Implementation and Preliminary Outcomes of Cognitive Enhancement Therapy for Serious Mental Illness in an Outpatient Mental Health Program

**Abstract**

Background: Although numerous evidence-based treatments for serious mental illnesses (SMI) exist, the majority are not widely utilized in clinical settings. Cognitive Enhancement Therapy (CET) has been tested in randomized trials, however knowledge regarding implementation and outcomes in naturalistic environments is scarce. Aims: The current study is an uncontrolled, observational study describing implementation and pre- to post- outcomes of CETCleveland®, a community-based version of CET in an outpatient mental health program in the United States. Method: We included *N*=34 diverse individuals with serious mental illness (SMI). Data include qualitative implementation information and participant outcomes, including measures of cognition, symptoms, satisfaction, and adherence. Results: Overall, participant satisfaction was positive, and adherence was comparable with previous studies. Implementation information includes training, clinician and setting characteristics, and barriers and solutions. Preliminary outcomes showed that participants significantly improved in areas of neurocognition and symptoms.Conclusions:Overall, our results demonstrated successful early implementation of CET in a diverse, outpatient mental health program and provided preliminary support for the clinical utilization of CET. We hope these results will promote further access to CET and other evidence-based psychiatric rehabilitation programs in clinical settings.

**Introduction**

The majority of evidence-based programs (EBPs) that have been developed are not utilized, and it typically takes 17-20 years for EBPs to actually become integrated into clinical practice (Balas and Boren, 2000; Morris et al., 2011). To address this problem, research must move beyond efficacy models and carefully dissect the process of implementation within individual settings (Bauer & Kirchner, 2020; Glasgow, Vogt, & Boles, 1999). Although numerous evidence-based psychosocial treatments for serious mental illnesses (SMI) exist, the majority are not widely available in community clinics (Harvey & Gumport, 2015; Medalia, Erlich, Soumet-Leman, & Saperstein, 2019; Kingdon & Turkington, 2019). Given the impact of SMI in terms of functional difficulties for those diagnosed, economic costs, and caregiver stress (Berry & Haddock, 2008), there is an urgent need for improved treatment access. However, there are few studies investigating utilization of evidence-based programs (EBPs) for SMI in naturalistic environments (Shidhaye, 2015; van der Krieke et al., 2015).

Although limited, research has begun to emerge investigating clinical utilization of EBPs for people with SMI. Common barriers for implementing SMI treatments include organizational issues (e.g., lack of training, staffing), attitudes/beliefs of staff (e.g., lack of intervention confidence, beliefs about client engagement), and client factors (e.g., lack of participant reach or symptoms; Ince et al., 2016; Pogoda, Cramer, Rosenheck, & Resnick, 2011; Van Erp, Van Vugt, Verhoeven, & Kroon, 2009). Notwithstanding implementation barriers, behavioral interventions for people with SMI appear to be feasible with positive outcomes in outpatient community clinics (e.g., Barlati, Valsecchi, Galluzzo, Turrina, & Vita, 2018; Bartholomeusz et al., 2013; John, Yeak, Ayres, & Dragovik, 2017; Roberts, Penn, Labate, Margolis, & Sterne, 2010). The availability of more diverse and externally valid data is necessary for widespread adoption of evidence-based interventions for people with SMI.

One promising intervention for further investigation in naturalistic environments is cognitive rehabilitation (CR), an EBP with widespread efficacy but limited implementation or outcome data in community settings (Medalia, et al., 2019). CR is efficacious for improving cognition and functional outcomes for people with schizophrenia (McGurk, Twamley, Sitzer, McHugo, & Mueser, 2007) and other SMIs, including bipolar disorder (Solé et al., 2017) and PTSD (Fonzo et al., 2019). Recent studies show that CR programs are feasible and effective in community settings (McGurk, Mueser, Watkins, Dalton, & Deutsch, 2017; Medalia et al., 2019; Reeder et al., 2016). Cognitive Enhancement Therapy (CET) is a CR program that is efficacious forimproving neuro- and social cognition, functioning, and symptoms for people with schizophrenia and schizoaffective disorder (Hogarty et al., 2004; Eack et al., 2009; Lewandowski, Eack, Hogarty, Greenwald, & Keshavan, 2011) and improvements persist at 1-year follow-up (Hogarty, Greenwald, & Eack, 2006). CET is a fruitful treatment for routine use in community clinics as it shows strong efficacy and potential for increased clinical use, however has not been studied widely in clinical settings, nor has it been systematically implemented. A recent preliminary study reported implementation and effectiveness of an adapted version of CET in a group home with six participants and reported data after the first two months of CET (Schutt, Seidman, Eack, Deck, & Keshavan, 2017). The program was implemented with staff training, independent learning, and regular supervision from CET experts. Results indicated high participant satisfaction, although no statistically significant improvements in cognition. While CET is efficacious, more information is needed regarding acceptability, effectiveness, and implementation to improve accessibility. The present study aims to expand upon previous CET findings to include more detailed implementation information and outcome data with a more diverse sample of participants and clinicians. More broadly, this study may inform further adoption of EBPs by contributing to the sparse SMI treatment literature focusing on implementation of treatments conducted in clinical settings.

