

# Consumer Empowerment and Self-Advocacy Outcomes in a Randomized Study of Peer-Led Education

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**Abstract** This study examined the effectiveness of the Building Recovery of Individual Dreams and Goals (BRIDGES) peer-led education intervention in empowering mental health consumers to become better advocates for their own care. A total of 428 adults with mental illness were randomly assigned to BRIDGES (intervention condition) or a services as usual wait list (control condition). Interviews were conducted at enrollment, at the end of the intervention, and 6-months post-intervention. Random regression results indicate that, compared to controls, BRIDGES participants experienced significant increases in overall empowerment, empowerment-self-esteem, and self-advocacy-assertiveness, and maintained these improved outcomes over time. Peer-led education interventions may provide participants with the information, skills and support they need to become more actively involved in the treatment decision-making process.

**Keywords** Peer-led education interventions · Consumer empowerment · Patient self-advocacy · Recovery education

## Introduction

Despite federal mandates for client-driven services (New Freedom Commission on Mental Health 2003), mental health consumers commonly report concerns about their involvement in decisions regarding their treatment. These issues include the lack of opportunities to discuss treatment options with service providers; clinicians' disregard of consumers' questions about their care; and disagreements with providers about the amounts and types of services needed (Crane-Ross et al. 2000; Fischer et al. 2002; Pyne et al. 2006; Roth et al. 1998). Individuals who feel that providers ignore their efforts to talk about their treatment, and/or that their opinions about their mental health care are discounted by professionals, are less likely to follow prescribed treatment regimens (Byerly et al. 2007; Cooper-Patrick et al. 1999; Roth and Crane-Ross 2002).

Several factors may contribute to consumers' problematic interactions with treatment providers. In general, physicians are viewed as having power and control over patients, and determine what treatments are best (Brasher et al. 1999; Guttman 1993). As a result of this perceived power imbalance, most patients are reluctant to ask questions during medical visits (Roter and Frankel 1992). Mental health consumers may feel that it is inappropriate to ask their providers questions, or may be afraid that clinicians will think that they are challenging their authority. A lack of knowledge about mental illness, including its etiology, prognosis and standard treatments may prohibit consumers from discussing concerns with their providers. Finally, the stigma associated with mental illness may prevent consumers from asking questions because they do not want to hear or think about what the future may now hold for them (Brashers 1995).

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Empowering mental health consumers to become better advocates for their own care—that is, helping them become more actively involved and in control of their treatment decision-making process—leads to positive outcomes that may facilitate recovery. As Schutt and Rogers (2009) note, empowerment in mental health service settings involves consumers and providers working together as partners to develop treatment plans; giving consumers power, authority and control over their treatment; and equipping them to ask questions and assert themselves on their own behalf (Ralph 2000). Studies show that empowerment is associated with several key recovery outcomes, including increased self-esteem, self-efficacy, confidence and optimism for the future (Corrigan et al. 1999; Zimmerman 1990) as well as greater treatment retention and satisfaction (Alegria et al. 2008; Roth and Crane-Ross 2002).

Brashers (1999) posit that there are three components that are critical to effective patient self-advocacy. First, individuals must educate themselves about their illness, and believe that “knowledge is power”, i.e., that having increased information about their illness and recommended treatments enables them to engage in successful, mutual exchanges with providers about their health care. Second, this education base helps increase individuals’ assertiveness: an increased willingness to ask questions and challenge providers’ authority, thereby enhancing their participation in the treatment decision-making process. Third, greater knowledge and assertiveness leads to mindful non-adherence in which individuals make reasoned, rational choices not to follow prescribed treatment plans. For example, based on information and discussions with his provider, a consumer may decide not to participate in vocational training program that does not offer him the skills he needs to find a job. Together, these components enable consumers to actively engage in a shared decision-making process in which they openly collaborate and communicate preferred treatment choices with providers (Adams et al. 2007; Brashers et al. 1999; Hamann et al. 2006). High levels of patient self-advocacy are associated with several recovery indicators, including greater hopefulness, decreased psychiatric symptoms, and greater willingness to engage in services (Jonikas et al. 2011; Loh et al. 2007; O’Neal et al. 2008).

Participating in education programs that provide information on mental illness and treatment options, recovery principles, and self-help skills may enhance empowerment and increase consumers’ confidence in their ability to take a more active role in their own mental health care (Campbell 2005; Onken 2004). Peer-led education interventions—programs delivered by individuals who publicly acknowledge their own mental illness—may be particularly effective in improving consumer empowerment and self-advocacy. In peer-led programs, participants receive

informational resources, and instrumental and emotional support from instructors who share similar experiences. Solomon (2004) notes that participation in peer-led programs helps foster change through interactions with credible role models who have “been there” and understand the challenges of living with a mental illness. These programs also offer opportunities for sharing the experiential knowledge and social support that help participants identify solutions to common problems and practice making informed choices (Salzer and Shear 2002; Schutt and Rogers 2009).

