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Coping styles predict responsiveness to cognitive behaviour therapy in psychosis

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ABSTRACT

The study aimed to determine the clinical and neuropsychological predictors of responsiveness to cognitive behavioural therapy for psychosis (CBTp). Sixty patients with schizophrenia or schizoaffective disorder and 25 healthy individuals took part in the study. Thirty patients (25 protocol completers) received CBTp in addition to standard care (SC); 30 patients (18 protocol completers) received SC only. All patients were assessed on symptoms using the Positive and Negative Syndrome Scale (PANSS) and clinical and neuropsychological function before and after CBTp. Symptoms and self-esteem improved to a greater extent in the CBTp + SC than SC control group. Greater pre-therapy coping ability and the self-reflectiveness dimension of cognitive insight at baseline predicted improvement in symptoms in the CBTp + SC group, but not the SC control group, explaining up to 21% of the variance in symptom improvement. Pre-therapy neuropsychological function, duration of illness, clinical insight and gender did not predict CBTp responsiveness. Being able to have a range of coping strategies and reflect on one's experiences while refraining from overconfidence in one's interpretations before therapy is conducive to better CBTp responsiveness.

1. Introduction

The extent to which neuropsychological and clinical factors determine responsiveness to cognitive behavioural therapy (CBT) for individuals with a psychotic disorder remains unclear. Seven randomised controlled trials (RCTs) have examined the clinical predictors of CBT for psychosis (CBTp) (Tarrier et al., 1993; Garety et al., 1997; Tarrier et al., 1998; Naeem et al., 2008; Brabban et al., 2009; Emmerson et al., 2009; Perivoliotis et al., 2010) (see Supplementary data for a summary of the studies), but have yielded somewhat contradictory findings.

Tarrier et al. (1993) found that greater pre-therapy positive symptom severity predicted greater positive symptom improvement following CBTp. In contrast, Naeem et al. (2008) combined the results of two relatively large RCTs of CBTp versus treatment as usual in the Insight trial ($N=422$) and versus befriending in the London Newcastle trial ($N=90$), and in the Insight trial, reported that lower pre-therapy general psychopathology predicted the greater likelihood of a good treatment outcome in the CBTp group, defined as a 25% improvement in general psychopathology, but not positive symptoms. Tarrier et al. (1998) found that the likelihood of a 50% improvement in positive symptoms was predicted by a shorter duration of illness in those receiving CBTp, but not in those receiving routine care or supportive counselling, while Garety et al. (1997) did not find relationships between length of illness or age of onset and outcome, but observed that having a greater number of admissions in the previous five years was related to subsequent improvement in positive symptoms. Brabban et al. (2009) reported that being female was associated with a greater likelihood of improvement in general psychopathology, while again Garety et al. (1997) did not.

There are, however, more consistent results showing that some aspects of insight may be related to good outcome in CBTp. Both Garety et al. (1997) and Brabban et al. (2009) showed that cognitive flexibility about delusions, i.e. acknowledging that another view of the delusion may be possible, and having lesser conviction in one's delusional beliefs, was associated with a greater likelihood of improvement. Naeem et al. (2008) found that better pre-therapy insight into 'illness' predicted good outcome in the Insight study. Emmerson et al. (2009) found that greater clinical insight [awareness that the patient has a mental illness or specific symptoms, awareness of need for treatment, and attribution of symptoms to mental illness, as assessed by the Birchwood Insight Scale (BIS, Birchwood et al., 1994)] at baseline predicted greater improvement in independent living skills following CBTp, while Perivoliotis et al. (2010) reported that greater cognitive insight (the patient's ability to reflect on his/her

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experiences and recognise that conclusions may be incorrect), in particular self-reflectiveness (Beck Cognitive Insight scale, BCI, Beck et al., 2004), was associated with an improvement in severity of delusions and auditory hallucinations. While the Garety et al. (1997) study did not find that clinical or illness insight was predictive of good outcome, insight into the social consequences of one's illness predicted improvements in the CBTp group.

