

CBT FOR ADOLESCENTS WITH PSYCHOSIS: INVESTIGATING THE FEASIBILITY AND EFFECTIVENESS OF EARLY INTERVENTION USING A SINGLE CASE DESIGN

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Abstract. This paper presents a single case study investigating the use of cognitive behavioural therapy (CBT) with an adolescent experiencing a psychotic episode. The participant was a 15-year-old girl with first episode psychosis, who was an inpatient in an adolescent psychiatric unit. Progress was evaluated using an AB time series design, lasting 16 weeks in total. After a baseline assessment (A) the participant received a 16-week CBT intervention for psychosis (B). The effectiveness of the intervention was investigated with relation to psychotic symptoms, self-esteem, recovery style, person evaluations, anxiety and depression. The results indicated that there were some improvements in symptoms of anxiety, depression and psychosis but were inconclusive for the other measures. It is argued that the maintenance of negative person evaluations had a detrimental effect on the participant's ability to increase self-esteem, change recovery style and further reduce psychotic symptoms, anxiety and depression. The impact of environmental factors on the progression of the participant's illness is considered and the findings are discussed in relation to previous literature.

Keywords: Cognitive behaviour therapy, psychosis, adolescent, single case design.

Introduction

Psychosis affects around three in every hundred young people and alters people's thoughts, beliefs, feelings and behaviour. The term "psychosis" is used to describe a range of conditions in which the mind is affected and there is some loss of contact with reality. Throughout this paper the term psychosis will be used to refer to this range of disorders, including schizophrenia. Although it is widely accepted that psychosis typically develops in adolescence and early adulthood (Hafner et al., 1995), there has been relatively little research focusing on either adolescent onset (Harrop & Trower, 2001) or psychological interventions specifically for adolescents with psychosis (Volkmar, 1996).

Psychosis can be very disabling, especially for those experiencing multiple episodes. Research has shown psychosis to be one of the most disabling mental illnesses (Walkup & Gallagher, 1999). Johnstone (1991) specified unemployment, social difficulties and a restricted lifestyle as being the common difficulties of people with psychosis. Given that psychosis can

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have such disabling consequences, and is likely to interrupt normal social and intellectual development (Edwards & McGorry, 1998; McGlashan, 1998), it is imperative that the most effective package of treatment is employed. This seems particularly pertinent to adolescent onset, as adolescence is such a crucial developmental period.

Early intervention in psychosis

In the past, treatment of psychosis has fallen within one of two paradigms: acute crisis intervention and/or rehabilitation. A third paradigm has developed recently, largely influenced by the pioneering work of the Early Psychosis Prevention and Intervention Centre (EPPIC) in Australia (McGorry, Edwards, Mihalopoulos, Harrigan, & Jackson, 1996) and the Early Intervention Service (EIS) in Birmingham, UK (Birchwood, McGorry, & Jackson, 1997). This “early intervention” approach is argued by Birchwood et al. (1997) to compose of three elements: early detection of at risk mental states, early treatment of the first psychotic episode, and interventions targeted during the early phase of psychosis. The National Service Framework for Mental Health (Department of Health, 1999) added political weight to this approach by stressing the importance of early intervention in psychosis. More recently the National Plan (Department of Health, 2000) has identified early intervention in psychosis as a clinical priority, stating that reducing the period of untreated psychosis in young people can both prevent initial problems and improve long-term outcomes. Birchwood, Todd and Jackson (1998) proposed that during the prodromal phase of psychosis there is a “critical period”, which can determine the long-term prognosis of the disorder and offers major opportunities for secondary prevention. There are numerous variables present and therefore changing the course psychosis is not an easy task. Nevertheless, Birchwood, Todd and Jackson (1998) hypothesize that, during this critical period, “efforts to stabilize developing disabilities, reduce treatment resistance and influence the way people appraise their illness may have a disproportionate impact compared to interventions later in the course of illness”. The concept of a critical period further highlights the importance of people receiving effective intervention as soon as possible, after the onset of psychosis.

In addition to the potential, at this critical period, for a pervasive and destructive effect on a person’s developmental trajectory, the early onset of psychosis is associated with more severe illness in many studies (Birchwood, 2000). Clark and Lewis (1998) argue that “early onset psychosis is an extremely disabling and chronic condition with a generally worse outcome than when onset is during adulthood”. McGlashan (1998) argues that “the processes that make schizophrenia a lifelong disorder may be most active and do the most damage early in the course of the illness”. Thus, due to the potential seriousness of the consequences of early onset psychosis, it seems particularly crucial that the most effective treatment package is developed for adolescents experiencing psychosis.