Little rigorous research has examined the effect of peer-led education program participation on consumer empowerment and self-advocacy. Rogers et al. (2007) examined outcomes for participants in the federally-funded consumer-operated service programs (COSP) study of eight peer-led services, including the peer-led education intervention that is the focus of the present study. COSP participants were randomly assigned to receive either peer-led services plus traditional mental health services (intervention group) or only traditional mental health services (control group). Participants who received peer-led services reported higher levels of empowerment than control group participants. Similarly, consumers who received a 12-week recovery education program taught by a peer and professional instructor dyad had significant increases in feelings of empowerment and hopefulness compared to those who received only assertive community treatment services (Barbic et al. 2009).

The Building Recovery of Individual Dreams and Goals (BRIDGES) is an 8-week, peer-led education course designed to empower mental health consumers by providing them with basic education about the etiology and treatment of mental illness, self-help skills and recovery principles, and peer support. Developed in 1995, BRIDGES is the result of a collaborative effort of mental health consumers, family members, and state administrators to respond to the requests of consumers in Tennessee for peer-provided practical information on the causes and treatment of mental illness (Diehl and Baxter 2002). The program is administered by the Tennessee Mental Health Consumers Association (TMHCA), and has been implemented in 11 states, Canada and England.

BRIDGES program components impart information and skills that may enhance participants’ empowerment and self-advocacy. The course teaches consumers about the biological causes of mental illness; the medications used to treat symptoms and common medication side-effects; and mental health treatment services. The self-advocacy component focuses on how to talk with providers, discuss preferred treatment options, and establish collaborative relationships. These self-advocacy skills are reinforced in problem-solving and communication skills training

exercises aimed at reducing negative coping behaviors. While prior studies of BRIDGES participants found that, post-participation, consumers reported increased empowerment and self-advocacy (Pickett et al. 2010; Rogers et al. 2007), no research to date has rigorously tested the effect of BRIDGES participation on these outcomes. The present study addresses this knowledge gap via a randomized controlled trial designed to examine the effectiveness of BRIDGES in improving consumer empowerment and self-advocacy. We hypothesize that, compared to control group participants, BRIDGES participants would experience greater increases in empowerment and self-advocacy, and would maintain improvement in these outcomes over time.

## Method

### Procedures

The Efficacy of Peer-Led Education in Improving Mental Health Recovery Outcomes project was a 3-year federally-funded study that examined the effectiveness of the BRIDGES course in improving mental health consumers' recovery outcomes. The study was conducted in eight sites in Tennessee: Chattanooga, Cookeville, Dickson, Gallatin, Knoxville, Nashville, Memphis, and Oak Ridge. Sites were selected for study participation based on the number of experienced BRIDGES teachers available to teach the course and the number of community mental health agencies that had not previously provided the program to its clients. All study procedures were approved by the authors' university Institutional Review Board. The study was registered at ClinicalTrials.gov under identifier NCT01297985, and all hypotheses, outcomes and statistical analyses described in this manuscript were pre-specified at the time the proposal was submitted to the federal government for funding consideration.

### Recruitment

Participants were recruited from March 2007–2009 by local study coordinators from NAMI-Tennessee and TMHCA. Eligibility criteria included: (1) being age 18 or older; (2) having a serious mental illness (SMI) meeting federal criteria for SMI based on diagnosis, duration, and level of disability stipulated by Public Law 102–321 requiring the person to have at least one 12-months disorder other than substance use disorder that meets DSM-IV criteria (American Psychiatric Association 2000; Epstein et al. 2002); (3) receiving public-funded outpatient mental health services; (4) willing and able to provide informed consent; (5) ability to understand spoken English; and (6) never having taken a BRIDGES education course.

Recruitment activities took place in community mental health centers, consumer-run drop-in centers, outpatient clinics, and homeless shelters. The local study coordinators gave presentations about BRIDGES and research study randomization and interview procedures to clients at these service delivery sites, distributed flyers describing the research project, and encouraged interested individuals to call the project office's toll-free telephone number. Individuals who contacted the project office were screened for eligibility by study staff. During this screening, individuals were reminded that if they agreed to participate in the project, they would be randomly assigned to an upcoming BRIDGES course (intervention group) or to a course waiting list. Those who declined study participation were referred to local peer support services. Individuals who met eligibility criteria and who agreed to take part in the project were sent informed consent documents, which they then signed and returned to the project office.

### Interview Procedures

Structured one-hour telephone interviews were conducted by University of Illinois at Chicago (UIC) Survey Research Laboratory (SRL) research staff at three time points. Time 1 (T1) interviews occurred in the month prior to the start of BRIDGES classes; Time 2 (T2) interviews took place at the conclusion of the course; and Time 3 (T3) interviews occurred 6 months post-T2. Participants received \$20 for completing T1 interviews; \$25 for T2 interviews; \$30 for T3 interviews; and a \$10 bonus for completing all three interviews. Interviews were conducted via computer-assisted personal interview (CAPI) software.