Given the limited access of EBPs and lack of published data from naturalistic environments, the current study aims to address these critical gaps. The study is an observational examination focused on implementation and outcomes of CETCleveland®, a community-based version of CET in an outpatient clinic. By doing so, we aim to address the following questions: (1) What are the characteristics of the clinicians and setting utilizing CET and how does the implementation process unfold (i.e., *Implementation*)? (2) Do CET participants recruited by clinicians from an outpatient clinic utilize the intervention as intended (i.e., *Adoption*)? (3) Do participants benefit from CET as implemented in an outpatient clinic?

**Method**

**Setting.**

The current study was conducted at a public, urban academic-affiliated medical center in the midwestern United States that was unaffiliated with the developers of CET. This medical center is one of the primary resources for people with serious mental illnesses and the largest behavioral health program in this region. The setting includes outpatient and inpatient mental health services, including individual/group therapy, psychiatry, supported employment, drug/alcohol services, homelessness services, and psychiatric rehabilitation. CET was conducted at two outpatient programs within the medical center during the course of the study, a psychiatric rehabilitation program and homelessness program.

**Participants.**

Participants were referred by clinicians to CET based on the following inclusion criteria: having a diagnosis of schizophrenia/schizoaffective disorder or other SMI, neurocognitive impairment, and interest in the CET program. SMI was defined by local state/federal criteria for SMI (i.e., chart diagnosis of a major mental disorder and functional disability). All participants enrolled in CET were considered eligible for the study. *N*=34 participants completed written informed consent and pre- and post- testing for the current study. All participants invited to the study decided to participate.

**Study Design and Procedures.**

The study was approved by the relevant institutional review board. Data were collected from four groups of CET conducted from 2016 to 2018. Study data were collected in two sessions, pre- and post- CET treatment participation. Both sessions included primary and secondary measures of social and neuro- cognitive assessment and symptom interviews. Post-testing included a satisfaction measure. Participants were paid $25 for each study session. The study intervention was tested observationally by researchers after patients were already enrolled in the CET program by clinicians.

**CET Intervention & Coaching.**

The current study examined a community-based version of CET, CETCleveland®, consisting of 48 sessions over the course of 12 months (Center for Cognition and Recovery, LLC, 2018). CETCleveland® is a briefer version of CET than the 18-month version examined in prior published research (e.g., Eack et al., 2009) with identical session structure and comparable content. Both versions of CET begin with computerized neurocognitive training and later add group social cognitive activities. Content changes include differences in clinician introduction material (e.g., explanation of CET theory) as well as some changes to social cognitive group content (e.g., several psychoeducation topics varied between the two versions). CET is a CR program that consists of weekly neuro- and social cognitive training with active coach support from two to three trained clinicians. Neurocognitive training consists of 1-hour of computerized drill and practice activities (i.e., repeated practice of learning and memory tasks designed to provide immediate corrective feedback until mastery is achieved). Participants collaboratively decided with clinicians which activities to complete consistent with their goals and appropriate with their level of functioning. Neurocognitive training was provided using Neuropsychonline software including activities targeting attention, executive functioning, memory, visuospatial memory, problem solving, and communication. This differs from previously published CET studies, which used Bracy Memory and Problem Solving Exercises from the PSSCogRehab program. Computer training sessions are structured in pairs of participants taking turns engaging in activities and encouraging each other to participate and develop cognitive strategies. Computer training sessions are facilitated with active coaching which may include weekly group goals, verbal encouragement, discussion of strategies, and post-session debriefing. Social cognition training consists of 1.5 hours of activities including homework discussion, psychoeducation, and hands-on problem-solving activities. Homework discussion consisted of participants volunteering to share their homework aloud to the group and coaches asking follow-up questions to challenge participant’s thinking and reflect more deeply about session topics. Psychoeducation included instruction of a neuro or social cognition topic (e.g., cognitive flexibility, active listening, stigma). Problem solving activities were conducted in pairs of participants designed to challenge neuro or social cognition (e.g., word categorization, introducing a friend). Throughout the group, each participant has the opportunity to share their own experiences as well as ask questions and provide feedback to other participants, while coaches provide ongoing, immediate feedback and encourage active participation.