Psychosis in adolescence

Despite the potentially serious consequences of early onset psychosis and the recognition of the importance of early intervention, there are still considerable difficulties associated with diagnosis in adolescence (Parry-Jones, 1991; Tolbert, 1996; Volkmar, 1996; Clark & Lewis, 1998). Parry-Jones (1999) identifies the difficulty of disentangling maturational features from psychopathological phenomena, arguing that, “it is characteristic of adolescent psychoses that

precise diagnosis may be difficult and lengthy observation and assessment may be necessary". Research has shown that there are similarities between psychosis and "normal" adolescent development (McGorry et al., 1995). This study suggests that the prodromal features of psychosis (e.g. magical ideation, social isolation and marked lack of initiative or energy), as described in DSM-III (American Psychiatric Association, 1987) are extremely prevalent among older adolescents. The authors argue that these symptoms cannot be regarded as sufficient evidence of early psychosis and propose that more accurate predictors of prodromal psychosis need to be defined. Such difficulties can result in delays in accessing appropriate services, which in turn may cause greater disturbance of social and developmental milestones. Therefore early intervention is imperative.

A further study has focused specifically upon why psychosis develops in adolescence (Harrop & Trower, 2001). In this study, psychosis in adolescence is seen as a consequence of severe disruption in development. It is argued that, for most young people, adolescence is a particularly stressful stage of the life cycle and problems may arise because of difficulties in developing a self that is autonomous from their parents, or because of difficulties in bonding with peers.

Cognitive behavioural therapy for psychosis

Despite the growing evidence base supporting the existence of a critical period and the importance of multi modal early intervention, there still appears to be a tendency to delay psychological treatment until the individual has been stabilized on medication (Tarrier et al., 1993). CBT has generally been used to alleviate the treatment resistant symptoms of psychosis (Haddock, Morrison, Hopkins, Lewis, & Tarrier, 1998). There is a developing evidence base for the effectiveness of CBT in reducing the positive symptoms (e.g. hallucinations and delusions) of psychosis (British Psychological Society, 2000) and there are a number of "treatment manuals" available (Fowler, Garety, & Kuipers, 1995; Chadwick, Birchwood, & Trower, 1996; Nelson, 1997). A variety of different cognitive behavioural interventions have been used for reducing psychosis (Norman & Townsend, 1999). CBT has been found to be a beneficial treatment for a number of specific positive psychotic symptoms, such as persecutory delusions (Freeman et al., 1998) and hallucinations (Haddock, Tarrier et al., 1998).

A number of studies have investigated the use of CBT in the early stages of psychosis. Haddock, Morrison et al. (1998) reviewed cognitive behavioural interventions in early psychosis and argued that CBT is feasible for patients with recent onset psychosis, although further evaluation of its effectiveness is necessary. A longitudinal study by Drury, Birchwood, Cochrane and Macmillan (1996a, b) and Drury, Birchwood and Cochrane (2000) found CBT to be effective in patients suffering from acute psychosis. However, the participants were predominantly adults (the mean age of the group receiving cognitive therapy was 29.7 years) and only 35% of this group were experiencing their first episode. More recently, Haddock et al. (1999) have conducted a pilot study to explore the effectiveness of CBT with inpatients experiencing an acute recent-onset schizophrenic episode. CBT was found to be an effective treatment and a larger randomized controlled trial over multiple hospital sites is currently in process. However, despite focusing on recent onset, the participants in this study were also predominantly adults (the mean age was 28.1 years for the CBT group). Thus, no research appears to have focused specifically upon the use of CBT for adolescents with psychosis.

Self-esteem in people experiencing psychosis

Self-esteem holds importance for the way in which people feel about themselves and, consequently, how they interact with others. Fennel (1999) argues that low self-esteem has an impact upon a person's thoughts, behaviour, emotional state and day-to-day living (including work, personal relationships, leisure and self-care). Silverstone (1991) studied the effect of different psychiatric conditions, including psychosis, on self-esteem. All psychiatric diagnoses were associated with lower levels of self-esteem than that of a control group from a normal population. However, this study did not attempt to investigate whether low self-esteem was a predisposing factor or a consequence of the psychiatric illness. Chadwick et al. (1996) argue that individuals who experience psychosis, and persecutory delusions in particular, are likely to have low self-esteem. They suggest that persecutory delusions correspond to ongoing beliefs about self and others, which are often negative amongst people with psychosis (Chadwick, Trower, & Dagnan, 1999). It is possible that such persecutory beliefs may actually reflect pre-existing (pre-onset of psychosis) negative beliefs about self and others (Fowler, 2000).

