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Brief report

The Social Cognition and Interaction Training (SCIT): An extension to individuals with schizotypal personality features

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ABSTRACT

The current study aimed to extend the clinical utility of the Social Cognition and Interaction Training (SCIT) to individuals with schizotypal personality features. It provided preliminary findings on the suitability and efficacy of the SCIT for these individuals in mainland China.

1. Introduction

Impairments in social cognition and social functioning are among the core characteristics of schizophrenia (Green, 1996; Green et al., 2000). However, treatments (medical and psychological) for social cognitive deficits in this clinical group are largely non-existent and only at an early stage of development (Kee et al., 1998; Littrell et al., 2004). In addition, the efficacy of medications developed for these deficits is yet to be supported. Recently, David Penn et al. (2005, 2007) from the University of North Carolina at Chapel Hill have developed the Social Cognition and Interaction Training (SCIT) to improve emotion perception, attribution style, and theory of mind abilities for individuals with schizophrenia. Empirical findings have demonstrated that there were significant improvements in these social cognitive domains for patients receiving either a full (Penn et al., 2005) or condensed programme (Penn et al., 2007). Most recently, empirical studies (e.g., (Horan et al., 2009; Roberts and Penn, 2009)) have further demonstrated that a condensed programme was effective in treating stabilized outpatients.

Apart from patients formally diagnosed, people at high risk for schizophrenia (e.g., those associated with schizotypal personality features) may share genetic liability for this syndrome and exhibit similar interpersonal dysfunctions and disorganized behaviours similar to the negative and disorganized symptoms of schizophrenia (Faraone et al., 2001; Seidman, 1997). Empirical findings also suggest that people with schizotypal personality features demonstrate similar but subtle deficits of social cognition and emotion regulation (Jahshan and Sergi, 2007; Platek et al., 2005). The purpose of this study was to extend the utility of the SCIT to this high risk group. Given the promising findings of SCIT for schizophrenic patients, we hypothesized that individuals with schizotypal personality features would also benefit from intervention developed to tackle personal and emotional problems experienced in daily life.

2. Materials and methods

2.1. Subjects

The subjects of this study were 40 college students with schizotypal personality features. They were recruited by screening a large sample of college students using the Chinese version of the Schizotypal Personality Questionnaire (Chan et al., submitted for publication-a), with the participants scoring at the top 10% defined as people with schizotypal personality features according to the manual of Schizotypal Personality Questionnaire (Raine, 1991). The subjects were randomly assigned to the SCIT intervention and naturalistic comparison groups. There were 19 subjects (9 males) in the intervention group and 21 subjects (5 males) in the comparison group. The mean ages for the intervention and comparison group were 19.01 years (S.D. = 1.01) and 19.60 years (S.D. = 1.17), respectively. The age and gender ratio for the two groups were not significantly different (*Ps* > 0.05).

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2.2. Materials

Given the promising results of the SCIT, we have adapted this programme into one that is appropriate for the Chinese culture and people. First, we obtained permission from Penn to adapt the SCIT and then we set up a panel to determine the cultural appropriateness of the SCIT programme contents in the Chinese settings. The panel consisted of 1 neuropsychologist, 1 expert in psychological testing, and 1 psychiatrist. Based on the suggestions and recommendations of the panel, we modified the scenarios of social interactions in the training programme. Moreover, we condensed the protocol from a 15-week to a 9-week programme (two 1 h sessions/week) to render it more suitable for college students with schizotypal personality features. Apart from these modifications, the adapted SCIT followed the same procedures and key features of the original programme in capturing social cognition and interpersonal relationships through video watching and discussion. Three phases comprise the adapted SCIT: (1) understanding emotions (3 sessions); (2) social cognitive biases (3 sessions); and (3) integration (3 sessions).

