Seeing the Bigger Picture: A Lesson for Accessible Treatment Design

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ABSTRACT

A cognitive remediation group therapy was adapted to accommodate a participant with acquired blindness in an early psychosis intervention program. The modifications facilitated group inclusion and self-reported positive outcomes. This case highlights the need to consider accessibility during treatment design and transitioning therapies from research settings into clinical environments.

Keywords: cognitive remediation, psychosis, accessibility

RÉSUMÉ

Une thérapie de groupe de remédiation cognitive a été adaptée pour accueillir un participant atteint de cécité acquise au sein d'un programme d'intervention précoce pour la psychose. Les modifications ont facilité l'inclusion du groupe et les résultats positifs autodéclarés. Ce cas met en évidence la nécessité de tenir compte de l'accessibilité lors de la conception du traitement et de la transition des thérapies des milieux de recherche vers les environnements cliniques.

Mots clés : remédiation cognitive, psychose, accessibilité

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doi:10.7870/cjcmh-2020-022
Published by Canadian Periodical for Community Studies Inc.

Cognitive remediation has emerged as an evidence-based treatment to improve the attention, memory, processing, and executive impairments associated with psychotic disorders such as schizophrenia as well as other mental health illnesses (Medalia, Beck, & Grant, 2019). Presently, the therapy is transitioning from research settings to clinical environments and, as with all therapies, the requirements for data acquisition, strict methods, and exclusion criteria imposed during development in the clinical trial format translates into some issues with generalizability when faced with everyday clinical environments.

Cognitive remediation typically utilizes the core treatment pillars of (1) didactic instruction through engagement with therapists; (2) interactive computerized training exercises that activate and strengthen cognitive skills through drill-and-practice; (3) strategic monitoring, which assists participants in recognizing and modifying their strategic approach to solving the training exercises; and (4) transfer discussions, which allow participants to apply cognitive gains and strategies to daily functioning (Bowie et al., 2020). The recently developed therapy Action-Based Cognitive Remediation (ABCR) has been demonstrated to increase functional improvement in those afflicted with psychotic disorders by the introduction of three novel components: (5) goal setting to identify important goals in daily life and steps towards achieving them; (6) real-world simulations facilitating the abstraction of drill and practice techniques to simulated skills of daily living; and (7) devising everyday, cognitively stimulating pursuits to further application outside of sessions (Bowie, Grossman, Gupta, Holshausen, & Best, 2017).

As designed, the components of ABCR may present challenges when faced with the unique needs of individuals once implemented into clinical settings. Didactic instruction routinely employs presentation slides and handouts to illustrate and convey concepts to participants. Cognitive training includes extensive use of computerized exercises that require visual acuity and dexterity for participation. Similarly, all real-world simulations utilize a variety of objects and visual materials. Participation in both computerized exercises and real-life simulations is essential to benefit from strategic monitoring and transfer discussions alongside other participants. Unfortunately, the degree to which treatment components necessitate visual ability in order to participate in ABCR, as designed and tested, results in inaccessibility to clients with visual impairment who may identify improvements in cognitive functioning as a goal for treatment.

CASE STUDY

The potential for exclusivity of ABCR as designed was underscored when a female in her 30s attended an ABCR group provided through her local early psychosis intervention program, who provided consent for the presentation of this case report in publication form. This client was diagnosed with acquired blindness due to retinitis pigmentosa when she was in her 20s, and she was adapting to life with a loss of one sensory modality in addition to self-reported cognitive deficits as a result of a co-occurring psychotic disorder. The clinicians facilitating the program and the developer of ABCR collaborated with the client to adapt the therapy while closely maintaining the principles of the group intervention. This was primarily achieved through additional 1:1 assistance and verbal instruction by one of the two group therapists, physical adaptation of program materials, and augmentation of discussions to ensure that strategies and daily living experiences encompassed adaptations for visual impairments.

1. *Didactic instruction* utilizing visual media such as presentation slides and handouts was enhanced with a 1:1 therapist providing additional detailed verbal descriptions of all illustra-

tions and figures allowing the client to visualize such images, internalize the information, and maintain group inclusivity.

2. *Computerized cognitive training* was largely inaccessible for this client in its typical format as these exercises require visual acuity and motor response for participation. We used cognitive training exercises from Scientific Brain Training Pro (Happy Neuron, 2020). Engagement was facilitated by having a 1:1 therapist describe the task as displayed on the screen, verbalize any written information and respond to computer cues as directed by the client. In one instance a computerized mathematical puzzle was adapted to provide a three-dimensional tangible activity that allowed the client to complete the training exercise while the therapist mimicked each action accordingly on the computer and provided feedback on performance.