Fennel (1999) suggests that at the heart of low self-esteem are negative beliefs about the self. The development of low self-esteem (and these negative self-beliefs) is based on personal experience, including the presence of negatives and the absence of positives. Fennel (1999) argues that CBT is an ideal approach for low self-esteem because it provides an easily understood framework for understanding how the problem developed and what maintains it. Additionally, CBT focuses on thoughts, beliefs and attitudes and a person's opinion of themselves lies at the heart of low self-esteem. Therefore, it seems reasonable to expect that a cognitive behavioural approach targeting an individual's delusions and hallucinations may well have a positive impact upon self-esteem.

Recovery style

Drayton, Birchwood and Trower (1998) identified that there was a limited amount of research into the way in which individuals adapt to psychosis. They developed a self-report questionnaire (RSQ) designed to measure recovery style in people with psychosis. The questionnaire is based upon the Integration and Sealing Over Scale (ISOS) (McGlashan, Levy, & Carpenter, 1975), in which the clinician assesses the individual over a number of concepts related to their illness and make a global rating of the individual's recovery style. McGlashan et al. (1975) proposed that people recovering from psychosis adopt one of two distinct recovery, or coping, styles: "integration" and "sealing over". Individuals who adopt an integrative style recognize the continuity of their experiences before, during and after a psychotic episode. They take responsibility and actively strive to understand their psychotic experience. On the other hand, individuals who adopt a sealing over style attempt to isolate the psychotic experience and view it as separate from themselves. For more information on these two concepts please refer to the original paper (McGlashan et al., 1975).

McGlashan (1987) showed that people who adopted an integrative recovery style had significantly better social functioning and less likelihood of relapse. Drayton et al. (1998) explored the relationship between recovery styles and early attachment experience and found that people who sealed over had a higher incidence of depression, made more negative self-evaluations and also saw their parents as indifferent.

Rationale

In summary, previous research has identified a clear need to intervene at an earliest possible stage, especially given the poor prognosis of adolescent psychosis. Studies have begun to indicate some success in reducing the positive symptoms of psychosis, using CBT during acute psychotic episodes. Other research has indicated that self-esteem may be a mediating factor in the development and maintenance of psychosis. Therefore, this study aims to illustrate the feasibility of applying a cognitive behavioural intervention for an adolescent experiencing psychosis within the initial stages of admission to an inpatient unit. It will consider the effectiveness of the intervention in terms of reduction of psychotic symptoms, anxiety and depression. The intervention will also hope to have an effect upon the individual's evaluative beliefs, self-esteem and recovery style. This study is unique in focusing specifically on an adolescent experiencing her first episode of psychosis, and therefore the intervention will occur at what is arguably an optimum time.

Although it may be preferable to treat adolescents with psychosis at home, within the region in which the study was conducted they are typically admitted to hospital due to lack of community service provision. The length of their stay depends on the individual, their circumstances and the severity of their symptoms. Previously, patients were treated with drug therapy and psychological treatment was only offered if medication appeared to be unsuccessful. This frequently meant that a patient's symptoms would be entrenched by the time psychology became involved. Part of the rationale for this study was to investigate the efficacy of using a psychological intervention, alongside standard treatment (which may well include drug therapy), from the start of a patient's admission.

Previous studies have tended to use lengthy and intensive interventions (e.g. Drury et al., 1996a, b, 2000). The proposed study aims to develop a realistic but effective protocol for the psychological treatment of adolescents with psychosis in an inpatient unit. At present the unit only has permanent funding for a part-time clinical psychologist and temporary funding for a full-time assistant psychologist. Consequently, the intervention needs to be less labour intensive and of relatively short duration. Given the context and resources available, the single case design offers a number of distinct advantages. Gumley and Power (2000) argue that "this methodology enables a close examination of the effects of particular interventions and facilitates the development of novel interventions". These advantages will be of particular use for this study given that we are adapting an approach that has been developed for use with adults.