The General Health Questionnaire (Chan, 1985) and Social Functioning Scale (Chan et al., submitted for publication-b; Lecomte et al., 2005) were used as outcome measures. The GHQ was used to measure physical and psychological conditioning, and it consisted of 28 items. Each item was given a score from 0 to 3 and a higher score signifies a poorer condition. The GHQ has four dimensions: somatic symptoms, anxiety and insomnia, social dysfunction, and severe depression and each dimension is comprised of 7 items. The SFS is comprised of 8 subscales: living skills, interpersonal action, social interaction, intimacy, friendship, family, work, and school. We only used Part A of the SFS (viz., subjective rating of functions) in our study. It was a four-point scale, and a higher score indicated better performance. The participants were all college students, they did not have work experience, and thus the work subscale was not completed by participants.

2.3. Procedure

All participants were administered the SFS and the Chinese version of the GHQ at baseline. One week after the baseline measures were taken, the 9-week SCIT training programme was delivered to the intervention group. No intervention was given to the comparison group during the same time period. Participants in both groups were administered the SFS and GHQ 1 week after the 9-week training (i.e., post-intervention) and 3 months after the post-intervention measure (i.e., follow-up).

2.4. Data analysis

The baseline measures were compared between the two groups. Then a 2×2 (time×group) ANOVA was conducted, followed by other analysis to examine the potential interactions.

3. Results

At baseline, none of the GHQ and SFS measures were significantly different between groups; F ranged from 0.12 to 2.90 and P ranged from 0.098 to 0.733.

Considering that baseline performance might affect the following measures, we conducted a 2 (group: intervention group vs. control)× 2 (time: post-intervention vs. follow-up) ANCOVA with baseline performance entered as a covariate. Results showed that for the somatic symptoms dimension of the GHQ, the group by time interaction was significant ($F(1,35)=4.98$, $P=0.032$); further analysis revealed that the intervention group showed improvement (fewer symptoms) from post-intervention to follow-up ($t(17)=2.88$, $P<0.05$) but the control group did not (see Fig. 1a). For the anxiety and insomnia dimension of the GHQ, the group by time interaction was significant ($F(1,35)=4.34$, $P=0.045$); further analysis revealed that the intervention group showed improvement from post-intervention to follow-up ($t(17)=1.28$) but the control group become worse ($t(19)=-2.00$) (see Fig. 1b). For the social dysfunction dimension of the GHQ, the main effect of time was significant ($F(1,35)=13.30$, $P<0.001$), with the mean rating at follow-up significantly improved relative to post-intervention, the group by time interaction was significant ($F(1,35)=8.72$, $P=0.006$), further analysis revealed that the intervention group showed improvement ($t(17)=3.58$, $P<0.01$) but the control group did not (see Fig. 1c). For GHQ total score, the group by time interaction was significant ($F(1,35)=10.49$, $P=0.003$); further analysis revealed that the intervention group showed improvement ($t(17)=2.79$) and controls became a little worse ($t(19)=-1.32$).

For the SFS subscales, the main effects of group and time and the two-way interaction were non-significant. However, there was a trend towards statistical significance between groups for the living skills ($F(1,35)=3.39$, $P=0.074$) and the interpersonal interaction subscales ($F(1,36)=3.07$, $P=0.088$), with participants in the intervention group showing better performances than the comparison group; and there was a trend toward significance for time $F(1,35)=3.37$, $P=0.075$, with the follow-up measure showing better performances than post-training measure.