**Measures.**

***Neuro- and Social Cognition.***

The MATRICS Consensus Cognitive Battery was utilized to assess cognitive functioning (MCCB; Green et al., 2004). The MCCB is a psychometrically sound (Nuechterlein et al., 2008) and widely used measure to assess cognitive functioning in SMI, with scales that assesses speed of processing, attention/vigilance, working memory, verbal working memory, verbal learning, visual learning, reasoning/problem solving, and social cognition. We used age and education corrected t-scores in the current study, as suggested by Kern et al., (2008). The computerized Continuous Performance Test (CPT), a measure of attention included in the MCCB, was replaced with the d2 test of attention due to lack of computer access during testing sessions. The d2 test of attention is a measure of selective attention and processing speed (Brickenkamp & Zillmer, 1998). This test involves a timed task of letter cancellation where higher scores indicate better performance. The d2 has acceptable construct validity and excellent internal consistency (Bates & Lemay, 2004).

***Symptomatology.***

The Scale for Assessment of Negative Symptoms (SANS; Andreasen, 1984a) and the Scale for Assessment of Positive Symptoms (SAPS; Andreasen, 1984b) were used to assess symptomatology. The SANS and SAPS are semi-structured interviews that measure SMI symptoms where higher scores indicate greater severity. The SANS measures affective flattening, alogia, avolition, anhedonia/asociality, and attention. The SAPS measures hallucinations, delusions, bizarre behavior, and thought disorder. Both the SANS and SAPS have been used extensively in psychopathology research and have sound psychometric properties (Kumari, Malik, Florival, Manalai, & Sonje, 2017).

***CET Satisfaction.***

The CET Satisfaction Survey is a 13-item Likert type questionnaire that assesses participant satisfaction on a scale from 1 (*completely disagree*) to 5 (*completely agree)*. This measure was developed for use in the current study based on the core components of CET (i.e., group activities, coaching, and homework). See Table 1 for survey questions.

***Data Analyses.***

There were *N*=45 individuals who initially enrolled in CET and consented to the study although eleven of these participants were lost to follow-up for post-testing data (*n*=2 completers and *n*=9 non-completers). The current study included participants with full pre- and post- intervention data. Thus, participants with complete outcome data included in the current study are *N*=34 participants.

Descriptive statistics were utilized for participant characteristics, intervention adherence, and participant satisfaction. Implementation information was reported using qualitative description. The first author observed the implementation process and recorded detailed field notes throughout the study period involving CET facilitators and trainers (i.e., during implementation meetings, intervention training, and CET groups) which were later transcribed using a word processor. Pertinent information was summarized and included in the current study results. We included participants with complete pre- to post- data to assess clinical outcomes (cognition and symptoms) with a series of repeated measures t-tests including both CET graduates and dropouts. Quantitative data were analyzing using SPSS software.

All participants in our sample engaged in symptom interviews and cognitive testing. Missing data were judged to be missing at random and proportions were approximately less than 5% (i.e., negligible impact) thus only participants who completed the entire battery were included in analyses (Jakobsen et al., 2017). Missing data points were excluded using pairwise deletion. One participant had invalid MCCB visual learning scores due to administration error and this data point was excluded from analyses. Two participants did not complete the d2 test of attention thus these data points were excluded for these two participants. Five participants did not complete the CET satisfaction survey; only available data were analyzed.

**Results**

**Implementation.**

Implementation data includes setting and clinician characteristics described in the first three implementation stages: exploration (gathering information and exploring options), installation (selecting staff, locating space/materials, etc.), and initial implementation (first attempts to deliver the intervention; The National Implementation Research Network, 2018). Implementation was managed completely by clinicians without support or guidance from researchers. The following information will describe barriers and facilitators to implementation within these stages.