Expected outcomes

Taking into consideration the rationale for this study and the research literature discussed above, the following outcomes were expected.

- That the participant's psychotic symptoms would reduce over the course of the intervention.
- That the participant's self-esteem would be low at baseline but would increase over the course of the intervention.
- That the participant's levels of anxiety and depression would be clinically significant at baseline but would reduce, hopefully to a non-significant level (as validated by White, Leach, Sims Atkinson, & Cottrell, 1999), by the end of the intervention.

- That the participant's beliefs about herself and others' opinions of her would be negative at baseline but would become more positive over the course of intervention.
- That the participant's recovery style would become more integrative over the course of the intervention.

Method

Design

The AB experimental design was chosen because CBT is considered to continue to have an effect after the therapeutic intervention is complete. Therefore, it is not appropriate for more complex single case experimental designs that require the complete withdrawal of an intervention. Following a baseline measurement (A) the participant received a 16-week CBT intervention for psychotic symptoms (B).

Measures

The same series of assessments were administered at baseline, mid and post intervention; the Culture Free Self Esteem Inventory (CFSEI-2) (Battle, 1992) and the Positive and Negative Syndrome Scale (PANSS) (Kay, Fiszbein, & Opler, 1987). An additional measure, assessing recovery style, the Recovery Style Questionnaire (RSQ) (Drayton et al., 1998), was administered mid and post intervention. The participant also completed two self-report measures, the Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983) and the Evaluative Beliefs Scale (EBS) (Chadwick et al., 1999), on a weekly basis throughout the course of the study.

Participant

The main criterion for inclusion was the presence of at least one positive psychotic symptom (e.g. delusions, conceptual disorganization, hallucinations, grandiosity, hostility, suspiciousness), as measured by the PANSS. It was also necessary for the participant to be able to engage with a cognitive behavioural approach e.g. be experiencing some level of distress and be able to disclose psychotic symptoms.

The participant was a 15-year-old female who was an inpatient in an adolescent psychiatric unit. The participant was an only child who was adopted at 10 days old. There were no difficulties reported with the pregnancy, birth or development. Despite a number of prolonged absences from school (due initially to physical illness and later to her emerging mental health problems), the participant had been doing well academically, was planning to take GCSEs, and had ambitions to work in the field of journalism. Her father worked as an engineer and her mother was a part time shop attendant.

A consultant psychiatrist diagnosed the participant as experiencing an acute psychotic episode. Upon admission, the participant had refused to go to school for the past 2 months (having only been intermittently in the preceding 4 months) and was avoiding any social contact. She was experiencing anxiety and panic attacks, had been suffering from depression for over a year, and had increasing feelings of paranoia that people (including her family)

were laughing at her. The participant reported experiencing auditory hallucinations for a period of roughly 3 months. They occurred on a daily basis and were worse when she was feeling low. The initial assessment using the PANSS indicated that she was experiencing three positive symptoms at a moderate/severe level. These were delusions, hallucinations and suspiciousness/persecution. Other symptoms of note were blunted affect, lack of spontaneity, anxiety, depression, and guilt feelings.

Formulation

A biopsychosocial model was used to formulate this case. This model suggests that psychosis occurs within a context of a vulnerable predisposition, that onset is triggered by events (e.g. life events, adverse social circumstances) and that this leads to the disruption in cognitive processes of attention, perception or judgment and is often accompanied by emotional changes (Fowler et al., 1995).

Pre-disposing factors. It is difficult to identify any genetic factors, given that very little is known about the participant's birth family. The participant experienced a number of early stressful life events and losses. Both of her parents were ill for a significant period of time when she was at infant school, including some stays in hospital. Additionally, her father spent a substantial amount of time away from home due to work commitments. It is likely that the participant developed a thinking style, which was based on the world being an unpredictable place, where she had little control, making her more susceptible to depression (Beck, Rush, Shaw, & Emery, 1979). She reported remembering this period of time well, and wanting to help her parents but feeling unable to. Therefore, she had already developed feelings of helplessness and hopelessness, which typically are connected to low self-esteem (Fennel, 1999).

The family seemed to cope by trying to carry on as normal. There may have been some denial of the difficulties, which could have provided the participant with a model of how to detach from difficult feelings. It is also possible that her parents may have inadvertently reinforced illness as a way of eliciting attention, hence the subsequent development of somatic complaints.

