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# Cognitive Behaviour Therapy for Psychosis: Current Evidence and Future Directions

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**Abstract.** The past decade has seen considerable growth in the evidence base of cognitive behavioural therapy for psychosis. Consistent reports of moderate effect sizes have led to such interventions being recommended as part of routine clinical practice. Most of this evidence is based on a generic form of CBT for psychosis applied to a heterogeneous group. An increase in the effectiveness of cognitive behavioural interventions may require new protocols. Such therapeutic developments should be based on the theoretical understanding of the psychological processes associated with specific forms of psychotic presentation. The current evidence base of CBT for psychosis is reviewed, and barriers that have held back the development of this research are discussed.

*Keywords:* Cognitive behaviour therapy, psychosis, schizophrenia, effectiveness, voices, delusions.

## Introduction

Although single case reports of psychological interventions for psychosis date back more than 50 years (e.g. Beck, 1952), significant developments in this area did not occur until the 1980s. Early behavioural interventions were aimed at symptom management and were predominantly embedded within the traditional psychiatric view of schizophrenia. During the mid 1990s a small number of mainly UK based researchers conducted the first trials in cognitive behavioural therapy for psychosis (CBTp). The encouraging results led to clinical trials being conducted within other countries, and to large scale randomized controlled trials being funded within the UK. Recent meta-analyses of CBTp consistently report moderate effects (Pfammatter, Junghan and Brenner, 2006; Zimmermann, Favrod, Trieu and Pomini, 2005), and current UK clinical guidelines suggest that the intervention should be part of routine clinical practice.

The current paper will briefly review the current evidence base for CBTp followed by a discussion of how theoretically based interventions may develop.

## The current evidence base for CBTp

The rapid growth in the number of clinical trials aimed at evaluating CBTp has led to an increasing number of meta-analyses. The most recent and comprehensive review has been

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able to incorporate a large enough number of clinical trials in order to investigate the role of a number of variables that may be associated with outcome (Wykes, Steel, Everitt and Tarrier, 2008). These included the quality of trial methodology, the target of therapy (i.e. which symptoms were targeted) and the comparison of individual and group therapy. Thirty-four trials met inclusion criteria, with 22 of these being individual CBTp aimed at the positive symptoms of psychosis. There was a significant relationship between trial method quality and outcome, with the lower quality (predominantly older, smaller and less well-funded) trials showing a larger effect size. The trial quality variable of greatest impact was whether assessments were conducted "blind". Trials in which raters were aware of group allocation had an inflated effect size of 50–100%. However, rigorous CBTp studies still showed benefit, and the overall effect size for CBTp was moderate. The moderate effect size was broadly similar (around 0.4) whether the analysis was based on outcome in relation to target symptoms, positive symptoms, negative symptoms, mood or social functioning. Also, there were no significant differences in outcome when comparing individual and group therapy.

Whilst most of the studies within the meta-analysis were aimed at chronic schizophrenia, there have been some high quality large scale investigations aimed at other stages of the disorder. These include the SoCRATES trial (Lewis et al., 2002) which evaluated a short (5-week) intervention targeting individuals recently admitted to hospital. Those who received CBTp made more rapid improvements in symptoms than those who did not, though the effect size at the end of treatment was small. Another key area for intervention in psychosis is the prevention of relapse. A recently completed trial adopting a generic CBTp approach did not reduce overall relapse rates (Garety et al., 2008) although individuals who had families or carers did benefit in the areas of social functioning and delusional distress. The authors conclude that generic CBTp is not indicated for the routine relapse prevention of individuals recovering from an episode of psychosis. An earlier trial that adopted a *targeted* CBTp approach within which an idiosyncratic intervention plan was activated at the early signs of relapse did produce encouraging results (Gumley et al., 2003). Another of the large scale UK trials focused on the potential for dissemination of CBTp. Community psychiatric nurses were trained to deliver short cognitive-behavioural interventions with significant effect (Turkington et al., 2002).

