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Testing a modification of cognitive adaptation training: Streamlining the model for broader implementation

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ABSTRACT

Cognitive adaptation training (CAT) is a home-based, manualized treatment that utilizes environmental supports to improve target behaviors and functional outcomes in persons with schizophrenia. Although clinical trials have shown CAT to be effective across functional, clinical, and treatment adherence domains, when the intervention is withdrawn clients experience significant declines. The aim of the current study was to test a modified version of CAT, which decreases the duration of intensive CAT intervention while utilizing ongoing case management-supported CAT to maintain the fundamental components of the treatment. Twenty-three people participated in an outcome study of the modified version of CAT, evaluating improvements after 4 months of CAT specialist intervention and after an additional 5 months of case manager support. Analysis revealed significant improvements in adaptive functioning, psychiatric symptomatology, and goal attainment, which were maintained throughout case management follow-up. This suggests that an intervention that has previously demonstrated good functional outcomes in randomized trials might sustain its impacts in an abbreviated format with support from existing case managers.

1. Introduction

Individuals with schizophrenia typically have a poor quality of life, low rates of employment, poor social relationships, poor physical health, and high rates of mortality relative to the general population (Brown and Barraclough, 2000). An important contributor to these challenges is the cognitive impacts of schizophrenia (Green et al., 2000) which are both pervasive and not well-addressed by anti-psychotic medications (Peuskens et al., 2005).

Efforts to address the cognitive impacts of schizophrenia can be broadly described as compensatory or restorative. Restorative interventions, such as cognitive remediation, have shown promise in reducing cognitive deficits and improving functional outcomes (McGurk et al., 2007). Cognitive remediation emphasizes training exercises, typically computer-based and applied in a treatment or teaching environment, that practice specific cognitive skills (e.g., attention, memory, problem solving). In contrast, compensatory approaches emphasize the implementation of strategies for working around cognitive difficulties rather than enhancing ability levels. Compensatory interventions can range from the teaching of strategies in a clinical or learning environment, in some instances combined with cognitive remediation, to an emphasis upon environmental supports applied in the home environment (McGurk et al., 2013).

Cognitive Adaptation Training (CAT) is a compensatory intervention that has shown considerable promise as a means through which adherence to treatment and improved functional outcomes can be facilitated among persons with schizophrenia. In most randomized trials clients receiving CAT experience lower levels of symptomatology, lower relapse rates, higher levels of adaptive functioning, better quality of life, and better medication adherence (Velligan et al., 2000, 2002, 2008a,b). One exception involved CAT applied to augment Assertive Community Treatment (Hansen et al., 2012) in which CAT did not enhance outcomes.

While there is evidence of clinically significant improvement in the domains described above, one shortcoming with CAT lies in the maintenance of gains after the intervention is withdrawn. For example, in a trial by Velligan et al. (2008a), it was found that control-treatment differences in functional outcome were no longer present 6 months

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post intervention. In another study, it was found that a decreased frequency of contact with CAT therapists following the intensive 9-month period was accompanied by a decline in the gains made, suggesting that for some clients the maintenance of treatment intensity is necessary (Velligan et al., 2008b).

In this study we examine a modification of CAT that responds to calls for research into CAT models that can be readily sustained over the extended periods that reflect the course of schizophrenia (Warner, 2004) attending to the very limited resources available in most public healthcare contexts (Maples and Velligan, 2008). In this modified version of CAT, clients currently receiving case management services receive 4 months of intensive CAT. This was followed by the maintenance of the CAT protocol by the individual's existing case manager who has received rudimentary training in CAT and can consult with CAT specialists on an as-needed basis. We hypothesized that (i) in the 4 month period of intensive CAT clients would demonstrate functional gains similar to those of previous randomized trials and, (ii) that those gains would be sustained following handoff to case managers over a 5 month period.

2. Method

2.1. Participants

Participants were receiving outpatient case management services in a hospital-based psychiatric service focused on treatment of chronic schizophrenia located in a large Canadian urban center (Toronto, Ontario). In this context case management is typically characterized by weekly office based contacts and monthly in-home community contacts by case managers with caseloads of 25–45. Potential participants were notified about the study by their case managers and were subsequently contacted by research staff who provided details regarding consent and participation. The study was reviewed and approved by an institutional research ethics board.