### Randomization

Participants were recruited, enrolled and randomized in five waves from March 2007–2009. Randomization was performed by UIC SRL research staff at the end of each T1 interview. A random allocation sequence programmed into the CAPI administration software blinded both interviewers and participants to subjects' study assignment (Glued 2006). To monitor the integrity of the blind, interviewers were asked at the end of each follow-up interview whether subjects had directly or indirectly shared their study status; this occurred in only 7.2 % of all T2 and T3 interviews. A total of 428 participants completed T1 interviews: 212 were randomly assigned to the intervention group, and 216 were randomly assigned to the control group.

### Sample

Participants' demographic and psychiatric illness characteristics are presented in Table 1. The majority of

**Table 1** Participant demographic and psychiatric illness characteristics

	Total (N = 428) N (%)	Intervention (n = 212) <sup>a</sup> N (%)	Control (n = 216) <sup>a</sup> N (%)
<b>Sex</b>			
Male	190 (44.4)	98 (46.2)	92 (42.6)
Female	238 (55.6)	114 (53.8)	124 (57.4)
<b>Age in years (mean, SD)</b>			
	42.8 (10.9)	42.7 (9.9)	43.0 (11.8)
<b>Race/ethnicity</b>			
Caucasian	229 (53.5)	112 (52.8)	117 (54.2)
Black	146 (34.1)	75 (35.4)	71 (32.9)
Hispanic/Latino	18 (4.2)	10 (4.7)	8 (3.7)
Asian/Pacific Islander	1 (0.2)	1 (0.5)	0
American Indian/Alaskan	25 (5.8)	10 (4.7)	15 (6.9)
Other	7 (1.6)	3 (1.3)	4 (1.8)
<b>Education</b>			
<High school	129 (30.1)	67 (31.6)	62 (28.7)
High school/GED	173 (40.4)	79 (37.3)	94 (43.5)
Some college or greater	126 (29.4)	66 (31.1)	60 (27.8)
<b>Lives in own home/Apt.</b>			
	205 (47.9)	104 (49.1)	101 (46.8)
<b>Employed</b>			
	38 (8.9)	20 (9.4)	18 (8.3)
<b>Ever psychiatric inpatient Tx</b>			
	312 (72.9)	151 (71.2)	161 (74.5)
<b>DSM-IV diagnosis</b>			
Schizophrenia	66 (15.4)	37 (17.5)	29 (13.4)
Schizoaffective	23 (5.4)	9 (4.2)	14 (6.5)
Bipolar	169 (39.5)	85 (40.1)	84 (38.9)
Depressive	77 (18.0)	38 (17.9)	39 (18.1)
Other	37 (8.6)	15 (6.9)	22 (10.0)
<b>Services received T1–T2*</b>			
Case management	223 (52.1)	110 (51.9)	113 (52.3)
Medication management	243 (56.8)	119 (56.1)	124 (57.4)
Individual therapy	190 (44.4)	88 (41.5)	102 (47.2)
Group psychotherapy	80 (18.7)	52 (24.5)	28 (13.0)
Employment services	66 (15.4)	35 (16.5)	31 (14.4)
Residential services	76 (17.8)	38 (17.9)	38 (17.6)
Substance abuse treatment	21 (4.9)	8 (3.8)	13 (6.0)
<b>Study site</b>			
Chattanooga	97 (22.7)	48 (22.6)	49 (22.7)
Knoxville	67 (15.7)	33 (15.6)	34 (15.7)
Memphis	87 (20.3)	43 (20.3)	44 (20.4)
Nashville	87 (20.3)	44 (20.8)	43 (19.9)
Dickson	20 (4.7)	10 (4.7)	10 (4.6)
Gallatin	25 (5.8)	12 (5.7)	13 (6.0)
Oak Ridge	34 (7.9)	17 (8.0)	17 (7.9)
Cookeville	11 (2.6)	5 (2.4)	6 (2.8)

Variations in n due to missing data

\* T1 = study baseline; T2 = 2-months follow-up

<sup>a</sup> Chi-square and analysis of variance tests revealed no significant differences by study condition

participants were female (55.6 %) and Caucasian (53.5 %). Participants had a mean age of 42.8 years. Most (40.4 %) had earned their high school diploma or General Equivalency Degree, and nearly a third (29.4 %) had attended college. Slightly less than half (47.9 %) lived independently in their own home or apartment. Few participants

(8.9 %) were employed. The most common primary psychiatric diagnosis reported by participants was bipolar disorder (39.5 %), followed by depression (18 %) and schizophrenia (15.4 %). The majority of participants reported receipt of medication management (56.8 %) and case management (52.1 %) services. There were no

statistically significant differences in participant demographic or psychiatric illness characteristics by study condition.