The evidence to date provides support for CBTp as an intervention for individuals suffering from "treatment-resistant" psychosis. However, most trials have adopted a generic approach to CBTp and despite being predominantly aimed at the positive symptoms of psychosis, there has been little differential impact between psychotic and non-psychotic symptoms. Consequently, relatively little is known about the effectiveness of CBTp for other phases of the disorder. Also, little is known as to which elements of CBTp are the most important in producing change, and there are few markers as to who would benefit most from this intervention.

The modest overall outcomes of most CBTp trials may be, in part, a product of the choice of measure used for the assessment of outcome. The most widely used assessment tool has been the positive and negative syndrome scale for schizophrenia (PANSS, Kay, Fiszbein and Opler, 1987), which is predominantly a symptom based measure developed for use in drug trials. It has been shown to be a poor measure of the psychological distress associated with psychotic symptoms (Steel et al., 2007). The use of the PANSS is in contrast to the view that CBTp should not be considered a quasi-neuroleptic (i.e. targeting symptoms) but seen as an intervention aimed at reducing emotional distress (Birchwood and Trower, 2006). Also, the use of a generic form of CBTp aimed at a heterogeneous population may contribute to limited effect sizes. This limitation would seem all the more significant given that a large

number of clinical researchers, at least in the UK, question the scientific validity of the diagnosis of schizophrenia (Bentall, 2007) upon which most trials are based. Of interest, the study that exhibited the largest effect size within the Wykes et al. (2008) review adopted a specific protocol for a specific from of psychotic presentation (command hallucinations) and used an appropriate outcome measure (Trower et al., 2004). This protocol is currently being evaluated further within a large scale multi-site RCT (PI: Professor Max Birchwood). Thus, future interventions may be more effective when based on an understanding of the underlying psychological processes associated with a specific presentation of psychotic disorder. Given the significance of developing interventions upon a theoretical base, recent cognitive models of psychosis will be reviewed.

## Cognitive models of psychosis

The development of cognitive behavioural models for affective disorders had a significant impact on psychosis research within the late 1990s. This work highlighted the extent to which the development and maintenance of a psychotic presentation could be understood with reference to psychological processes already associated with anxiety and depression. The traditional psychiatric view of schizophrenia was challenged in that therapists were encouraged to engage directly with the content of psychotic symptoms. Two influential cognitive models of the positive symptoms of psychosis have been proposed by Garety and colleagues (Garety, Kuipers, Fowler, Freeman and Bebbington, 2001) and by Morrison (2001). Both of these models incorporate the role of negative core beliefs, hypervigilance for threat, scanning for confirmatory evidence and safety behaviours. In essence, they concur that a psychotic presentation may evolve out of the presence of unusual experiences, with a critical factor being how these experiences are interpreted. Psychosis is associated with such experiences being interpreted as negative, threatening and external and leading to hypervigilance and safety behaviours. For example, an individual who "hears a voice", and decides that this perceptual experience is due to a lack of sleep, is likely to have a different outcome to an individual who decides that the Devil is speaking to him with malicious intent.

Whilst many of the treatment implications of these two models may overlap, one of the key theoretical distinctions is in the extent to which the core unusual experiences are viewed as "normal" or are anomalous biologically based phenomena. Garety et al. (2001) refer to the potential role of a genetic vulnerability to having some of these experiences. Whilst Morrison focuses on the extent to which these phenomena are normal and suggests that it is the interpretation of these experiences that is critical. In particular, Morrison focuses on the role of common "intrusive experiences", such as intrusive thoughts and images, which may form the basis of an unusual experience for some individuals. However, both models highlight the critical role of the appraisal of the unusual experience in determining whether or not an individual arrives at a "psychotic" explanation. Therefore, whilst incorporating the generic cognitive model of anxiety and depression, these models also enable the formulation of the development of psychotic symptoms.

A strength of these models is that they incorporate a wide range of psychological processes that have been associated with psychosis, and have the potential to be flexible enough to enable the formulation of the heterogeneous range of psychotic presentations. However, the theoretical significance attached to processes such as appraisal further highlight the inadequacy of using the PANSS as an outcome measure. For example, it would seem that the assessment of change

in appraisal of a voice and the associated distress is more important than the measurement of the presence of a voice.

