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Social cognition and interaction training (SCIT) for partially remitted patients with bipolar disorder in China

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ABSTRACT

Bipolar disorder (BD) is associated with functional impairment. Social Cognition and Interaction Training (SCIT) has been shown to be feasible and effective at improving social functioning in patients with schizophrenia. We aimed to explore the association between SCIT and improvements in the clinical symptoms and functioning of partially remitted patients with BD in China. Seventy-four BD patients were randomly assigned to the SCIT and psychoeducation (Control) groups. All subjects participated in group interventions weekly for 8 weeks. Furthermore, the participants were administered the Young Mania Rating Scale (YMRS), the 17-item Hamilton Depression Rating Scale (HDRS-17), the Function Assessment Short Test (FAST) and neurocognitive measures at baseline and after eight weeks. There were no differences in demographics, the HDRS-17, YRMS, and FAST scores or neurocognitive measures between the groups at baseline ($p > 0.05$). The repeated-measures analysis revealed that SCIT resulted in greater improvement in the HDRS, YMRS, and FAST scores (including six domains) ($p < 0.01$) and two neurocognitive measures ($p < 0.05$) compared to psychoeducation. Our findings suggest that SCIT is a feasible and promising intervention for the clinical symptoms and functioning of partially remitted patients with BD. Further longitudinal studies are needed to observe the long-term impact of SCIT on emotional and functional improvement in these patients.

1. Introduction

Bipolar disorder (BD) is a recurrent chronic disorder characterized by a fluctuating mood state. BD effects more than 1% of the population worldwide (Grande et al., 2016). Approximately 60%−70% of BD patients show poor social and occupational functioning, which have been linked to residual depressive or manic symptoms (Henry et al., 2015; Huxley and Baldessarini, 2010). Some studies have found that partially remitted BD patients still have moderate difficulty in social adjustment, poorer work ability and moderate-to-severe deficits in attention, processing speed, verbal learning and executive cognition (Jensen et al., 2016; Szmulewicz et al., 2018). Social cognition has been reported to be associated with psychosocial functioning in individuals with schizophrenia as well as those with BD (Lahera et al., 2015), and social cognition is considered a mediator between neurocognition and functioning (Koelkebeck et al., 2018). Ospina et al.'s findings also imply that social cognition may modulate the relationship between neurocognition and social functioning in BD (Ospina et al., 2018). Previous studies have revealed that a social cognitive deficit is consistently present in BD patients (Ioannidi et al., 2015; Kerr et al., 2003). However, few studies have examined the relationship between social cognition and functioning in BD patients. As a core area in social cognition, emotional symptoms should be regarded as a target for psychosocial interventions for patients with BD as well as those with schizophrenia (Aparicio et al., 2016; Kessing and Miskowiak, 2018).

Social Cognition and Interaction Training (SCIT) was originally developed to improve social cognition and social functioning in individuals with schizophrenia (Penn et al., 2005). SCIT has been shown to be feasible and effective in improving social cognition in patients with schizophrenia spectrum disorders (Penn et al., 2005; Combs et al., 2007). A meta-analysis confirmed this effect of social cognitive training on social cognitive and functional outcomes in individuals with schizophrenia (Matthew et al., 2012). Furthermore, SCIT can not only change negative emotion perception and recognition in schizophrenia (Bartholomeusz et al., 2013) but also relieve depressive symptoms in patients with bipolar disorder or schizoaffective disorder (Lahera et al.,

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2013). Zhu et al. demonstrated this efficacy of SCIT in patients with major depression (Zhu et al., 2018). Hasson-Ohayon et al.'s findings showed that SCIT could boost communication and interpersonal skills in patients with schizophrenia, but this efficacy needs to be clarified using more critical designs (Hasson-Ohayon et al., 2009).

To date, psychotherapeutic interventions have been developed for patients with BD. Some controlled studies and a systematic review elaborated on most psychosocial treatments and effects in BD, and the findings showed that only cognitive behavioral therapy (CBT) could improve the acute phase of bipolar depression, but CBT, interpersonal and social rhythm therapy, family therapy and psychoeducation could not improve the functional outcomes in BD (Demissie et al., 2018; Miziou et al., 2015; Reinares et al., 2014; de Barros Pellegrinelli et al., 2013). In addition, psychoeducation is regarded as an active comparator when psychotherapeutic intervention is adopted (Lahera et al., 2014). Recently, as a novel group intervention, functional rehabilitation or remediation (FR) has shown efficacy in BD patients. Some randomized controlled studies have revealed that FR could significantly improve functional outcomes compared to psychoeducation and treatment as usual (Solé et al., 2015; Torrent et al., 2013). Thus, we propose that SCIT could change the impaired functioning and emotional symptoms in partially remitted patients with BD. To date, the association between SCIT and improvement in social and neurocognitive function in bipolar patients is unclear. This study aimed to explore the effect of SCIT on the clinical symptoms and social and neurocognitive functioning of Chinese patients with BD in the context of a controlled trial.

