



Screening, Delivering And Measuring Outcomes For Cognitive Remediation Training In A Private Non-Profit Community Mental Health Setting

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Abstract

Background: Cognitive remediation therapy (CRT) interventions are increasing in their use in outpatient settings. These interventions have demonstrated their efficacy for improving functional outcomes when combined with appropriate rehabilitation interventions. However, most of these interventions have been targeted at outpatients with schizophrenia. It is not clear how many cases with other conditions would manifest cognitive impairments and whether baseline screening would be an effective triage tool. This study addressed this question and looked at measuring the cognitive improvement achieved.

Methods: Consecutive admissions (n=272) to a residential and outpatient young adult rehabilitation program were administered the Brief Assessment of Cognition for Affective Disorders (BAC-A) at the time of admission. Diagnoses were obtained with the M.I.N.I. International Psychiatric Inventory. A cut-off t-score of 40 (one SD below the normative mean) , a Montreal Cognitive Assessment (MoCA) score of ≤ 25, and/or designation of the Cognition and First Episode of psychosis (CAFÉ) Track were the criteria used for selection of cases referred to CRT. At the completion of treatment patients that were referred to CRT were evaluated again using the BAC-A to see how cognition had improved.

Results: The sample received diagnoses that were bipolar disorder for 23%, major depression for 48%, and schizophrenia 12%. Other diagnoses were less common. The sample was 52% female. Overall 41% of patients were referred to CRT based on meeting at least one of the criteria, however only 22% of the cases met criteria on the BAC-A for impairment based on a t-score of 40 or less. The proportion of cases who met criteria was quite similar across diagnoses, although the schizophrenia sample was considerably smaller. Thus, a minority of cases were cognitively impaired.

Discussion: In a younger sample of patients seeking psychiatric rehabilitation, the presence of global cognitive impairment was lower than reported in previous studies of similar diagnostic groups (Reichenberg et al., 2009). The sample manifested considerable everyday disability, but this facility does not accept Medicaid/Medicare for payment demographics may be different than in broader samples. Cognitive impairment in these patients at this facility has been previously reported to correlate with everyday disability (Vargas et al., 2014), so the demographic differences suggest the use of different global criteria for cognitive impairment.

General Background

Large-scale meta-analysis show that CRT improves cognition and functioning when strategically applied, coupled with psychosocial intervention and there are no symptom effects

Cognitive assessment tools need to be tailored to specific populations and practice sites

CRT leads to better work and school functioning

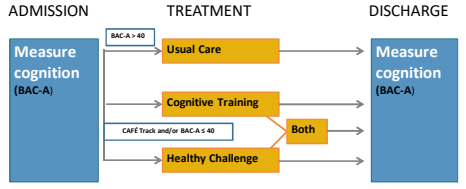
Treatment Site

Skyland Trail is a private non-profit psychiatric rehabilitation facility in Atlanta, Georgia, serving adults ages 18 and older with a primary psychiatric diagnosis. Patient services are offered in a recovery model across residential, partial hospitalization, intensive outpatient and outpatient settings.

Over 15 different adjunctive therapy services are offered in group and individual settings to improve life, social and vocational skills. Patients receive an average of 13 different services during treatment.

CRT is a pillar of the Cognition and First Episode (CAFÉ) Recovery Track

Methods



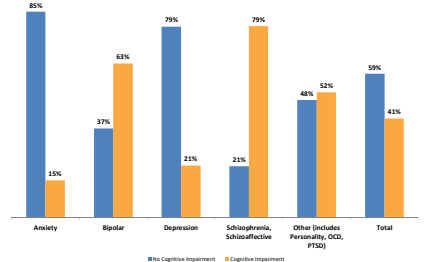
BAC-A = Brief Assessment of Cognition in Affective Disorders.

Patients with a BAC-A cut-off t-score of 40 (one SD below the normative mean) , a MoCA score of ≤ 25 and/or designation of the CAFÉ Track were referred to CRT. The training was offered to patients as a self-directed online program that employed adaptive testing across attention, brain speed, memory, people skills, intelligence, and navigation. The software tracks tasks completed and directs patient to other skill exercises offered. It also logs time spent on CRT exercises. This intervention was offered in a group setting offered 4 x per week for 45 minutes in a computer lab. The group was monitored by a certified peer specialist or case manager and managed by a master-level counselor.

Outcomes

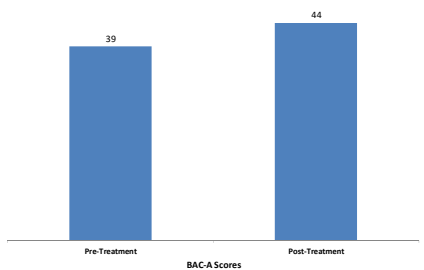
- 272 patients were assessed during the admission process from May 2016 to May 2017
- 41% were referred to CRT based on CAFÉ recovery track and/or BAC-A ≤ 40
- Patients on average trained 12 days and earned 270 stars during CRT. One star represents improving by one level on one test.
- 35 patients had pre- and post-treatment BAC-A scores for comparison and were included in the preliminary analyses (18 are currently still in treatment)
 - Gender was equally distributed (female-49%, male-51%)
 - Predominantly young adults (71% were 25 years old or younger)

Prevalence of Cognitive Impairments by Diagnosis



Results

Cognition Improvement (BAC-A)
 $t(34) = -3.266, P = .002$



- Patients on average experienced a 5 point (i.e., 0.5 SD) improvement in cognition as measured by the BAC-A. Previous studies of practice effects with a single retesting have found much smaller (0.1-0.2 SD) effects.
- Improvement in cognition varied by:
 - Gender: Females improved more than males
 - Age: Older Adults improved more than Adults 25 years of age and younger
 - Diagnosis: Patients with a primary diagnosis of Bipolar Affective Disorder experienced the greatest improvement
- BAC-A scores at admission show that patient population in this study is not as cognitively impaired as in the general population used to create norms for the assessment

Implications

- Motivation to participate in CRT during treatment day is low and considered “boring” when delivered in computer lab setting
- Maximize social engagement while patients participate in CRT via use of the training apps for smart phones and tablets
- Patients that also participated in the Healthy Challenge physical exercise group (N = 12) improved their BAC-A scores by 5.75 points (i.e., 0.6 SD) $t(11) = -2.212, P = .049$
- Patients that participated in CRT tend to show improved graduation rates

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