## Future directions of CBT for psychosis

The development of CBT for psychosis is likely to develop along two main paths. First, the application of CBTp within new and challenging areas. Examples of these are clinical trials based within forensic settings (PICASSO; PI: Professor Gillian Haddock) and aimed at people with co-morbid drug usage (MIDAS; PI: Professor Christine Barrowclough). Second, the development of more specific protocols, including interventions based on specific psychological processes rather than symptoms. These will be briefly reviewed.

### *Voices*

The work of Romme and Escher in the late 1980s helped to highlight the relatively common occurrence of voice hearing and to challenge the psychiatric view of voices as a symptom of an illness. Their work also revealed how many people who hear voices remain outside the psychiatric system and learn to integrate their voice hearing into their daily lives (Romme and Escher, 1989). These studies formed the basis of the "normalization" approach to working with voices, which were now conceptualized as a natural event rather than an inherently distressing experience. The cognitive approach is based on the assessment and formulation of an individual's beliefs about their voices (e.g. where they originate from, whether they mean harm and are powerful) in order to help understand any experience of distress.

As working with voices has been integrated into generic CBTp, only 2 of the 34 trials incorporated in the Wykes et al. (2008) meta-analysis were specifically aimed at this symptom. Encouraging results were obtained in the form of group therapy (Wykes et al., 2005) whereby the process of normalization is enhanced through group interaction. Also, as mentioned earlier, a specific protocol aimed at the presence of command hallucinations is currently being evaluated within a large scale RCT.

### *Delusions*

CBT for delusions is also widely based on a normalization approach, in which distress is the primary therapeutic target and not the content of the unusual beliefs. A study by Peters highlighted how the beliefs of a psychiatric population could not be distinguished from those of new religious movements on the basis of content alone, but only by consideration of the dimensions of controllability and distress (Peters, Day, McKenna and Orbach, 1999). Accordingly, it is paranoid delusions that have received most research interest. Some of the psychological processes associated with paranoid beliefs have been reasoning style, theory of mind, and attributional style (see Freeman, 2007 for a review). Daniel Freeman's research has also highlighted how paranoid beliefs are relatively widespread and seem to occur within a continuum throughout the normal population. The clinical application of this concept is that paranoid beliefs are based on the same processes as those associated with anxiety disorders, i.e. hypervigilance, interpretation bias, and safety behaviours that maintain an underlying threat belief. This body of this work has led to a recent self-help book aimed at clinical and non-clinical paranoia (Freeman, Freeman and Garety, 2006). However, there is a large gap

between theoretical developments and the evaluation of specific clinical interventions within this area.

### *Trauma and psychosis*

Although current cognitive models of psychosis have largely evolved from a basic stress-vulnerability model, it is only relatively recently that large scale epidemiological studies have highlighted the prevalence of traumatic events within individuals diagnosed with psychotic disorders (see Read, van Os, Morrison and Ross, 2005 for a review). However, the relationship between specific traumatic events and specific forms of psychotic presentation remains poorly understood. One such relationship is likely to be the development of negative schemata, formed through the experience of the early adverse life events, which are frequently reported by individuals with psychosis. Such negative schemata are incorporated into cognitive models of psychosis (Fowler et al., 2006), and there is some evidence that they may be directly associated with the content of symptoms (Moorhead, Samarasekera and Turkington, 2005).

There have also been recent advances in understanding the specific psychological processes that may underlie the development of some psychotic symptoms as a reaction to a traumatic event. Steel, Fowler and Holmes (2005) highlight a mechanism through which individuals who are vulnerable to the development of psychosis may also be prone to the development of an increased frequency of distressing intrusive experiences after a stressful or traumatic event. This approach draws on the Ehlers and Clark's (2000) model of posttraumatic stress disorder (PTSD), and suggests that psychosis-prone individuals may engage in particularly high levels of data-driven processing during traumatic events, leading to frequent trauma-related intrusive memories. Morrison, Frame and Larkin's (2003) cognitive model of traumatic psychosis describes how the idiosyncratic and culturally unacceptable appraisal of these trauma-related intrusions may be diagnosed as psychotic.