Precipitating factors. The participant's difficulties first became apparent when negotiating puberty and adjusting to secondary school. A viral infection caused her to be absent from school for over a month and is likely to have triggered the feelings of helplessness and hopelessness she felt as a young child when her parents were ill. When she tried to return to school, she found that she could not cope. This seemed to reinforce the feelings of self-loathing (which may also have been connected to her understanding of why she was adopted e.g. "I was bad and my parents did not want me") and the view that she was a failure. She began to lack confidence socially and therefore started to avoid social situations. These difficulties were reinforced when just over 6 months later recurrent tonsillitis led to a tonsillectomy. A further precipitating factor appears to have been the family's relocation after she had started secondary school. This resulted in further losses for the participant, including her social support. It appears that the development of the voices was a reaction to some very stressful life events and transitions, which led to very low self-esteem and negative thinking.

Maintaining factors. The participant's difficulties appear to have been maintained by her thinking style, external locus of control and negative self-beliefs (e.g. "I'm a bad person", "I

deserve to die because I'm not good enough and always cause everyone else pain", "People are out to get me"). It is likely that these beliefs also led to the expectation that she would be rejected or disliked; therefore she felt anxious in social situations. Her feelings of hopelessness caused her to feel depressed and occasionally she used self-harm as a way of expressing her emotions.

It is also likely that her difficulties have been maintained by her parents' style of parenting and high levels of expressed emotion. Her mother seems to tend towards "permissive parenting", which is characterized by a high level of warmth and intrusiveness (this type of over-involvement could have developed at an early age when her father was absent due to his job) and a low level of control. This parenting style can inadvertently reinforce problem behaviours (Carr, 1999).

Procedure

A qualified clinical psychologist administered the baseline assessment within a week of the participant's admission to the unit. This assessment provided the researchers with an initial opportunity to determine the suitability of the participant for CBT. Once suitability had been ascertained the participant received a series of 16 weekly individual sessions (inclusive of a period of engagement and formulation) using a cognitive behavioural approach. The sessions, lasting an hour each, were aimed to be on the same day and time each week, although this was not always possible. During each of the sessions the HADS and the EBS were administered.

The cognitive behavioural approach used was based on that of Chadwick et al. (1996). A specific psychotic symptom is identified, which the participant is finding distressing. The events or situations that trigger this symptom are assessed and it is established whether the participant is most worried about the psychotic symptom or her emotional response. The participant's beliefs, images, inferences and/or evaluations about the trigger are assessed and a formulation is used to show the connection between these and the emotional or behavioural responses. In this case, the target symptom was the voices (in her head and from the radio and TV) making critical comments (e.g. "you're horrible and shouldn't be alive") and commands (e.g. "you should kill yourself"). The voices seemed to occur more in stressful circumstances, particularly when there were large groups of people around. The participant believed that these voices could read her mind and knew all about her past. She saw the voices as omnipotent and "better" (more powerful) than her. However, she was unable to provide any explanation about where they came from or why they occurred. Developing a joint formulation is often a major difficulty in working with adolescents and the stock "don't know" response is very common. In this case, a simple but concrete intervention that the participant could see and accordingly alter her assumption was the most effective way of working with her.

The participant thought that if she did not comply with the voices something bad would happen. This thought made her feel very scared. She additionally thought that compliance with the voices would make them "go away". She had taken three overdoses and was also self-harming (head banging, face slapping and cutting) in response to commands from the voices. The first phase of the intervention involved encouraging the participant to monitor herself in terms of the connection between her thoughts, feelings and behaviours and the voices' commands. The discussion initially centred on the fact that the voices did not go away, even when she did comply with them, and therefore her belief was incorrect. She was then assisted in thinking about all of the times the voices had given her a command and she had not

complied e.g. she reported that the voices had told her to cut herself but she had been unable to access a sharp object as she was in hospital and closely monitored. She was able to see that on these occasions nothing bad had happened; therefore she began to doubt some of her beliefs and her anxiety began to reduce. The next stage involved thinking about ways of reducing her distress without harming herself.

Part way through the intervention it was felt that the participant had stabilized sufficiently to benefit from anxiety management and confidence building work. An assistant psychologist conducted two additional weekly sessions of between 30–45 minutes. A cognitive behavioural approach was used and the participant was supported in working through a hierarchy of anxiety provoking situations in the community. The participant was encouraged to control anxiety using breathing techniques, distraction and challenging her negative automatic thoughts. Mid and post intervention assessments were administered by an assistant psychologist. All the baseline measures were administered, as well as the RSQ.