### BRIDGES Intervention

As described in detail elsewhere (Pickett et al. 2010), BRIDGES is an 8-week, manualized peer-led education course designed to empower adults with psychiatric disabilities and enhance their recovery. The curriculum was created by TMHCA and NAMI-Tennessee staff and volunteers, and is routinely reviewed by experts to ensure that current, accurate information is delivered. Topics covered in the BRIDGES curriculum include: self-advocacy; communication and problem-solving skills; philosophy of recovery; social support; psychiatric diagnoses, medications and mental health treatment; and crisis planning. BRIDGES classes are held in a variety of publicly-accessible settings, including libraries, churches, community mental health centers, and consumer-operated programs. BRIDGES classes range in size from 12 to 15 participants, and classes and course materials are free to participants. Instructors deliver class materials via scripted lectures, group exercises, personal examples from their own experiences, and group discussion. At the end of each class, participants are encouraged to share their own recovery stories.

### *Intervention Implementation and Instructors*

The BRIDGES course was taught simultaneously to intervention group participants across study sites, with five waves of classes delivered over the 3 years of the project. In each wave, at each site, BRIDGES was taught once a week for eight consecutive weeks, and each class was 2.5 h long. Classes were taught by a team of two trained instructors who publicly acknowledge that they are in recovery from a mental illness. A third trained “back-up” instructor assisted with activities and served as a substitute teacher, as needed. All instructors were experienced BRIDGES teachers, and were selected by the study’s local coordinators. At all sites, one or both of the lead facilitators delivered BRIDGES each time it was offered, with the following exceptions. Three of the eight sites delivered BRIDGES five times; one site delivered the intervention four times; two sites taught BRIDGES twice, and two sites each delivered BRIDGES once. Variation in the number of times that the intervention was delivered across sites was due to limited availability of experienced BRIDGES instructors at some sites (e.g., Cookeville and Dickson). All study instructors completed an intensive two and a half day training session led by the researchers and local study coordinators (all of whom were either co-creators of the BRIDGES curriculum and/or experienced BRIDGES

teachers). Held prior to intervention implementation, this training included rigorous review and practice of the standard instruction procedures for each of the eight BRIDGES classes; detailed information on research purpose and procedures; and training on class fidelity assessment and attendance tracking procedures.

### *Intervention Fidelity*

In keeping with the NIH Behavior Change Consortium’s recommendations for enhancing treatment fidelity in behavioral research (Bellg et al. 2004), fidelity was assessed each week that BRIDGES classes were taught. Instructors’ adherence to prescribed curriculum topics and teaching methods were assessed via the BRIDGES fidelity assessment, a detailed checklist developed by one of the curriculum authors and the study investigators. Within 48 h of each class session, local coordinators telephoned instructors and completed the fidelity assessment for that session to determine adherence to the content prescribed for that class. Each component was scored 1 if the prescribed element occurred (e.g., handouts were distributed, a scripted lecture was read, a group discussion was facilitated) and 0 if otherwise (e.g., handouts were not distributed, the lecture was not read, no group discussion was led). The local coordinators emailed completed fidelity logs to the study investigators. Fidelity assessment scores were reviewed with each individual instructor, and in weekly group conference calls convened by the researchers and local study coordinators. During these calls, each site’s attendance and fidelity scores were discussed, and procedures to ensure that any missed material was covered in subsequent session were reviewed. Instructors shared any problems they encountered in delivering BRIDGES course materials, and the group offered potential solutions to resolve these issues. The upcoming week’s session topics and teaching methods also were discussed in these weekly fidelity teleconferences. Fidelity scores were computed as the proportion of prescribed elements present for that class session. Across all classes taught in all waves, total BRIDGES course fidelity ranged from 92.7 to 98.6 %, with a mean of fidelity score 95.1 % (SD = 0.04). There were no significant differences in course fidelity by wave ( $F_{(4,19)} = 2.45, p = .082$ ) or by study site ( $F_{(7,16)} = 1.60, p = .207$ ). Overall, results indicated excellent intervention fidelity.

### *Intervention Attendance Rates*

Instructors completed attendance logs for intervention group participants after each BRIDGES class. Since each BRIDGES session builds on learning from the previous session, it is standard BRIDGES program procedures for instructors to help participants who miss a class by

reviewing what they missed before the next session. Instructors telephone absent students, discuss the session outline, review materials, summarize class discussion, and answer participants' questions about the session. Attendance was coded as 1 if the participant was present (either in-person or by make-up over the telephone) and 0 if the participant was absent. Total attendance was computed by summing attendance scores for each participant. On average, participants attended 5 of 8 classes ( $M = 4.86$  classes,  $SD = 3.33$ ), and there were no significant differences in attendance by wave ( $F_{(4,207)} = 2.10, p = .0821$ ). However, there were significant differences in attendance by site ( $F_{(7,204)} = 4.75, p = .000$ ), with mean attendance rates ranging from 3.73 classes at one site (Nashville) to 8.00 classes at another (Dickson).

