow-up data collection will determine whether the participants were able to maintain the gains made through the Bridge Program. Studies are also planned to assess the effectiveness of the program with a population of people with traumatic brain injury, continue assessment of the program with a psychiatric population, and assist community mental health facilities as they implement the program in collaboration with local colleges.

Future study of the Bridge Program model should also involve a comparison of the effectiveness of one-to-one mentoring with that of the 12 academic modules. Such information would provide feedback necessary to refine the program’s supported education paradigm. It is possible that although one-to-one mentoring may be necessary because it addresses specific participant needs in a customized way, the entire 12 academic modules may not be required by all participants. Instead, participants may require help only in selecting the specific academic modules personally needed, thereby reducing staffing needs and program expenses. Long-term follow-up studies are also needed to determine whether supported education services have lasting effects on participants’ ability to live independently, assume desired community member roles, and engage in social participation. Such evidence is essential to secure funding and resources for supported education services for people with psychiatric disabilities, just as such services have been secured for people with physical and learning disabilities.

**References**

Auerbach, E. S. (2001). The individual placement and support model vs. the menu approach to supported employment: Where does occupational therapy fit in? *Occupational Therapy in Mental Health*, 17(2), 1–19.
Scale (SLOF) and the Task Skills Scale and the Occupational
Therapy Task Observation Scale (OTTOS). Unpublished
master’s thesis, Richard Stockton College of New Jersey,
Pomona.

Gutman, S. A., Schindler, V. P., Furphy, K. A., Klein, K., Lisak,
J. M., & Durham, D. P. (2007). The effectiveness of a sup-
ported education program: The Bridge Program. Occupational
Therapy in Mental Health, 23(1), 21–38.

Hutchinson, D., Anthony, W., Massaro, J., & Rogers, E. S.
(2007). Evaluation of a comorbid supported computer edu-
cation and employment training program for persons with
psychiatric disabilities. Psychiatric Rehabilitation Journal, 30,
189–197.

Individuals With Disabilities Education Improvement Act of

Kielhofner, G. (2004). Conceptual foundations of occupa-

application (3rd ed.). Baltimore: Williams & Wilkins.

Knis-Matthews, L., Bokara, J., DeMeo, L., Lepore, N., & Mavus,
L. (2007). The meaning of higher education for people diag-
nosed with a mental illness: Four students share their experi-

strategies for people with severe mental illness: A review of
evidence-based practice. International Journal of Psychosocial

Margolis, R. L., Harrison, S. A., Robinson, H. J., & Jayaram,
G. (1996). Occupational Therapy Task Observation Scale
(OTTOS): A rapid method for rating task group psychia-
tric patients. American Journal of Occupational Therapy, 50,
380–385.

Moll, S., Huff, J., & Detwiler, L. (2003). Supported employ-
ment: Evidence for a best practice model in psychosocial
rehabilitation. Canadian Journal of Occupational Therapy, 70,
298–310.

Thorofare, NJ: Slack.

Mosey, A. C. (1986). Psychosocial components of occupa-
tional therapy. New York: Raven Press.

Mowbray, C. T. (2004). Supported education: Diversity, essen-
tial ingredients, and future directions. American Journal of

Mowbray, C. T., Collins, M. E., Bellamy, C. D., Megivern, D. A.,
adults with psychiatric disabilities: An innovation for social
work and psychosocial rehabilitation practice. Social Work,
50, 7–20.

Oka, M., Otsuka, K., Yokoyama, N., Mintz, J., Hoshino, K.,
Niwa, S., et al. (2004). An evaluation of a hybrid occupa-
tional therapy and supported employment program in Japan for
persons with schizophrenia. American Journal of Occupational
Therapy, 58, 466–475.

§ 701 et seq.

Schindler, V. P. (2004). Occupational therapy in forensic psy-
chiatry: Role development and schizophrenia [Special issue].
Occupational Therapy in Mental Health, 20(3/4), 1–165.

Schindler, V., Gutman, S., Knis-Matthews, L., Richard, L.,
Annual Program: Supported education—Programs and outcomes
for individuals diagnosed with mental illness. Workshop pre-
sented at the American Occupational Therapy Association’s
87th Annual Conference, St. Louis, MO.

erating scale for assessing the mentally ill. Social Work Research
and Abstracts, 19, 9–21.

Smith-Osborne, A. (2005). Antecedents to postsecondary educa-
tional attainment for individuals with psychiatric disorders: A

Stern, K. (2006, May). Pathways to Success: A supported educa-
tion program for adults with psychiatric disabilities. Paper pre-
sented at Mental Health Partnerships of New Jersey, Kean
University, Union.

with mental illness. Australian e-Journal for the Advancement of
Mental Health, 4(Suppl. 2). Retrieved January 17, 2008, from
www.auseinet.com/journal/vol4iss2suppl/waghornlloyd.pdf


Wilmington, DE: Author.

(2004). A supported employment program for people with
mental illness in Hong Kong. American Journal of Psychiatric
Rehabilitation, 7, 83–96.