***Clinician Characteristics.***

During the study, coaches included *N*=11 generalist clinicians who participated in CET training and certification. Clinicians were employed by the medical center and did not have formal CET training prior to the data collection. These included *n*=4 Bachelor’s level clinicians, *n*=2 Master’s level clinicians, *n*=2 psychiatrists, *n*=2 nurses, and *n*=1 music therapist. The *installation* stage began in the first training year with *N*=7 clinicians participating in certification. Within this first year, *n*=1 coach left the agency with a first year retention rate of 85.7%. Before the second year, *n*=2 coaches decided not to continue coaching due to other professional obligations and *n*=4 new coaches began training. After this second training year, *n*=1 coach/trainer and *n*=1 coach left the agency. Retention for new coaches participating in training was 75%. Retention for CET certified coaches for two years overall was 54.54%.

***Intervention Training & Implementation Process.***

The *exploration stage* of CET implementation beganwith a pilot in 2012 lead by three clinicians. These clinicians engaged in independent learning by purchasing the CET manual utilized in published studies (e.g., Eack et al., 2009). At this time, these clinicians offered educational didactic seminars to interested staff which lacked engagement and did not expand CET beyond the pilot stage.Group participants included those from clinicians’ own caseloads with no outside referrals. Beginning in the *installation* stage, the medical center was awarded a regional foundation grant that allowed for external training to promote program growth and support purchase of program materials (e.g., laptops).

This grant fully supported training and certification provided by the Center for Cognition and Recovery (CCR), a non-profit agency that offers CET training using the CETCleveland® manual (Center for Cognition and Recovery, LLC, 2018) beginning from 2016-2017. This training program was chosen for its accessibility, trainer support, and ease of use. Clinicians were offered training by program champions based on experience with individuals with schizophrenia, interpersonal skills, and motivation. The first training year included weekly tele-observation of each group to co-facilitate, monitor fidelity, and provide feedback and monthly in-person coach didactic/experiential training, including instruction of new social cognition activities, guidance for intervention delivery, and supporting lesson planning. Establishing technology needs (i.e., camera, speakers, and microphone) was challenging to support tele-observation, however program staff persisted in establishing equipment and CCR trainers were flexible with training needs. For example, conference call was used instead of computer video chat due to technical difficulties.

Location of groups moved between the *installation* and *initial implementation* stages. In the first year during the *installation* stage, groups occurred at two separate locations for staff convenience, a housing program and a psychiatric rehabilitation program. During *initial implementation* in the second year, both groups were offered within the psychiatric rehabilitation program. This move was more convenient for participants, as the group location was on a bus line and helped overcome the barrier of transportation relevant for some participants. As groups continued in the second year during the *initial implementation stage*, several coaches discontinued coaching (e.g., due to leaving the agency, see above). To overcome this barrier of coach turnover, two coaches completed training to become CET trainers to have the ability to continuously train future CET coaches, the “train the trainer” method. During this second year, CCR continued to monitor fidelity with monthly tele-observation. See Table 2 for a summary of barriers and challenges throughout these stages of implementation.

**Participant Demographics.**

Of the total sample of *N*=34 participants, *n*=27 completed CET and *n*=7 dropped out. Participants had a mean age of 39.47 (*SD*=13.14) and were majority male (*n*=25, 74.5%). Most participants had a schizophrenia (*n*=26, 76.5%) or schizoaffective disorder (*n*=4; 11.8%) diagnosis. Comorbid diagnoses included mood disorders (*n*=8, 23.5%), anxiety disorders (*n*=5, 14.7%), PTSD (*n*=3, 8.8%), and ADHD (*n*=1, 2.9%). The majority of participants identified as African American or Black (n=18, 52.9%). See Table 3 for full demographic information.

**Intervention Adoption.**

CET satisfaction surveys indicated that the overall satisfaction was favorable. The majority of participants either *agreed somewhat* or *completely agreed* to satisfaction questions, with rates between 79.31% and 96.55% for each question. Participant retention was 79.40%, with 27 of 34 participants graduating. Attendance for CET graduates was measured by percent and number of groups attended. Exact number of days attended was available for *n*=16 participants, and attendance percent was available for *n*=18 participants. For participants without exact number of days data, percent attended was estimated by CET coaches. Participants attended *M*=39.88 days (*SD*=6.42) of 55 total sessions and 80.62% of sessions.

**Intervention Outcomes.**

Of the ten neurocognitive domains tested, participants significantly improved in three areas, verbal learning, visual learning, and attention. Of the five negative symptom subscales, participants significantly improved in three areas, avolition, anhedonia/asociality, and attention. Of the four positive symptoms subscales, participants significantly improved in three areas, hallucinations, bizarre behavior, and thought disorder. See Table 4 and Table 5 for descriptive data.