### Control Group

As described above, a total of 216 participants were randomly assigned to a BRIDGES course waiting list (control condition) and were guaranteed an opportunity to receive BRIDGES from the study after completing their third and final interview. During their participation in the project, control group participants received services as usual, i.e., the same treatment they were receiving when they enrolled in the study. Table 1 shows that the most common services reported by control group participants included medication management (57.4 %), case management (52.3 %) and individual therapy (47.2 %). There were no statistically significant differences between control group and intervention group participants on any of these services.

No BRIDGES classes were offered outside of the study in any of the sites during the intervention or 6-months follow-up period; thus, the intervention was not available to any control group participants. However, to ensure that they were not deprived of any needed resources, control group participants—as well as intervention group participants—could and did attend non-BRIDGES peer-led mental health support groups. There were no significant differences in control and intervention group participants' use of these services. Between T1 and T2, 81 (47.1 %) control group participants and 96 (56.1 %) intervention group participants attended non-BRIDGES peer-led mental health support groups ( $X^2_1 = 2.81, p = .094$ ). Between T2 and T3, 79 (48.5 %) of control group participants and 87 (55.4 %) of intervention group participants reported use of non-BRIDGES peer-led mental health support groups ( $X^2_1 = 1.55, p = .214$ ).

### Measures

The study protocol assessed several recovery outcomes at each interview time point. Participant demographic and psychiatric illness characteristics and service use also were

obtained during interviews. For the purposes of this article, we report results only for the empowerment and self-advocacy outcomes.

### Empowerment

We used the 28-item Empowerment Scale (Rogers et al. 1997) to assess participants' feelings of empowerment in mental health service settings. This measure contains five subscales that assess factors associated with empowerment: self-esteem-self-efficacy (nine items); power-powerlessness (eight items); community activism (six items); optimism and control over the future (four items); and righteous anger (four items). Participants were asked to rate their agreement with each item along a 4-point Likert scale, with 1 = strongly agree to 4 = strongly disagree. Items were summed together to create the total empowerment score; items in each subscale were summed to create each respective empowerment domain. Lower scores indicate greater feelings of overall empowerment, self-esteem, actual power to influence change, optimism, and righteous anger, respectively. Mean scores for the empowerment measures at each time point are presented in Table 2. Cronbach's alphas across the three interview time points for the composite scale ranged from 0.76 to 0.78. For the empowerment subscales, reliability scores for self-esteem ranged from 0.88 to 0.90; for both the power-powerlessness and community activism subscales, alphas ranged from 0.60 to .69; for optimism for the future, reliability scores ranged from 0.53 to 0.56; and for righteous anger, Cronbach's alphas ranged from 0.33 to 0.50.

### Self-advocacy

Given the lack of a mental health self-advocacy measure with established psychometric properties existed, prior to study implementation, we adapted the 18-item patient self-advocacy scale (PSAS) (Brashers et al. 1999) to assess participants' involvement in decisions about their mental health care. Originally developed and tested with HIV/AIDS patients, the PSAS has been adapted for use with other populations facing chronic and life-threatening illnesses, such as cancer patients and survivors (Hermansen-Kobulnicky 2008; Volk et al. 2008). Wording for some items were changed slightly to reflect our study population, for example, we replaced "HIV and AIDS" with "mental illness" and "physician" with "service providers". The PSAS contains three subscales that measure key components of self-advocacy: illness and treatment education (six items), assertiveness in interactions with health care providers (six items), and mindful treatment non-adherence (six items). Participants rated their agreement with each PSAS item along a 5-point Likert scale, with 1 = strongly