In addition to the CBT intervention, the participant was also receiving the routine care package from the multi-disciplinary team on the inpatient unit. This included the involvement of nursing staff, psychiatrists and attendance at the on-site school. The participant was also involved in a number of weekly group sessions on the unit. The participant had a nursing care co-ordinator who met with her on a one-to-one basis each week. She also had regular meetings with a member of the psychiatry team. As part of the routine inpatient care package the participant received a number of pharmacological interventions. Details of medication and dosages changes were collated and plotted alongside the assessment and self-report data.

Results

A simple time series AB design was employed to monitor the effects of the cognitive behavioural intervention for psychosis.

Assessments

All results are reported in Table 1. The participant's scores for the PANSS negative, general psychopathology and total scales all reduced between the baseline and mid-intervention, and reduced further post intervention. However, the positive scale score had (whilst having reduced mid-intervention), increased again post-intervention, although it remained slightly lower than the baseline score.

No significant changes were apparent in the participant's scores on the other measures. Her CFSEI scores fell within the "very low" category and worsened slightly throughout the intervention. The score on the lie scale indicated that the participant was not completing the form defensively or answering in a socially desirable way. Therefore, her self-esteem scores are likely to be an accurate reflection of how she felt about herself. On the RSQ, the participant's score represented a mixed picture in which sealing over predominated, although post intervention she endorsed marginally more integrating statements than she had mid-intervention.

Weekly self report measures

Figure 1 suggests that the participant's scores for anxiety and depression have fluctuated throughout the intervention. However, the linear tendency lines show more clearly that a

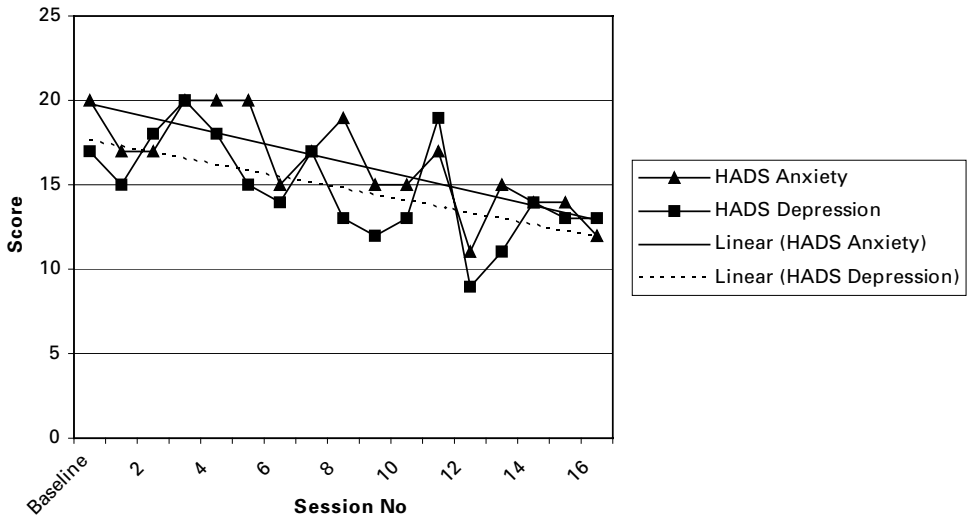


Figure 1. Graph to represent the participants HADS scores throughout the course of the intervention

