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Adapting and evaluating a social cognitive remediation program for schizophrenia in Arabic

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ABSTRACT

Although growing evidence supports the efficacy of social cognitive training interventions for schizophrenia, nearly all studies to date have been conducted in Westernized countries. In the current study, we translated and adapted an existing social cognitive skills training (SCST) program into Arabic and conducted a preliminary efficacy evaluation in schizophrenia outpatients in Egypt. Twenty-two patients were randomized to 16 sessions of group-based SCST and 20 were randomized to a format- and time-matched illness management training control condition. Pre- and post-intervention assessments included a primary social cognition outcome measure that assessed four branches of emotional intelligence and a battery of neurocognitive tests. The SCST group demonstrated significant treatment effects on total emotional intelligence scores ($F = 24.31$, $p < .001$), as well as the sub-areas of Identifying Emotions ($F = 11.77$, $p < .001$) and Managing Emotions ($F = 23.27$, $p < .001$), compared with those in the control condition. There were no treatment benefits for neurocognition for either condition, and both interventions were well-tolerated by patients. These initial results demonstrate the feasibility of implementing social cognitive interventions in different cultural settings with relatively minor modifications. The findings are encouraging regarding further efforts to maximize the benefits of social cognitive interventions internationally.

1. Introduction

Social cognition refers to a group of mental operations underlying social interactions, including those needed to perceive, interpret, and generate responses to others' intentions, dispositions, and behaviors (Green et al., 2005). The main areas of social cognition that are studied in schizophrenia include: emotion processing, mentalizing, social perception, and attributional bias (Penn et al., 2006; Green et al., 2008). Impairments in social cognition are common in schizophrenia and they uniquely contribute to the functional disability associated with this disorder (Couture et al., 2006; Fett et al., 2011). Consequently, there is considerable interest in developing social cognitive training interventions for schizophrenia that can be implemented across a range of treatment settings to help improve community functioning (Horan et al., 2008).

Studies targeting social cognition in schizophrenia can be classified into two types. One category is that of *broad* treatment studies that incorporate cognitive, both non-social "neurocognition" and social cognition, and general skills training in multifaceted psychosocial treatment packages. A second category includes *targeted* treatment studies that focus specifically on social cognition training without other interventions. A recent meta-analysis of 19 studies documented the initial efficacy of broad ($n = 4$) and targeted ($n = 15$) treatment programs in a total sample that included 692 patients (Kurtz and Richardson, 2012). There were significant overall treatment effects for facial affect recognition (moderate to large effect sizes) and mentalizing (small to moderate effect sizes), while effects on social cue perception and attributional style were not significant. In addition, there were moderate to large effects on total symptom levels and community functioning, though the effects for positive and negative symptoms were non-significant. Notably, with only one exception (Choi and Kwon, 2006), the positive findings from this meta-analysis come from studies conducted in Western countries.

Although schizophrenia is associated with considerable functional disability in Egypt (Hassan and Taha, 2011), to our knowledge no validated social cognitive training programs are available in Arabic. To address this very large public health need it is important that the field understand the degree to which social cognitive training programs can be successfully disseminated to different languages and cultures. Social cognitive programs may be particularly dependent on local cultural norms and behaviors for both the intervention materials and the outcome measures. For example, neurocognitive remediation programs often use training stimuli and assessment methods that can be relatively easily adapted cross-culturally, such as simple non-verbal (e.g., tones, geometric figures) or verbal (e.g., letters, numbers) (e.g., Rodriguez-Jimenez et al., 2011; Wykes et al., 2012). In contrast, social cognitive tasks and training

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exercises use stimuli that are distinctly social (e.g., people or faces vs. objects) and involve judgments about other people (e.g., attributing mental states to other people vs. basic tests of attention, speed of processing, or memory). Cultural influences have been documented on various social cognitive processes (Adolphs, 2010; Rodriguez-Jimenez et al., 2011; Rule et al., 2013) and assessments of functioning (Velligan et al., 2012; Gonzalez et al., 2013). In cross-cultural research, social norms in Egypt and other Arabic speaking countries have been found to differ from those of Western cultures in several ways, including religious and political values and influences, family and gender roles, and even perceptions of non-verbal behavior (Bente et al., 2010; Okasha et al., 2012; Renner et al., 2007; WHO QOL SRPB Group, 2006). Thus, careful consideration of culture context is therefore necessary when adapting social cognitive interventions.