2. Materials and methods

2.1. Subjects

This study was conducted at the outpatient clinic of Tianjin Anding Hospital between June 2015 and December 2016. Eighty partially remitted patients with BD aged 18–60 years who met the diagnosis of bipolar disorder according to the Diagnostic and Statistical Manual of Mental Disorders-fourth edition (DSM-IV) (Edition and Association, 1994) were consecutively recruited. Patients who had major physical diseases or a history of alcohol or substance abuse were excluded. We also excluded patients who received any structured psychological intervention, such as cognitive behavioral therapy (CBT) or psychoeducation within the past year. The enrolled bipolar patients were allowed to receive some atypical antipsychotic and mood stabilizer medication. The study protocol was approved by the Ethics Committee of Tianjin Anding Hospital. Written informed consent was obtained from all participants.

2.2. Assessment and materials

The basic sociodemographic characteristics of the participants, including age, sex, education level, occupation, duration of BD, family history and medications, were collected via an interview. The severity of the depressive and manic/hypomanic symptoms was measured using the 17-item Hamilton Depression Rating Scale (HDRS-17) and the Young Mania Rating Scale (YMRS), respectively. BP remission is defined as a Young Mania Rating Scale score ≤ 6 and a Hamilton Depression Rating Scale score ≤ 8 for two to three months (Samalin et al., 2016; Martino et al., al.,2011). Jensen et al.'s finding (Jensen et al., 2016) indicates that BD partial or full remission is defined as Hamilton Depression Rating Scale scores ≤ 7 or $8 \leq 14$ and Young Mania Rating Scale scores ≤ 7 or $8 \leq 14$, respectively, but no duration criteria are required. Our study defined partial remission as meeting the symptomatic remission criteria for at least one month.

Functional impairment was measured using the Chinese version of the Functioning Assessment Short Test (FAST). The FAST comprises 24 items, including the following six domains of functioning: autonomy, occupational functioning, cognitive functioning, financial issues, interpersonal relationship and leisure time (Rosa et al., 2007). The FAST is rated on a 4-point scale (0–3) ranging from no difficulty to severe difficulty. The higher the total score is, the more severe the functional impairment. The Chinese version of the FAST has satisfactory psychometric properties in terms of validity and reliability in adults with BD. According to our earlier study, the cut-off value of the FAST to differentiate between the euthymic phase and the acute phases is 29, and the cut-off value to differentiate between healthy controls and the euthymic phase is 12 (Zhang et al., 2018). In this study, we chose participants with overall FAST scores between 12 and 29.

Neurocognition was measured using the Trail Making Test-A (TMT-A), Symbol Digit Modalities Test (SDMT), Hopkins Verbal Learning Tests-Revised (HVLT-R), Brief Visuospatial Memory Test-Revised (BVMT-R) and Stroop Color-Word Test (SCWT) to evaluate the speed of processing, verbal learning and visual learning memory, and executive function (Nuechterlein et al., 2008; Scarpina and Tagini, 2017). According to previous studies, in BD patients, the median TMT-A score is 24 (SD 5.0) (Mak et al., 2018), the mean level of the HVLT-R is 28 (SD 4.3) (Sumiyoshi et al., 2017), and the mean level of the BVMT-R and SDMT is 24 (SD 5.5) and 59 (SD 10) (Sousa et al., 2018), respectively. In the Stroop Color-Word Test (SCWT), the mean level in euthymic BD patients is 59 (SD 31.0) (Osman et al., 2007). All ratings were determined at baseline and after 8 weeks.

2.3. Design and intervention procedures

All enrolled participants were randomly assigned to the SCIT group and psychoeducation group (control group) using a computer-generated list of random numbers. All participants in both groups were subjected to the intervention weekly for 8 weeks. Both the SCIT and psychoeducation groups underwent 8 training sessions, and each session lasted two hours. Our main goal was to observe the impact of the intervention on the clinical symptoms and functioning of the patients with BD. Dr. Chan RC first translated the SCIT manual into Chinese to ensure that this manual is suitable for the Chinese culture and psychotic patients (Chan et al., 2010); then, Dr. Chan RC provided the SCIT Chinese version for our study. Two therapists were trained by Dr. Chan, who underwent a training program by the original SCIT developer. Both therapists administered the training trial of the SCIT to maintain the quality of the intervention after completing the training program. Another two experienced psychiatrists who were blinded to the interventional conditions administered all assessments to the subjects at both baseline and the endpoint. The interrater reliability of the HDRS-17, YMRS, FAST and neurocognitive measures had good agreement (the interclass correlation coefficients were higher than 0.80).

2.3.1. SCIT intervention

SCIT is a manual-based treatment intervention developed to address social cognitive dysfunction in patients with psychotic disorders (Penn et al., 2005). A study conducted in Finland reported that the modified SCIT program is feasible and acceptable for patients with psychotic disorders (Voutilainen et al., 2016). Chan et al. condensed the SCIT protocol from a 15-week program to a 9-week program to maintain its suitability for Chinese adults, and the modified SCIT demonstrated better feasibility and efficacy in patients with schizotypal personality in China (Chan et al., 2010). After discussion with Dr. Chan, we slightly modified the SCIT to an 8-week program (we omitted the first-week session with a general introduction of SCIT) but maintained the original content to ensure that the program was more appropriate and relevant to all subjects. These eight training sessions consisted of the following three phases: understanding emotions (3 sessions), social cognitive biases (3 sessions), and integration (2 sessions). Each session lasted two hours, and the sessions were held weekly.