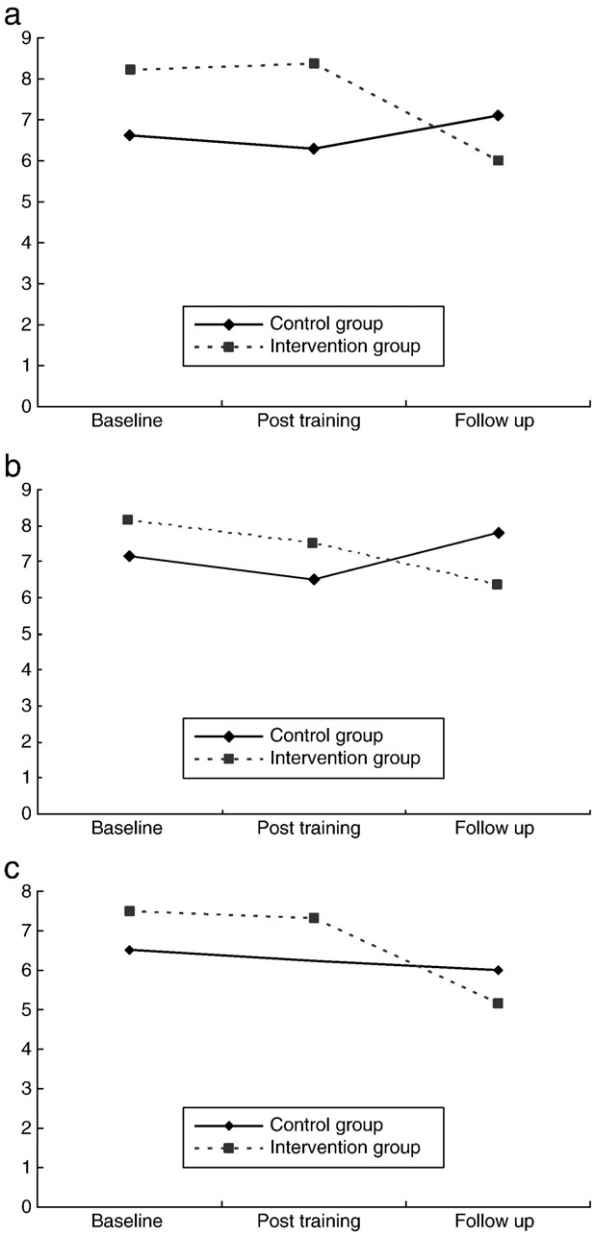

Fig. 1. a. Mean of GHQ somatic symptoms at baseline, post training and follow up. b. Mean of GHQ anxiety and insomnia at baseline, post training and follow up. c. Mean of GHQ social dysfunction at baseline, post training and follow up.

4. Discussion

The SCIT was originally designed to improve the social cognition and interpersonal relationships in patients with schizophrenia. The findings of the current study suggest that the SCIT may have a treatment effect in individuals with schizotypal personality features to improve similar functions, but need to be interpreted cautiously for the reasons noted below. Previous studies (Penn et al., 2005; Penn et al., 2007) demonstrated that both the full and condensed

programmes of the SCIT were effective in improving the social cognition and theory of mind deficits in chronic and acute patients with schizophrenia. However, both of these versions are too long to be carried out for a non-clinical group such as individuals with schizotypal personality features. The condensed and abridged SCIT programme adopted in the current study seems to be suitable and effective for college students with these features. These findings, therefore, extend the clinical feasibility and utility of the SCIT to non-clinical individuals who demonstrate problems in everyday life social cognition. The fact that the intervention group showed continued improvement in symptoms and social functioning from post-intervention to follow-up when they were no longer receiving SCIT training during this period may suggest they continued to practice and use the learned skills after training. However, the significant training effect of the current study should be interpreted with caution. Although the baseline differences between the two groups were non-significant, the magnitude of the observed differences was greater than those of the differences between the two groups immediately after training. Hence, the significant group by time interaction favoring the SCIT intervention group appeared to be mediated to some degree by the differences at baseline. Such a finding may reflect a "regression to the mean" and should be taken into consideration in interpreting these results. That is, the training effects might reflect the fact that the group with poorer baseline performance has shown an expected tendency to increase their scores relative to the mean of the overall sample. Furthermore, the findings of the current study should be cross-validated in other samples in the near future.

The current study has a number of limitations. For example, its sample size was relatively small and the subjects were recruited based on a self-report screening questionnaire. This questionnaire did not include comprehensive outcome measures capturing specific impairments in social cognition and emotional perception and the self-report nature of the questionnaire raised questions about its validity. Finally, although this study adopted a longitudinal design to follow up the carry-over effect of SCIT over a 3-month interval, we did not adopt a more rigorous controlled trials design (with other intervention methods as a comparison) to demonstrate the efficacy of the SCIT programme for individuals with schizotypal personality features. Further study and cross-validation of these findings in a larger sample in clinically diagnosed participants with schizotypal personality disorder should be conducted. Notwithstanding these limitations, the current preliminary findings and its variants may be a promising candidate for cognitive–behavioural intervention for high-risk participants in China.