**Discussion and Implications for Practice**

This study supports the feasibility of implementing Cognitive Enhancement Therapy, an evidence-based, recovery-oriented cognitive rehabilitation treatment, within an outpatient psychiatric rehabilitation program in an academic-affiliated medical center. Further, these results demonstrate preliminary positive outcome data. This study adds to the extremely limited implementation data for evidence-based SMI interventions in community clinics with the first detailed account of outcomes from the entire 12-month community-based version of CET, CETCleveland®. Extensive research has identified cognitive rehabilitation as an evidence-based program, but few studies evaluate implementation and outcomes in clinical settings.

The current study described successful CET early *Implementation* which was bolstered with significant clinician training in a large, academic-affiliated medical center. The study setting was suitable for implementation because it has resources to bolster successful implementation including several programs for recruitment, numerous clinicians for delivery, and supportive case managers (e.g., for transportation). Program implementation within the study setting aligned with typical community practice as clinicians were not affiliated with the developers of CET from published trials and did not have previous cognitive rehabilitation experience. Previously reported training methods for successful implementation were used in this study, including written materials, train-the-trainer, expert consultation, supervision, and feedback (Herschell, Kolko, Baumann, & Davis, 2010). This structured training appeared to be an effective solution to the significant barrier of lack of staff engagement and program growth that occurred early in CET program adoption. Perhaps supports included within training (e.g., materials, consultation) contributed to the feasibility of the intervention for these clinicians because it decreased time spent preparing for the intervention. Recent studies have found the train-the-trainer implementation method to be especially promising (e.g., Smith et al., 2017) and has been successfully used in naturalistic settings (Zandberg & Wilson, 2013). In our study, having CET clinicians as trainers allowed new coaches to be continuously trained and was particularly helpful to overcome the barrier of staff turnover common at this site.

Our study described CET utilization (i.e., *Adoption*) in an outpatient program. The majority of clinician-referred participants had diagnoses consistent with published CET samples (i.e., schizophrenia or schizoaffective disorder; Eack et al., 2009) although the current study included a wider range of participants with other SMIs (i.e., PTSD, bipolar disorder) and comorbid mental illnesses. We further extend existing CET data with a racially and ethnoculturally diverse sample, as published CET studies include majority Caucasian samples. This contributes to the growing body of literature highlighting the importance of addressing individual and cultural diversity in SMI treatment research (e.g., Nagendra et al., 2018). With this diverse sample, successful adoption was evidenced with high satisfaction and attendance. Overall CET satisfaction ratings were high, especially regarding CET coaching. Therapeutic alliance is an important factor in recovery (Moran et al., 2014) and promoting empowerment (Russinova et al., 2013). Our favorable satisfaction rates add to a recently published study describing CET as an empowering experience (Faith et al., 2019). In addition to participants’ report of satisfactory experiences, CET appeared to be utilized as intended by participants. Attendance was 80.62%, which is comparable with previous research and associated with cognitive improvement (Choi & Medalia, 2005). Retention was 79.40%, which is within reported CET retention between 53% (Eack et al., 2015) and 81% (Eack et al., 2009). Of note, our study used the 12-month version of CET, while previous studies deliver 18 months of CET. It is possible CET utilization may differ between these two versions of CET. These study findings support successful CET *Adoption* of a CR program with a typical sample of racially and ethnoculturally diverse adults with SMI from an outpatient mental health program.