The primary goal of this study was to adapt into Arabic and evaluate the efficacy of a targeted social cognitive training program for outpatients with schizophrenia. We used a modified version of Social Cognitive Skills Training (SCST; Horan et al., 2009, 2011), a group-based intervention program developed in the United States that targets the domains of emotional processing, social perception, attributional bias, and mentalizing. In prior research, SCST resulted in improvements in emotion processing (affect perception and emotion management) that were independent of changes in neurocognitive functioning or symptoms (Horan et al., 2009, 2011). For the current study, the primary outcome measure was the Mayer–Salovey–Caruso Emotional Intelligence Test 2.0 (MSCEIT — Arabic version; Mayer et al., 2003), a performance measure of emotional intelligence that covers several facets of social cognition that are impaired in schizophrenia (Eack et al., 2007; Kee et al., 2009; Lin et al., 2012).

2. Methods

2.1. Subjects

Forty-two patients with schizophrenia or schizoaffective disorder according to the Structured Clinical Interview for DSM-IV disorders (SCID I: First et al., 2002) were recruited from the outpatient clinic of the Psychiatry and Addiction Hospital of Kasr Al-Ainy Hospitals, Cairo University. All patients were living in the community and were receiving antipsychotic medication. All patients were 18–55 years of age, adherent with their medication, and had at least nine years of formal education. Exclusion criteria were evidence of an identified neurological disease, history of head injury (documented loss of consciousness or recurrent related sequelae), history of comorbid substance use disorder, electro-convulsive therapy during the previous six months, and IQ less than 75. All patients signed a written informed consent approved by the Ethical Committee of Kasr Al-Ainy Hospitals that described the purpose of the study and all of the research procedures.

2.2. Procedures

Twenty-two patients were randomized to SCST and 20 were randomized to a skills training control group (CG). All participants completed a baseline assessment that included interview measures of demographic/psychosocial history and current clinical symptom levels, as well as performance measures of social cognition and neurocognition. The assessment took approximately 5 h. An endpoint assessment was administered 8 weeks later on completion of training. This second assessment included the same measures of symptoms, social cognition, and neurocognition, as well as a questionnaire to collect information about the participants' satisfaction with the groups. Endpoint assessments were completed on all 42 participants and took approximately 3 h. Social cognitive and neurocognitive assessments were conducted blind to group assignment, but the clinical symptom assessments were not.

2.3. Training programs

All participants received two sessions of training per week for 8 weeks (total of 16 sessions). Both of the weekly sessions were given on the same day. All sessions were 1 h in length and the sessions were separated by a break. All groups included 6–8 patients and one group leader (SMG). There were three group cohorts for each type of training program. Participants were not compensated for participation but were reimbursed for travel expenses.

2.3.1. Social cognitive skills training (SCST)

The adapted version of SCST used in this study included 16 sessions from the original 24 session English version of SCST (Horan et al., 2011). These 16 sessions covered three of the four SCST skills areas: emotional perception, social perception, and mentalizing. We excluded the attributional bias domain because it appears to be less relevant for functional outcome in schizophrenia (Fett et al., 2011; Mancuso et al., 2011) and impairment is not consistently detected across studies (Savla et al., in press). The training sessions were translated and adapted into Arabic by the first author who received in-person, supervised training from the developers of SCST (WPH, MFG) in the United States.

Following an introductory session, five sessions were devoted to each of the three skill areas. A summary of the content in each area is presented in Table 1 (see Horan et al., 2011 for further details). Each session included a review of material from the prior session, a didactic presentation on a new topic using Powerpoint slides, practical training exercises, and interactive group activities (e.g., role play exercises). The program was designed to gradually increase in complexity and to minimize demands on attention, memory, and executive functions.

The didactic presentations used the same content and structure as the original SCST program, and we made relatively minor modifications to the training materials and exercises to adapt the material for an Arabic speaking population. We used most of the picture (e.g., faces, social scenarios), video, and auditory stimuli from the original version but excluded some that were not well suited to Egyptian culture. For example, we excluded pictures and videos that depicted unfamiliar recreational activities (e.g., American football or drinking alcohol beverages). Video (segments from American television shows or commercially available videos) and audio materials used in the emotion and social perception modules were presented in their original English with

Table 1
Content of social cognitive training program.

Social cognition domains	Contents
Emotional perception and processing	Definition of the six basic emotions (happy, sad, afraid, surprised, angry and disgusted) Identifying and discriminating cues for basic emotions through facial expressions, nonverbal gestures and vocal cues
Social perception and processing	Appreciating the relationship between emotions and situations Identifying social contexts that typically lead to different emotions Non-verbal social cues and different emotions (e.g., social norms, posture, eye contact, hand gestures and emotional intensity)
Mentalizing	Understanding feelings of others using empathy Teaching perspective taking skills Understanding others' intentions (sincerity, sarcasm and deception) Appreciating the relationship between social contexts and others' intentions