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References

Chan, D.W., 1985. The Chinese version of the General Health Questionnaire: does language make a difference. Psychological Medicine 15, 147–155.
Chan, R.C.K., Tse, W.S., Lai, M.K., Li, X., Gao, X., Wang, Y., Hung, T., Raine, A., submitted for publication-a. The three-factor structure of the Schizotypal Personality Questionnaire: A convergent evidence from mainland Chinese and Hong Kong Chinese.
Chan, R.C.K., Shi, Y., Wang, Y., Wang, Y., Gao, X., Li, X., Li, H., Cui, J., Deng, Y., Honer, W.G., T., L., submitted for publication-b. Preliminary validation of the Chinese version of the First Episode Social Functioning Scale.
Faraone, S.V., Green, A.I., Seidman, L.J., Tsuang, M.T., 2001. "Schizotaxia": clinical implications and new directions for research. Schizophrenia Bulletin 27, 1–18.
Green, M.F., 1996. What are the functional consequences of neurocognitive deficits in schizophrenia? American Journal of Psychiatry 153, 321–330.
Green, M.F., Kern, R.S., Braff, D.L., Mintz, J., 2000. Neurocognitive deficits and functional outcome in schizophrenia: are we measuring the "right stuff"? Schizophrenia Bulletin 26, 119–136.
Horan, W.P., Kern, R.S., Shokat-Fadai, K., Sergi, M.J., Wynn, J.K., Green, M.F., 2009. Social cognitive skills training in schizophrenia: an initial efficacy study of stabilized outpatients. Schizophrenia Research 107, 47–54.
Jahshan, C.S., Sergi, M.J., 2007. Theory of mind, neurocognition, and functional status in schizotypy. Schizophrenia Research 89, 278–286.
Kee, K.S., Kern, R.S., Marshall, B.D., Green, M.F., 1998. Risperidone versus haloperidol for perception of emotion in treatment-resistant schizophrenia: preliminary findings. Schizophrenia Research 31, 159–165.
Lecomte, T., Ehmann, T., Corbiere, C., 2005. The First Episode Social Functioning Scale (FESFS). University of British Columbia, p. 23.
Littrell, K.H., Petty, R.G., Hilligoss, N.M., Kirshner, C.D., Johnson, C.G., 2004. Improvement in social cognition in patients with schizophrenia associated with treatment with olanzapine. Schizophrenia Research 66, 201–202.
Penn, D.L., Roberts, D.L., Munt, E.D., Silverstein, E., Jones, N., Sheitman, B., 2005. A pilot study of social cognition and intervention training (SCIT) for schizophrenia. Schizophrenia Research 80, 357–359.
Penn, D.L., Roberts, D.L., Combs, D., Sterne, A., 2007. The development of the Social Cognition and Intervention Training program for schizophrenia spectrum disorders. Psychiatric Services 58, 449–451.
Platek, S.M., Fonteyn, L.C.M., Myers, T.E., Izzetoglu, M., Ayaz, H., Li, C., Chance, B., 2005. Functional near infrared spectroscopy reveals differences in self-other processing as a function of schizotypal personality traits. Schizophrenia Research 73, 125–127.
Raine, A., 1991. The SPQ: a scale for the assessment of schizotypal personality based on DSM-III-R criteria. Schizophrenia Bulletin 17, 555–564.
Roberts, D.L., Penn, D.L., 2009. Social cognition and interaction training (SCIT) for outpatients with schizophrenia: a preliminary study. Psychiatry Research 166, 141–147.
Seidman, L.J., 1997. Clinical neuroscience and epidemiology in schizophrenia. Harvard Review of Psychiatry 3, 338–342.