**Table 2** Unadjusted mean scores for self-advocacy and empowerment measures

Measure by interview time point	Intervention			Control		
	Mean (SD)	Range	N	Mean (SD)	Range	N
<b>Empowerment: total scale</b>						
Time 1	2.82 (0.33)	1.82–3.61	212	2.82 (0.35)	2.04–3.89	216
Time 2	2.94 (0.33)	1.89–3.68	171	2.85 (0.35)	1.93–3.79	171
Time 3	2.90 (0.33)	1.93–3.40	157	2.84 (0.37)	1.75–3.61	161
<b>Empowerment: self-esteem-self-efficacy</b>						
Time 1	2.96 (0.67)	1.33–4.00	212	2.96 (0.14)	1.00–4.00	216
Time 2	3.14 (0.58)	1.11–4.00	171	2.94 (0.61)	1.00–4.00	171
Time 3	3.12 (0.59)	1.00–4.00	157	2.97 (0.66)	1.00–4.00	161
<b>Empowerment: power-powerlessness</b>						
Time 1	2.31 (0.54)	1.00–3.63	212	2.37 (0.58)	1.00–4.00	216
Time 2	2.43 (0.52)	1.00–3.75	171	2.48 (0.54)	1.25–4.00	171
Time 3	2.37 (0.58)	1.00–3.63	157	2.43 (0.58)	1.00–4.00	161
<b>Empowerment: community activism</b>						
Time 1	3.45 (0.42)	2.17–4.00	212	3.41 (0.49)	1.00–4.00	216
Time 2	3.50 (0.40)	2.50–4.00	171	3.41 (0.50)	1.00–4.00	171
Time 3	3.46 (0.43)	1.50–4.00	157	3.37 (0.52)	1.00–4.00	161
<b>Empowerment: optimism for future</b>						
Time 1	3.00 (0.58)	1.50–4.00	212	2.91 (0.63)	1.00–4.00	216
Time 2	3.08 (0.57)	1.50–4.00	171	2.91 (0.56)	1.00–4.00	171
Time 3	3.06 (0.56)	1.25–4.00	157	2.97 (0.62)	1.00–4.00	161
<b>Empowerment: righteous anger</b>						
Time 1	2.25 (0.59)	1.00–4.00	212	2.34 (0.64)	1.00–4.00	216
Time 2	2.29 (0.63)	1.00–4.00	171	2.43 (0.67)	1.00–4.00	171
Time 3	2.24 (0.63)	1.00–4.00	157	2.36 (0.66)	1.00–4.00	161
<b>Patient self-advocacy: total scale</b>						
Time 1	3.46 (0.52)	2.11–4.78	212	3.53 (0.54)	1.72–4.72	216
Time 2	3.66 (0.55)	.22–4.78	171	3.55 (0.55)	1.22–4.78	171
Time 3	3.57 (0.51)	1.89–5.00	157	3.56 (0.54)	1.22–4.78	161
<b>Patient self-advocacy: education</b>						
Time 1	3.62 (0.76)	1.67–5.00	212	3.72 (0.72)	1.67–5.00	216
Time 2	3.90 (0.65)	1.17–5.00	171	3.68 (0.78)	1.00–5.00	171
Time 3	3.81 (0.71)	2.00–5.00	157	3.70 (0.74)	1.00–5.00	161
<b>Patient self-advocacy: assertiveness</b>						
Time 1	3.68 (0.71)	1.67–5.00	211	3.72 (0.71)	1.33–5.00	216
Time 2	3.82 (0.72)	1.00–5.00	171	3.73 (0.76)	1.17–5.00	171
Time 3	3.82 (0.73)	1.17–5.00	157	3.79 (0.75)	1.50–5.00	161
<b>Patient self-advocacy: mindful non-adherence</b>						
Time 1	3.11 (0.75)	1.00–5.00	211	3.14 (0.83)	1.00–5.00	215
Time 2	3.28 (0.80)	1.50–5.00	171	3.24 (0.81)	1.00–5.00	171
Time 3	3.10 (0.81)	1.00–5.00	157	3.20 (0.91)	1.00–5.00	161

disagree to 5 = strongly agree. Items were summed together to create the composite self-advocacy score and each subscale score, with higher scores indicating greater total self-advocacy, illness and treatment knowledge, assertiveness and mindful non-adherence, respectively. Mean scores for the self-advocacy measures are listed below in Table 2.

Across all three interview time points, Cronbach's alphas for the composite scale ranged from 0.76 to 0.79; for the illness treatment and education subscales, alphas ranged from 0.71 to 0.73; for assertiveness, reliability scores ranged from 0.67 to 0.75; and for mindful non-adherence, alphas ranged from 0.71 to 0.75.

## Attrition

A total of 343 subjects (80.1 %) completed T2 interviews, and 320 subjects (74.8 %) completed T3 interviews, for an attrition rate of 25.2 %. There were no statistically significant differences in follow-up rates between intervention and control conditions. At T2, interviews were completed by 171 (80.7 %) intervention group participants and 172 (79.6 %) control group participants ( $X^2_1 = 0.071$ ,  $p = .810$ ). At T3, assessments were completed by 157 (74.1 %) intervention group participants 163 (75.5 %) of the control group ( $X^2_1 = 0.112$ ,  $p = .740$ ). However, there were significant differences in the completion of T2 and T3 interviews by study site [respectively, ( $F = (7,420)=3.24$ ,  $p = .002$ ), ( $F = (7,420)=2.51$ ,  $p = .015$ )]. At T2, 21 (31.3 %) of Knoxville participants did not complete interviews; at T3, 32 (33.0 %) of Chattanooga participants did not complete interviews.