3. *Strategic monitoring* requires the ability to participate in the computerized exercises and real-world simulations in order for the client to take notice of strategies used in solving these activities, generate and apply novel ones, and discuss this process in group discussion. With the utilization of a 1:1 therapist for visual assistance with both computer and real-world simulations, these treatment pillars became accessible allowing the client to fully participate in strategic monitoring alongside other group participants.

4. *Transfer discussions* were individualized to support the client with applying her cognitive gains and implementation of novel cognitive strategies in daily life, to aid with her visual impairment, including the recollection of appointment details, locations of objects around the home, and completion of tasks or safety measures. The client reported incorporating new strategies, as generated in the ABCR group, into her study of Braille and discussed techniques with visually impaired colleagues outside of the group.

5. *The goal-setting procedure* in ABCR typically utilizes cognitive assessment (e.g., the Screen for Cognitive Impairment in Psychiatry (SCIP; Purdon, 2005)) to establish baseline cognitive functioning, aid in the discussion of desired treatment outcomes, and generate links between the client's goals and their individual cognitive capabilities (verbal learning, working memory, verbal fluency, processing speed and attention). Unfortunately, the SCIP, like most neurocognitive assessment batteries that require visual acuity for completion, was inaccessible for this client. In lieu of an objective cognitive assessment, the therapist collaborated with the client to identify subjective cognitive problems and desired improvements, including memory and organization challenges, related to her psychotic disorder as well as her recently deteriorated vision. With regular goal setting sessions throughout the ABCR program the client was able to identify difficulties encountered and skills that required further practice.

6. *Real-world simulations* posed a significant obstacle to this individual as all hands-on activities designed within the ABCR program required some degree of visual perception. For some tasks, the 1:1 guidance of a therapist enabled the client to participate using other sensory modalities (e.g., hearing and touch). In other situations, such as role-play scenarios, the client effectively engaged with a therapist communicating inaccessible printed information. The client was also aided with exploring potential solutions to accommodate her visual impairment should she encounter similar real-world predicaments.

7. *Planning cognitively stimulating activities* for engagement outside of group sessions was successful with this client appreciating the importance of cognitive training post therapy. She instituted recovery-directed pursuits including learning new musical instruments and establishing sessions with peers to further improve on identified impairments.

Despite the limitations of using a structured cognitive remediation program that was developed in a research setting where perceptual and motor issues were within the exclusion criteria, therapists were able

to engage a client with acquired blindness in all components of ABCR within a clinical setting. The client reported a positive experience with group inclusivity, benefiting from the regular interactions with peers in the group setting as well as successful recognition and generation of cognitive strategies, such as memory encoding and retrieval techniques that she was able to apply in everyday circumstances. The client reported having gained valuable insight after identifying deficits in social cognition during real-world simulations. She was able to continue to benefit from cognitive remediation post treatment with engagement in cognitively challenging activities, and application of acquired skills in daily life. Eight months following the completion of treatment, the client reported the ongoing use of several problem-solving strategies acquired during treatment, especially memory encoding techniques. She decided to take on, as a new cognitive challenge, writing a play, which was selected for production at a local theatre company. She attributed improvements in everyday behaviours, organization, and reduced anxiety with daily life skills to the training she completed in ABCR.

IMPLICATIONS AND FUTURE DIRECTIONS

This case study demonstrates the importance of anticipating the potential unique needs of the client population when developing applied clinical therapies in a research setting. It also highlights the necessity of collaboration with clinicians to adapt therapies for optimal engagement and accessibility for all individuals. The ABCR program is one example of a therapy that required modifications post-design to facilitate accessibility requirements. Despite reported positive outcomes from the client, the delivery of a more tailored and effective form of the program may have been achieved if distinct client accommodations had been anticipated. The availability of visually impaired accessible materials would have allowed this client to more independently participate with real-world simulations and role-play scenarios. Similarly, the addition of verbal commands for computerized exercises could have significantly improved this individual's ability to participate with online exercises without the need for continuous therapist intervention. The ability to adapt emerging evidenced-based therapies, such as ABCR, for visual, hearing, or other physical impairments is essential to provide broad-range service delivery in clinical settings. An important step in development and dissemination is for training of clinicians to include troubleshooting to consider which aspects of therapies from a manual might be modified in order to meet unique needs. Ideally, however, developers should take a proactive approach to ensure that accessibility considerations are incorporated into the design of a therapy from conception, testing, and evolution into its applied form.

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