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# Who stays, who benefits? Predicting dropout and change in cognitive behaviour therapy for psychosis



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## ABSTRACT

This study investigates the predictors of outcome in a secondary analysis of dropout and completer data from a randomized controlled effectiveness trial comparing CBTp to a wait-list group (Lincoln et al., 2012). Eighty patients with DSM-IV psychotic disorders seeking outpatient treatment were included. Predictors were assessed at baseline. Symptom outcome was assessed at post-treatment and at 1-year follow-up. The predictor  $\times$  group interactions indicate that a longer duration of disorder predicted less improvement in negative symptoms in the CBTp but not in the wait-list group whereas jumping-to-conclusions was associated with poorer outcome only in the wait-list group. There were no CBTp specific predictors of improvement in positive symptoms. However, in the combined sample (immediate CBTp + the delayed CBTp group) baseline variables predicted significant amounts of positive and negative symptom variance at post-therapy and 1-year follow-up after controlling for pre-treatment symptoms. Lack of insight and low social functioning were the main predictors of drop-out, contributing to a prediction accuracy of 87%. The findings indicate that higher baseline symptom severity, poorer functioning, neurocognitive deficits, reasoning biases and comorbidity pose no barrier to improvement during CBTp. However, in line with previous predictor-research, the findings imply that patients need to receive treatment earlier.

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## 1. Introduction

Cognitive behavioral therapy for psychosis (CBTp) has been demonstrated to be effective for psychotic disorders (Wykes et al., 2008) and has been incorporated into several national guidelines (Gaebel et al., 2009; NICE, 2009). Nevertheless, a number of patients discontinue therapy (on average 16% according to a meta-analysis by Lincoln et al., 2008) and among those who continue, approximately half do not show reliable symptom improvement (Jones et al., 2004; Wykes et al., 2008). Knowing who is likely to benefit from CBTp would provide a better basis for an evidence-based allocation of patients to treatment. Furthermore, knowing about who is unlikely to benefit helps us to

understand where CBTp needs to be adapted in order to serve specific groups more effectively.

Several studies have attempted to identify baseline predictors of improvement in CBTp. In regard to socio-demographic variables, these studies have found that younger patients benefit more in terms of positive symptoms (Thomas et al., 2011; Morrison et al., 2012) and that women benefit more than men in overall psychopathology (Drury et al., 1996; Brabban et al., 2009). Furthermore, higher level of education was shown to predict better outcome in negative symptoms (Allott et al., 2011).

A clinical baseline variable relevant to outcome is a shorter duration of treated or untreated psychosis, which has been found to be associated with a shorter recovery time (Drury et al., 1996), greater symptom improvement during CBTp (Tarrier et al., 1998; Thomas et al., 2011; Morrison et al., 2012), and less symptomatology at post-assessment (Morrison et al., 2004). Also, lower baseline symptomatology overall was shown to be related to more

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symptomatic improvement during CBTp (Tarrier et al., 1998), in particular less pronounced negative symptoms were related to greater symptom improvement (Thomas et al., 2011) and outcome (Allott et al., 2011). In contrast, there is some indication that more severe positive symptoms were a positive predictor of symptom improvement (Morrison et al., 2004; Dunn et al., 2006). No study found baseline depression to be related to outcome.

Higher insight into the disorder predicted overall symptom improvement in two studies (Garety et al., 1997; Naem et al., 2008). Interestingly, Garety et al. (1997) also found that among patients with delusions acknowledging the possibility of being mistaken was a predictor of better outcome, although this was strongly associated with insight. Similarly, Brabban et al. (2009) found lower delusion conviction to be associated with overall symptom reduction in a subgroup of patients with delusions who had received CBTp. On a similar note, cognitive insight, in terms of self-reflectiveness and self-certainty was found to be predictive of favorable outcome (Perivoliotis et al., 2010; Premkumar et al., 2011).

Furthermore, higher baseline occupational functioning predicted lower levels of positive symptoms at 1 year follow-up (Allott et al., 2011). With regard to neurocognitive variables, Penades et al. (2010) found better baseline memory performance to predict symptom improvement following treatment. However, most studies (Garety et al., 1997; DeVille et al., 2011; Premkumar et al., 2011) failed to find predictive value of memory, executive functioning, attention, or verbal fluency on outcome of CBTp.