## Analysis

To test our hypotheses, we first computed frequency distributions and descriptive statistics for each of the outcome variables for each interview time point. Next, we conducted multivariate, longitudinal random-effect linear regression analyses to test for differences between intervention and control group participants' empowerment and self-advocacy outcomes over time. A two-level random intercepts model was fitted to the data, controlling for study site as a fixed effect. Random regression was used based on its superiority in addressing issues common in longitudinal, multi-site studies, such as missing data due to the fact that not all participants completed all interviews; state dependency and serial correlation among repeated observations within individual participants; individual heterogeneity; and inclusion of both time-varying and fixed covariates (Gibbons et al. 1993).

## Results

The unadjusted mean scores for each empowerment and self-advocacy measure are presented in Table 2. Results of the random regression analyses (see Table 3) show significant interactions of study condition by time for three of the outcomes. Compared to controls, intervention group participants reported significantly greater improvements over time in overall empowerment, and in empowerment-self-esteem. Participants who received BRIDGES also reported significant increases over time in self-advocacy-assertiveness. No significant differences between the groups occurred for the remaining empowerment and self-advocacy measures.

**Table 3** Random regression models predicting self-advocacy and empowerment controlling for study site

Outcome variable	MIXREG estimate <sup>a</sup>	Standard error	<i>p</i> value
Empowerment: total scale			
Intercept	2.79	0.09	.000
Intervention condition	−0.02	0.04	.548
Time	0.01	0.01	.254
Intervention × time	0.04	0.02	.022
Empowerment: self-esteem-self-efficacy			
Intercept	2.92	0.17	.000
Intervention condition	−0.02	0.08	.848
Time	0.03	0.02	.192
Intervention × time	0.06	0.03	.042
Empowerment: power-powerlessness			
Intercept	2.35	0.15	.000
Intervention condition	−0.10	0.07	.133
Time	0.02	0.02	.445
Intervention × time	0.04	0.03	.226
Empowerment: community activism			
Intercept	3.28	0.12	.000
Intervention condition	0.03	0.06	.652
Time	−0.02	0.02	.397
Intervention × time	0.02	0.02	.426
Empowerment: optimism for future			
Intercept	2.84	0.15	.000
Intervention condition	0.08	0.08	.326
Time	0.03	0.02	.213
Intervention × time	0.01	0.03	.718
Empowerment: righteous anger			
Intercept	2.49	0.16	.000
Intervention condition	−0.11	0.08	.200
Time	0.01	0.02	.916
Intervention × time	0.01	0.04	.825
Patient self-advocacy: total scale			
Intercept	3.61	0.14	.000
Intervention condition	−0.07	0.07	.291
Time	0.03	0.02	.184
Intervention × time	0.04	0.03	.115
Patient self-advocacy: education			
Intercept	3.70	0.19	.000
Intervention condition	−0.06	0.09	.552
Time	0.04	0.03	.158
Intervention × time	0.04	0.04	.355
Patient self-advocacy: assertiveness			
Intercept	3.92	0.15	.000
Intervention condition	−0.16	0.10	.086
Time	−0.01	0.03	.704
Intervention × time	0.12	0.04	.005
Patient self-advocacy: mindful non-adherence			
Intercept	3.09	0.16	.000



**Table 3** continued

Outcome variable	MIXREG estimate <sup>a</sup>	Standard error	<i>p</i> value
Intervention condition	0.01	0.10	.939
Time	0.05	0.03	.101
Intervention × time	−0.02	0.04	.662

<sup>a</sup> Estimates are unstandardized MIXREG coefficients and do not represent effect sizes; sign of coefficient indicates direction of effect

Based on these significant results for intervention group participants, we computed ordinary linear regression (OLS) models to determine whether the degree of exposure to BRIDGES was predictive of overall empowerment, empowerment-self-esteem, and self-advocacy-assertiveness. In analyses conducted for intervention group participants only, we examined the effect of the number of BRIDGES classes attended (ranging from 0 to 8) as well as course completion (defined as attending 6 or more classes, in accordance with BRIDGES program principles) calculating both unadjusted *B* (i.e., unstandardized effect size) and partial-*B* (i.e., unstandardized effect size controlling for study site). “Dose” of BRIDGES was significant in the model examining the impact of course completion on self-advocacy-assertiveness ( $B = 0.154$ , partial- $B = 0.114$ ). These results indicate that, compared with those who did not complete the course, those who did experienced a 0.11 unit increase in self-advocacy-assertiveness score.

## Discussion

Our results show that participation in BRIDGES enhances mental health consumers’ overall feelings of empowerment and self-efficacy, and increases their assertiveness in their interactions with treatment providers. These improvements in outcomes occurred at the conclusion of the course, and were maintained 6-months post-course completion. The fact that participants’ outcomes improved in models controlling for study site indicates that BRIDGES was effective in communities ranging from urban to suburban to rural, demonstrating the intervention’s potential usefulness in diverse regions of a state. Anecdotally, the fact that five waves of BRIDGES were taught over a three-year period with exceptional fidelity demonstrates the potential of a well-trained and supported peer workforce to produce positive recovery outcomes on a large scale. Taken together, these findings suggest that BRIDGES offers participants an effective recovery intervention that enhances their feelings of empowerment in mental health service settings and increases their ability to become more actively involved in their mental health care.