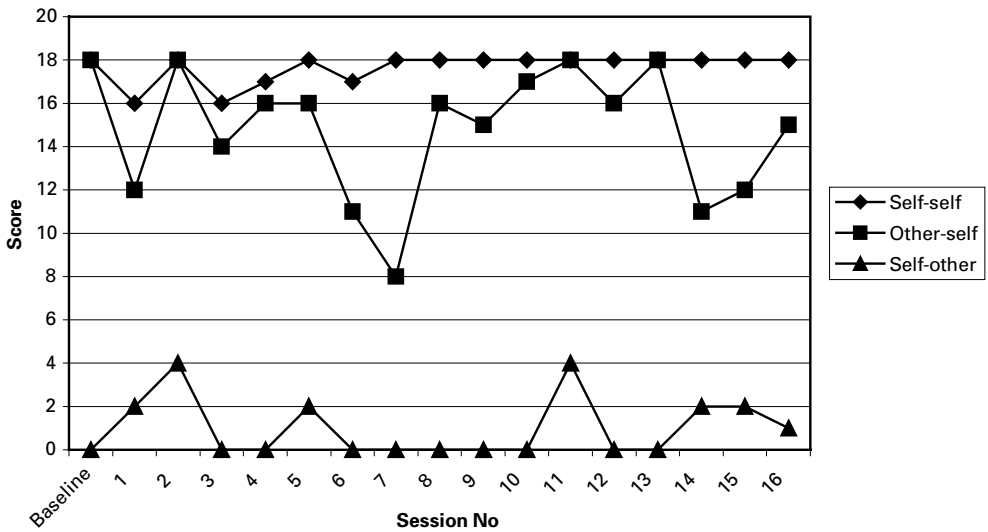


Figure 2. Graph to represent the participant’s scores on the EBS over the course of the intervention

gradual reduction in the anxiety and depression scores was achieved. The participant’s anxiety score remained slightly higher than the depression score throughout the intervention. However, despite the gradual reduction in scores both anxiety and depression remain just above the clinical cut off (as validated by White et al., 1999) at the end of the intervention.

Figure 2 indicates that the participant’s negative evaluations of herself have remained high throughout the intervention. However, there have been a number of considerable reductions

Table 1. Scores on measures at baseline, mid and post intervention

	PANSS				CFSEI	RSQ
	Positive	Negative	General	Total		
Baseline	20	24	52	96	6	–
Mid	13	21	40	74	5	4
Post	18	19	32	69	3	4

in her beliefs about other people's negative evaluations of her. In line with the findings of Chadwick et al. (1999), the Figure 2 indicates that the participant's negative evaluations about others have remained consistently low throughout the intervention.

Medication

The participant's medication was also monitored. At the start of the intervention the participant was prescribed Quetiapine and Paroxetine. The Quetiapine was gradually increased but the dosage remained the same from the third week of the intervention, whereas the Paroxetine was stopped completely in the sixth week. The possible implications of this medication will be discussed in the following section.

Discussion

Psychotic symptoms

The results show that the participant's psychotic symptoms had reduced over the course of the intervention, in accordance with the expected outcome. The increase in her positive scale score, between the mid- and post-intervention assessments, was probably due to the fact that the participant began to hear voices again. During this period the discharge planning had commenced due to the good progress being made by the participant. The process of gradual reintegration to home and a new school had begun. It is likely that the stress of these changes had triggered a reoccurrence of the voices.

Self-esteem

The results show that the participant's level of self-esteem was very low throughout the intervention (see Table 1). This finding supports the argument of Chadwick et al. (1999) that individuals who experience psychosis, and persecutory delusions in particular, are likely to have low self-esteem. The participant was experiencing persecutory delusions at baseline and at the end of phase C, although they had reduced at the end of phase B. It is also suggested that persecutory delusions correspond to ongoing negative beliefs about oneself and others opinions of self, which may precede the onset of psychosis (Chadwick et al., 1999; Fowler, 2000). Thus, it seems likely that the participant's continuing low levels of self-esteem were related to her ongoing maintenance of negative self-self and other-self evaluations.

Anxiety and depression

In accordance with the expected outcome, the results show that both anxiety and depression levels decreased throughout the course of the intervention (see Figure 1). However, scores for both anxiety and depression were both still clinically significant post-intervention (White et al., 1999). It would not be unreasonable to presume that the gradual integration back home and the reoccurrence of hearing voices may have made the participant feel more anxious, and hence more depressed. Despite this her self-reported anxiety scores continued to decrease towards the end of the intervention. This suggests that the additional anxiety management component introduced midway through the intervention had a positive effect in enabling the participant to further reduce her levels of anxiety and depression, despite having to face some significant life changes. During the anxiety management work the participant found it hard to recognize her achievements because she felt that these were things that she “should be able to do anyway”. This type of thinking suggests that the negative person evaluations may have influenced her scores for anxiety and depression.