Criteria for participation included a chart diagnosis of schizophrenia or schizoaffective disorder, age of 18 or older, the presence of significant challenges in psychosocial functioning, and having a stable living circumstance for at least 3 months. Exclusion criteria included a significant recent history of violence and substance abuse occurring in a manner that interfered with study participation, though in practice no one referred to the study was excluded. Of the 24 participants, 17 were male, 10 were of white European origin and 8 of African or African–Caribbean origin, and the mean age was 40.0 years (SD = 9.4). A sample of 24 was considered sufficient for the purposes of an outcome study in which medium to large effect sizes were observed.

2.2. Design

Participants completed a baseline evaluation followed by 4 months of weekly home visits by CAT specialists. Following this 4 month period of CAT specialist intervention, participants were assessed a second time. The participant's existing case managers then provided 5 months of CAT maintenance, having received rudimentary training in CAT. Case managers had access to CAT-specialist consultation as needed. Along with contacts in clinical offices, case manager home visits took place 1–2 times per month. Participants were then re-assessed following the 5-month period of case manager-supported CAT. Feedback about the intervention was sought via mid-point interviews with case managers (inquiring about intervention strengths and limitations) and field notes taken throughout to capture informal feedback from clients, family, and home operators. This information was collected to address feasibility and inform future revisions to the intervention.

2.3. Intervention

Cognitive Adaptation Training (CAT) is a manualized intervention that uses compensatory strategies involving behavioral, neuropsychological and occupational therapy principles (Velligan et al., 2013). Prior to commencing CAT, clients receive a comprehensive assessment tapping neuropsychological, functional, and environmental domains. These assessments, described in detail elsewhere (Velligan et al., 2006), are used to customize treatment based on levels of apathy versus disinhibition, and level of executive functioning. If the behavior is characterized by apathy, interventions emphasize prompts in sequenced tasks, rewards for task initiation, and supports such as signs and checklists. Disinhibited individuals are assisted with reducing distracting stimuli and implementing environment supports (e.g., clothes and food organizers) to facilitate better focus in completing tasks. Mixed cognitive profiles involve combinations of the above approaches. With respect to level of executive functioning, those struggling to a greater extent receive more structured support with finer discrimination among cues. Individuals with higher levels of executive functioning receive more global prompts and less obvious cues. All interventions are built around the higher order goals of the individual (e.g., improved social involvement), typically moving from more basic elements of the goal (e.g., hygiene), to more complex aspects of the same goal (e.g., increased social exposure). Overall, CAT is an intensive intervention involving weekly home visits of 1–2 h typically applied for 9 months, with greater amounts of time spent in the first few months as assessments are completed, supplies purchased, and the protocol implemented.

In this study, during the first 4 months of the intervention, CAT specialists applied the full model. CAT specialists were three Occupational Therapists and one Nurse who had participated in a week-long intensive training in CAT, received weekly Skype supervision by Velligan and Maples along with one on-site visit to assess fidelity. The specific interventions applied here were very similar to those used in the more typical 9-month randomized trials, targeting personal hygiene, scheduling with calendars and alarms, and the establishment of routines in areas such as medication taking and social activities. With the shorter 4-month timeframe there was an emphasis upon participants achieving the greatest degree of autonomy possible in maintaining environmental supports and routines to increase the likelihood of successful maintenance with support from case managers.

During the 4-month period of intensive CAT, all of the participants' regular case managers received a 2 hour didactic training in the key principles in CAT. Case managers also had a 1–1 meeting with the CAT specialist assigned to their respective client(s), which included a joint visit to the client's residence. Case managers were also provided a written summary of the interventions undertaken. In the 5-month period of case manager-supported CAT, case mangers typically consulted with CAT specialists 1–2 times regarding maintenance or revision of strategies, and approximately half of the case managers requested that CAT specialists undertake a home visit with the client to inform the consultation process. In this 5 month maintenance phase of CAT, case managers would verbally check in with clients regarding CAT strategies in place on a weekly basis and conduct a home visit once a month to inspect and adjust environmental supports.

2.4. Assessments

Symptom and functional assessments were administered by one Clinical Psychologist and one senior Psychology graduate intern formally trained in each measure. An intraclass correlation of 0.80, using video recorded and live interviews, was achieved prior to completing study ratings. Regular meetings were held to reduce drift in scale administration and scoring.

The primary outcome variable for the study was the Social and Occupational Functioning Scale (SOFAS; DSM-IV, APA 1994). The