We surmise that the following BRIDGES program components may contribute to these changes in empowerment

and self-advocacy outcomes. Basic education about mental illness and its treatment that participants received in the course may have given them information about various treatment options that, in turn, allowed them to advocate for greater choice in services with their providers. The self-advocacy skills training offered in BRIDGES may have provided practical strategies for engaging providers in effective dialogues about what consumers wanted from their mental health care. BRIDGES problem-solving and communications skills exercises may have offered participants opportunities to practice these strategies, and glean suggestions from peers about how to handle especially challenging situations that arise with treatment providers. Interactions with credible role models—BRIDGES peer instructors—may have increased intervention group participants’ confidence in their ability to discuss treatment options and assert their opinions with their service providers. Indeed, as the OLS regression results suggest, greater exposure to these BRIDGES program components led to significantly greater increases in self-advocacy-assertiveness among intervention group participants.

There are several caveats to our findings due to limitations in study design. First, although we assessed changes in participants’ self-reported empowerment and self-advocacy, we did not observe their interactions with their treatment providers. Thus, we do not know if BRIDGES participants actually asked questions and/or asserted themselves in treatment discussions with providers. Second, along with this, we did not examine how or if observed changes in empowerment and self-advocacy were related to changes in participants’ service use. We do not know, for example, whether changes in these outcomes are associated with greater treatment adherence or retention. Third, our random regression analyses did not include other more contextual factors that might contribute to changes in empowerment and self-advocacy, such as the recovery “climate” at local service delivery agencies or organizational factors such as staff turnover that might limit or facilitate empowerment and self-advocacy. Fourth, due to the success of the randomization, we did not examine other factors that prior research suggests may contribute to changes in empowerment and self-advocacy, such as participant education level and minority status (Alegria et al. 2008; Volk et al. 2008). Finally, the low reliability coefficients of some of the empowerment subscales may suggest that the Empowerment Scale (Rogers et al. 2007) may not have been a psychometrically strong assessment of this construct. However, given that (1) this instrument is the generally accepted “gold standard” in measuring empowerment in this population (Rogers et al. 2007) and (2) our alphas parallel those of a similar study (Wowra and McCarter 1999), we believe that our results for these subscales are valid.

The fact that outcomes did not improve in some of the areas assessed by the empowerment and self-advocacy subscales suggests that additional services or ongoing supports may be needed to build on the initial changes that BRIDGES participants experience. Increases in community activism and mindful non-adherence may require longer-term participation in peer-led programs that offer opportunities to learn about and participate in advocacy efforts, and ongoing encouragement and support from peers to not follow treatment recommendations that consumers determine to not be in their best interest (Brashers et al. 2002; Schutt and Rogers 2009). Along with this, enhanced optimism for the future may require exposure to peers who are pursuing their recovery in a wider variety of helping and other professional roles. For example, a randomized controlled trial of exposure to peer mental health staff showed significant increases in consumer recovery attitudes and greater awareness of the rehabilitation potential of persons with mental illness (Cook et al. 1995).

Our results suggest several areas for future research. Although BRIDGES participation was effective across all study sites, some sites had significantly lower course attendance rates than others. To help maximize program participation in real-world (i.e., non-research) settings, further scrutiny of the factors related to program attendance is warranted. For example, we may find that participants in one site did not have access to reliable transportation, and, as a result, were unable to attend all eight BRIDGES sessions. BRIDGES instructors in that area may apply this finding by working with service providers to help provide transportation to participants, or hold classes in facilities such as public libraries and community centers that are located on regularly scheduled bus routes. While Cook et al. (2012) found that, compared to control group participants, BRIDGES participants reported greater improvements in self-perceived recovery and hopefulness, additional studies are needed to further assess the impact of BRIDGES participation on other recovery outcomes.

In an era of shrinking service delivery dollars and shortages in the mental health workforce, state and other funding authorities are increasingly seeking affordable, recovery-oriented models of service delivery with demonstrated effectiveness. To offer BRIDGES, funds are only needed for materials, instructor fees, and time from a peer program coordinator to supervise and support the instructors. Peer-led programs such as BRIDGES may therefore be a cost-effective alternative to more expensive services that require full-time professionals.

Our research contributes to the evidence base establishing peer-led education programs as one approach that improves consumer recovery outcomes. By empowering consumers to be equal partners in their treatment, peer-led programs such as BRIDGES hold great promise for

creating a mental health service delivery system that successfully responds to the needs of its recipients. Additional studies of BRIDGES and other peer-led education interventions are needed to further explore these potential positive service system effects, as well as their cost-effectiveness.

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