Neuropsychological ability in the form of general intelligence or specific neuropsychological functions, such as memory, attention and executive function, may also play an important role in the therapeutic success of CBT. Neuropsychological impairment in individuals receiving therapy for alcohol dependence, for example, can impede acquisition of new coping behaviours (McCrady and Smith, 1986) or learning and retention of new material (Alterman and Hall, 1989). Three studies (Garety et al., 1997; Granholm et al., 2008; Penades et al., 2010) (see Appendix A for a summary of the studies) examined pre-therapy neuropsychological predictors of CBTp response in patients with a schizophrenia or schizoaffective disorder diagnosis, of which two studies (Garety et al., 1997; Penades et al., 2010) targeted symptom improvement, while Granholm et al. (2008) targeted dysfunctional performance beliefs that interfered with social functioning. Penades et al. (2010) reported that schizophrenia patients who showed a reliable improvement in symptoms had greater pre-therapy verbal memory than non-improvers. Neither Garety et al. (1997) nor Granholm et al. (2008) found that IQ or neuropsychological performance were predictive of good outcome. However, Garety et al. (1997) did not use a comprehensive neuropsychological battery, while CBT in the Granholm et al. (2008) study did not target symptom reduction.

One area which has not been investigated in CBTp outcome research is coping style. Coping enhancement has formed a part of some forms of CBTp (Tarrier et al., 1993; Tarrier et al., 1998; Andres et al., 2003) and been associated with better therapeutic outcome than standard care (SC) or supportive counselling. Patients' mastery of active, problem-focused coping strategies immediately after completion of therapy is reported to predict better psychopathological and social outcome 12–18 months after therapy (Andres et al., 2003). The successful acquisition of coping strategies during therapy may be dependent on an individual's pre-existing coping style, thereby influencing therapeutic outcome. No study, to our knowledge, has yet examined the role of pre-therapy coping styles in CBT responsiveness in psychosis.

The present study aimed to determine the pre-therapy clinical and neuropsychological predictors of CBTp responsiveness in patients with schizophrenia or schizoaffective disorder. Based on earlier findings and the literature about the role of coping in CBTp, we tentatively hypothesized that a shorter duration of illness, better cognitive insight, more active coping, greater verbal memory and cognitive flexibility at baseline would be associated with better CBTp responsiveness, as measured by significant clinical improvement on the Positive and Negative Syndrome Scale (PANSS, Kay et al., 1987). The study also examined the change in clinical status and neuropsychological function following CBTp. It was hypothesized that symptoms and cognitive insight would improve following CBTp, since improvement in symptoms was associated with greater post-therapy cognitive insight in two previous studies (Granholm et al., 2002; Perivoliotis et al., 2010).

2. Methods

2.1. Participants and design

Participants were 60 outpatients with a DSM-IV diagnosis of schizophrenia or schizoaffective disorder who were willing to receive CBTp in addition to their usual care. Twenty-five healthy participants were also included in order to characterize the patient group. The patient and healthy participant groups were matched on average for age and sex. Data on the improvement of symptoms in the CBTp + SC group compared to SC control group following CBTp have been reported in our recent reports on the functional MRI predictors (Kumari et al., 2009; Kumari et al., 2010) and structural MRI predictors of CBTp responsiveness (Premkumar et al., 2009). Thirty patients received CBTp + SC (25 protocol completers) and 30 patients received SC (18 protocol completers in this part of the study). There were more drop-outs in the SC control group than the CBTp + SC group (Chi-square = 4.022, $p = 0.045$). Of those recruited to the CBTp + SC group, five patients left the study early (one patient discontinued therapy and four patients withdrew consent). Of those recruited to the SC control group, 12 patients dropped out (five patients withdrew consent; five patients did not undergo baseline MRI and were not followed-up, one patient moved to another area and could not be contacted, and one patient was incarcerated during the period of his scheduled follow-up). The five CBTp + SC non-completers did not differ from the CBTp + SC completers on pre-therapy clinical status and neuropsychological function, whereas SC control non-completers had lower pre-therapy scores on 2 out of 12 neuropsychological measures than SC control completers (Letter-Number test number of items correctly recalled: completers = 13.22 (2.58) and non-completers = 9.30 (4.37), $F = 9.01$, df = 1,25, $p = 0.006$; Hopkins verbal learning test number of items freely recalled: completers = 22.39 (4.58) and non-completers = 17.78 (5.14), $F = 5.62$, df = 1,25, $p = 0.026$). SC control completers and non-completers did not differ on pre-therapy clinical status.