In addition to implementation information, our study provides preliminary positive outcomes for CET deliveredin an academic-affiliated medical center. These data should be interpreted with caution, as it was a single group design. Neurocognitive improvements included verbal learning, visual learning, and attention. As our verbal and visual learning tests have multiple trials, perhaps these findings indicate an improvement in learning, which could influence skill acquisition important for functional gains (e.g., Harris and Rempfer, 2020; Rempfer, Brown, & Hamera, 2011). It is surprising that our sample did not improve in social cognition although it is a primary CET treatment target (Eack et al., 2009; Hogarty et al., 2004) with recently confirmed efficacy (Wojtalik et al., 2021). This discrepancy may be explained because we measured social cognition using the managing emotions branch of the Mayer-Salovey-Caruso Emotional Intelligence Test – Managing Emotions (MSCEIT) included in the MCCB cognitive battery, while some studies include the entire MSCEIT. Differences in the two versions of CET may have contributed to our null finding, as we used a revised version of CET that differs from the manual used in published studies. Although the CETCleveland® manual includes comparable social cognitive session content, some content differs from the CET manual from published studies. Early theoretical descriptions of CET suggest that enhancement of nonsocial cognition is essential to support neural systems that enhance social cognition (Hogarty & Flesher, 1999). The CETCleveland® program reduces the number of sessions devoted to neurocognitive practice before social cognitive exercises are added (hence the 12 month timeframe compared to 18 months). It is possible that the additional time spent in nonsocial cognition is essential in supporting maximum social cognitive gains. Socio-cultural factors may have also affected our data, for example matching examinee/examiner race may improve social cognitive task performance (Nagendra et al., 2018), but this factor was not controlled in the current study. Negative symptom improvements included social withdrawal (i.e., anhedonia/asociality), avolition, and attention. Our replicated improvements in social withdrawal have been amongst the most powerful in previous studies (Eack, Mesholam-Gately, Greenwald, Hogarty, & Keshavan, 2013), suggesting that this area is especially influenced by CET. Regarding positive symptoms, participants improved in the areas of hallucinations, bizarre behavior, and thought disorder, although prior CET studies have not found positive symptom improvements (Hogarty et al., 2004). It is unclear how CET may have influenced positive symptoms, although it is possible these improvements may have corresponded to CET activities including group discussion to improve disorganized thought and learning social norms to address bizarre behavior.

This study provides several strengths, including high external validity regarding adoption of evidence-based programs in clinical settings. Our data adds to the extremely limited information available concerning implementation and effectiveness of EBPs for serious mental illnesses beyond randomized-controlled trials. More specifically, it provides a detailed description of implementation and preliminary outcomes of a cognitive rehabilitation program in an outpatient mental health program. More information in this area is critically needed to guide everyday clinicians hoping to utilize EBPs in their clinics.

There are also limitations relevant to the current findings. First, the use of multiple t-tests may have increased the possibility of Type I Errors. Second, this is an uncontrolled observational study with high external validity, which carries an associated potential for lower internal validity. For instance, we are unable to conclude that participant improvements represent effects beyond treatment-as-usual. Additionally, as an unblinded study, researcher expectancy effects are a potential source of bias. The current study used the 12-month version of CET; previous studies report efficacy of 18 months of CET (e.g., Eack et al., 2009). More research is needed to distinguish possible differences in implementation and outcomes for these two versions of CET. We were limited to symptom and cognitive measures of improvement, future research should include functional measures of outcome. Finally, our setting was an academic-affiliated medical center that had some resources that may not be accessible in other clinics, such as rural nonprofit clinics. More research is needed in more diverse clinics to improve generalizability.

**Conclusion and Clinical Implications.**

Our results demonstrated successful early implementation and provided preliminary support for clinical utilization of CET in an outpatient mental health program. The study reported data from CET implementation by generalist clinicians with a diverse sample of typical patients in a community setting. This study has important implications for clinicians planning to implement CET and other evidence-based psychosocial rehabilitation programs in their clinics. Significant implementation barriers included funding, program growth, and staff turnover. We demonstrated that CET can be feasibly implemented with structured training, train-the-trainer methodology, and a flexible approach to implementation and program delivery. Our study along with others have reported similar barriers and facilitators to implementing psychosocial programs for SMI (Bonfils et al., 2018; Latimer et al., 2020; Morse et al., 2020) and these should be considered when planning implementation. CET effectiveness was promising when delivered by trained clinicians with a diverse group of adults with serious mental illnesses. These results should be interpreted with caution given its single group observational design. Clinics with similar structure and goals may consider these barriers and solutions when planning implementation.

Future studies should continue to investigate effectiveness and implementation of EBPs for people with SMIs, as access to rehabilitation programs continues to be low (Medalia et al., 2019; Kingdon & Turkington, 2019). Implementation studies should investigate a variety of settings to elucidate unique challenges for different environments, additional measures (e.g., coach interviews, qualitative participant interviews, or engagement), and follow-up assessment including the *full implementation* phase (The National Implementation Research Network, 2018). Given its potential and early promising findings, the train-the-trainer method specifically should be further studied within implementation designs to elucidate its impact. Effectiveness studies may include a larger sample with an equivalent comparison group to increase the generalizability of the findings, increase power, and differentiate non-specific effects of the intervention as well as more explicit consideration of individual and cultural diversity factors.

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