One problem in drawing valid conclusions from the previous research is that studies have focused on different domains and time-points of outcome. Moreover, most studies are inconsistent in whether they investigate unspecific predictors of change or those specific to CBTp or even merely predict symptom levels at post-therapy without controlling for baseline symptoms. Nevertheless, previous findings highlight the positive predictive value of a shorter duration of psychosis and better insight on outcome. They also indicate that more pronounced negative symptoms at baseline are associated with less favorable outcome, whereas more severe baseline positive symptoms seem to be positively related to symptom improvement. The majority of studies do not find neurocognitive functioning to be a predictor of outcome, while there are singular findings indicating that patients with higher education, younger age, and female gender might benefit more from CBTp.

Surprisingly, some predictors that are likely to be specifically relevant to CBTp have not received sufficient attention. Psychotic symptomatology is associated with a range of reasoning biases, such as jumping-to-conclusions, difficulties in theory of mind and attribution biases and, consequently, CBTp has a strong focus on increasing peoples' ability to question their beliefs and to take more time to weigh the evidence before drawing conclusions (Kuipers et al., 2006). This also involves learning to take peoples' cognitive and emotional perspective. On a transdiagnostic level, there is some indication that people with stronger cognitive resources (in the sense of fewer dysfunctional attitudes) benefit more from cognitive approaches (e.g. Sotsky et al., 1991). Garety et al.'s (1997) finding that less pronounced delusion-conviction and cognitive flexibility were associated with better outcome seems to support this for patients with psychosis. It would therefore be interesting to test whether lower levels of reasoning biases predict better outcome. Second, psychosis generally goes along with a range of comorbid disorders, in particular anxiety disorders and depression (Fenton, 2001). In clinical practice, CBTp also targets these disorders. Due to the high efficacy of cognitive behavioral interventions for anxiety disorders and depression (Butler et al., 2006), patients with comorbid Axis I disorders might benefit more from therapy than those for whom the sole focus lies

on psychotic symptoms. In contrast, Axis II disorders are likely to complicate and prolong the therapy and have been found to be a negative predictor of outcome in treatment of depression and anxiety (Reich, 2003).

With regard to outcome, most of the studies have focused on global symptomatology, positive symptoms (as the prime target of CBTp) or functioning. To our knowledge, no study has attempted to predict improvement in negative symptoms although it is agreed that negative symptoms constitute a distinct and important therapeutic domain (Kirkpatrick et al., 2006). Finally, although predictors of dropout related to psychosocial treatments for schizophrenia in general have been investigated, finding age, gender, duration of disorder and treatment-related variables to be associated with dropout (Villeneuve et al., 2010), only one study, by Perivoliotis et al. (2010), has focused specifically on dropout during CBTp.

The aim of this study is therefore to extend the research on baseline predictors of short- and long-term improvement in positive and negative symptoms and dropout in a large and clinically heterogeneous sample of patients who received CBTp. The study is a secondary analysis of dropout and completer data from a randomized controlled effectiveness trial of CBTp (Lincoln et al., 2012) that found significant improvement in positive symptoms and overall psychopathology but not in negative symptoms in the CBTp group compared to a waitlist group. Over and above the predictors investigated in previous studies, we will analyze the impact of social cognition and reasoning which we expect to have unique relevance to CBTp, as well as the impact of comorbidity.

## 2. Method

### 2.1. Design

The study was a single-center stratified (based on the Positive and Negative Syndrome Scale (Kay et al., 1987) total scores), single-blind, wait-list controlled, parallel group study comparing a CBTp group ( $n=40$ ) to a wait-list (WL) group

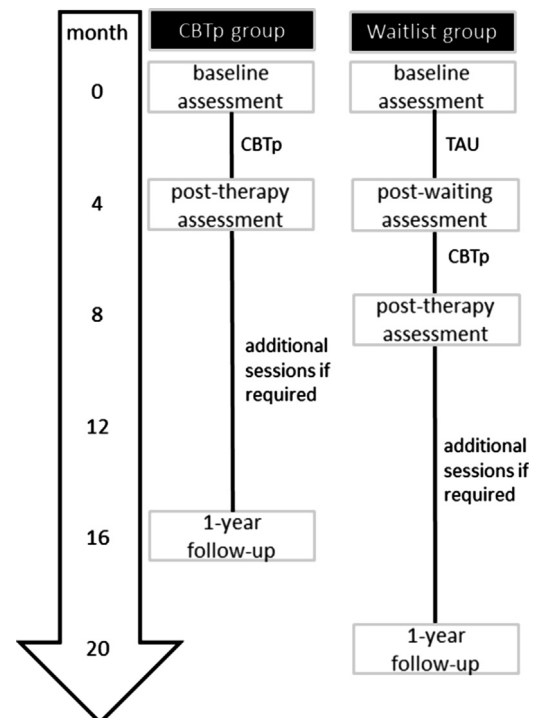


Fig. 1. Timepoints of the Assessments in the CBTp and the Waitlist Group.

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