Whilst these cognitive models have contributed towards the individual formulation of some cases they have not led to the development of any evaluated interventions. A major obstacle is the reliable identification of the target group termed "traumatic-psychosis". Current evidence suggests a stress-sensitivity within psychosis-prone individuals (Myin-Germeys and van Os, 2007). Therefore, stressful events that do not meet the diagnostic criteria for a traumatic event (as specified for the diagnosis of PTSD) may still have a significant impact on a psychosis-prone individual, and may contribute to the onset, content and maintenance of a "traumatic-psychosis". However, a small US pilot study has produced promising results using a basic CBT intervention of psychoeducation, breathing training and cognitive restructuring for individuals suffering from co-morbid PTSD and a severe mental illness (Rosenberg, Mueser, Jankowski, Salyers and Acker, 2004).

The increased awareness of the potential impact of traumatic events on psychotic presentations has led to the application of clinical interventions that originated in other disorders. One example is the use of compassionate mind therapy, developed in the UK by Paul Gilbert, which has been adapted for use with malevolent voice hearers (Mayhew and Gilbert, 2006). Other approaches such as imagery rescripting (Scmucker and Boos, 2005) and working at the level of an individuals "relationship" with there voice (Vaughan and Fowler, 2004) have also been conducted. The challenge for these interventions is not only to develop an evidence base for their effectiveness, but also to develop clear guidelines as to which form of psychotic presentation would indicate their use.

## Process based interventions

Theoretical developments have led to very recent studies that are aimed at modifying specific psychological processes associated with symptoms. For example, there is considerable evidence linking source-monitoring errors to hallucinations, and recently Favrod, Vianin, Pomini and Mast (2006) reported a case study in which an individual was successfully trained to increase their accuracy in this process. Another case study reports how a voice-hearer is taught attentional training techniques in order to increase their control over the voices (Valmaggia, Bouman and Schuurman, 2007)

Reasoning processes have been associated with delusions, and have consequently been targeted within a training intervention specifically aimed at modifying this process (Ross, Freeman, Dunn and Garety, 2008). With respect to the role of underlying emotional disorders within psychosis, a recent study used a form of Interpretation Bias Modification (IBM) (Steel et al., 2008). Based on studies evolving from Mathew's work, which suggests a causal role of interpretation bias within anxiety disorders, IBM is a theoretically based training procedure that has the potential to modify such biases. A wider "training package" for use within psychosis is the metacognitive training programme (Moritz and Woodward, 2007), which includes a number of sessions aimed at a range of processes, such as reasoning, attributional biases, bias against disconfirmatory evidence, and theory of mind.

The applicability of these new interventions to routine clinical settings remains to be explored. There is a clear move away from cognitive behavioural formulations towards a focus on specific processes. However, as is suggested by Moritz and Woodward (2007) they may be best employed not as a stand-alone therapy but incorporated into individual cognitive-behavioural therapy. The development of an idiosyncratic formulation (Tarrier, 2006) may indicate certain processes that could be targeted with cognitive training. Such an approach would enable the individual to be fully informed of how engaging in such training would be relevant to their wider problems and goals.

Another type of process based intervention, which does have the potential to be a stand-alone treatment, is the application of mindfulness, and acceptance and commitment therapy, to individuals suffering from psychosis. This work would seem to have potential (Chadwick, 2005; Bach and Hayes, 2002) but requires larger scale and better controlled evaluation.

## Summary

Most clinical researchers within cognitive behavioural therapy have long since been dissatisfied with the concept of schizophrenia. As argued by Bentall, one of the major problems for the validity of schizophrenia is that the use of this classification fails to indicate accurate response to treatment (Bentall, 2007). If CBTp is to develop beyond being an intervention with moderate effect, interventions will need to become more focused than the current generic CBTp developed for a heterogeneous population.

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