All patients received a PANSS rating ≥60, reported at least one positive 'distressing' symptom of schizophrenia and wished to receive CBTp in addition to SC. Patients were on stable doses of antipsychotic medication for at least two years and on the current antipsychotic drug for at least three months prior to taking part (86% on atypical antipsychotics). Patients in both treatment groups were recruited from the South London and Maudsley (SLAM) NHS Foundation Trust, were identified by local psychiatric consultants as suitable for CBTp and wished to receive CBTp in addition to their usual care. Patients who were referred to and accepted for CBTp by the Psychological Interventions Clinic for Outpatients with Psychosis (PICuP), SLAM NHS Foundation Trust, went into the CBTp + SC group. Ninety-five patients were referred to PICuP, of whom 31% participated in the study, 23% did not wish to take part, 21% were not considered because they were either not fluent English speakers or had received CBTp in the past, 20% were not suitable for PICuP or withdrew before assessment of suitability for PICuP, and 3% were not suitable for MRI; the reason for non-inclusion of 2% was not known (most likely they missed their appointment). Those who did not wish to take part or were excluded had a similar age on average to those who took part. Patients who matched the CBTp + SC group patients demographically and clinically as much as possible were studied as part of the SC control group over the same interval as the CBTp + SC group patients. Patients were recruited in a case-controlled manner. Although treatment allocation was not randomised, there was no discernable difference between CBTp + SC and SC control groups with regard to their suitability or desire to undergo the intervention.

CBTp was delivered by trained therapists, and followed the procedure developed by Fowler et al. (1995). CBTp, as defined by the National Institute for Health and Clinical Excellence updated guidelines (NICE, 2009), consisted of enabling the patient to: (i) establish links between their thoughts, feelings or actions with respect to the current or past symptoms, and/or functioning; and (ii) re-evaluate their perceptions, beliefs or reasoning related to the target symptoms. In addition, CBTp involved enabling the patient to monitor his/her own thoughts, feelings or behaviours with respect to the symptom or recurrence of symptoms; and/or (i) promotion of alternative ways of coping with the target symptom, (ii) the reduction of distress, and/or (iii) the improvement of functioning. Therapy sessions were conducted on a weekly or fortnightly basis, as preferred by the patient. CBTp patients received an average of 19 (S.D. 7) therapy sessions. Treatment adherence was assessed by fortnightly supervision. In addition, a number of therapy sessions ($n = 13$) were taped and rated independently by an experienced CBTp therapist for fidelity of treatment using the Cognitive Therapy Scale for Psychosis (Haddock et al., 2001). The mean rating was 40.7 (range 21–53) out of a maximum of 60, with 77% of the tapes scoring above the 50% mark (i.e. rating score >30).

SC consisted of case management offered by the case management team for a particular geographical area. The case management included regular reviews with a dedicated care coordinator who monitored the patient's mental health needs, offered support and provided further specialist input, viz. regular reviews with a psychiatrist. The care coordinator also arranged for support from other specialists, such as a psychologist, vocational adviser, benefits adviser and occupational therapist as needed. Six-monthly care plan assessment reviews were carried out with a focus on recovery. The patients in the SC control group were not receiving any control psychological intervention.

The study procedures were approved by the ethics committee of the Institute of Psychiatry and the SLAM NHS Foundation Trust, London. All participants provided written informed consent to their participation and were compensated for their time in undergoing MRI scanning and clinical and neuropsychological assessments (participants were not paid for therapy) and travel.

2.2. Clinical assessments

Clinical diagnosis at baseline was confirmed by a consultant psychiatrist (DF) using the Structured Clinical Interview for DSM-IV (First et al., 2002). PANSS assessments (Kay et al., 1987) were performed on patients before and after CBTp by an experienced psychiatrist (DF). This psychiatrist played no role in patient recruitment or clinical management of the patients included in this investigation and was blind to whether or