Person evaluations

The results indicate that although the participant’s negative evaluations of herself remained high, there were a number of improvements in her beliefs about other people’s evaluations of her (see Figure 2). It is hard to identify any particular reason for this reduction, but it is clear that the participant was unable to maintain them. McGorry et al. (1991) argued that the humiliation associated with social predicament and the trauma associated with hospitalization may reinforce negative beliefs about oneself. Thus, it seems possible that it may have been hard for the participant to maintain any improvements in her negative thinking style whilst she remained an inpatient. Chadwick et al. (1999) used the HADS as a comparison to assess the concurrent validity of the EBS. They found that self-self and other-self negative evaluations (but not self-other) were connected with anxiety and depression. In addition, Beck (1987) and Ellis (1962) both propose that there is a strong connection between negative person evaluations and significant emotional distress. Therefore, it is interesting that whilst the participant’s anxiety and depression scores reduced, her negative person evaluations did not seem to improve.

The participant’s negative person evaluations remained relatively stable throughout the intervention and may be explained by Drayton et al. (1998). They found that there is a significant relationship between negative self-evaluations and a perceived lack of care in childhood. Participants in their study saw parents as being less caring and more over protective than did a normal population. This perception may well be very similar to that of the participant in this study. Unfortunately, this study has not formally measured perceptions of parenting but it may be a useful concept to consider when planning future research.

Recovery style

Contrary to the expected outcome, the participant’s score on the RSQ remained the same at mid- and post-intervention. That is, it indicated a mixed picture in which “sealing over” predominated. This suggests that the participant had a tendency to isolate the psychotic experience from the rest of her life. Drayton et al. (1998) in their description of the concept of sealing over state that “cause is presumed separate from personal problems . . . the patient

is disinclined to any investigation of his symptoms". If these characteristics are true of the participant, it may explain some of her rigidity and apparent difficulty adopting some cognitive behavioural techniques.

Drayton (1995) found that depression and suicide attempts (as shown by the participant) were significant indicators of problematic adaptation to psychosis. It appears that an important factor in predicting the emergence of depression in people with psychosis is their attitudes, inferences and evaluations about themselves and their illness. Chadwick et al. (1996) argue that it is the appraisal of the psychosis, rather than the severity of the illness per se, that will predict successful coping and favourable outcomes for an individual. It could therefore be argued that the participant's negative person evaluations have played an important role in her tendency to seal over. This is in keeping with the finding of Drayton et al. (1998) that those participants who used the sealing-over recovery style made significantly more negative self-self evaluations than those in the integrative category.

Medication

It is possible that the medication the participant was receiving may have been responsible for the improvements shown on the PANSS and HADS. Quetiapine has been identified as particularly effective in treating the positive symptoms of psychosis (British Medical Association, 2001) and it is possible that taking this medication may have affected the participant's scores on the PANSS. However, the score on the positive scale of the PANSS actually increased even though the participant was still taking quetiapine.

Paroxetine is effective in the treatment of depression and anxiety. The participant's scores on the anxiety and depression scales of the HADS continued to reduce long after the paroxetine had been stopped. This suggests that the participant's improvement, particularly with regard to symptoms of anxiety and depression, can be attributed to the effect of the psychological intervention. It is also possible that ongoing drug therapy may have had a detrimental effect on the participant, rather than being the cause of the observed improvements. Medication can suppress people's thoughts and emotions, and make it hard for them to resolve certain issues. In addition, Reeves (2000) argues that the way in which medication is given can reinforce people's negative beliefs about themselves, specifically that their world is controlled by others. Reeves (2000) goes on to describe recovery as "a far more fundamental change than simply the removal or suppression of symptoms".

General issues

There were a number of methodological issues arising in the design and conducting of this study. Both researchers worked closely with the multidisciplinary team on the unit. It would have been preferable to use a researcher who was blind to the study to conduct the baseline, mid- and post-intervention assessments but this was not feasible due to resource constraints. It may also have been preferable to keep the rest of the multidisciplinary team blind to the research but this was not deemed ethical. In addition, ideally it would have been useful to conduct a further follow-up assessment with the participant but unfortunately this was not possible due to time constraints. Whilst the majority of the measures used were well validated, the EBS, the PANSS and RSQ have not been validated for use with adolescents. However, the questions seemed appropriate and the participants did not report any difficulties in completing either measure. It

was not felt that the use of these measures has had an effect on the validity of the results in this study, but these issues highlight the lack of age appropriate resources/assessments available for use with children and adolescents experiencing psychosis. Another issue is that of the repeatability of the EBS, which has yet to be validated as an outcome measure (Chadwick et al., 1999). This presents the possibility that there may be some issues with regard to learned responses. However, the results did not indicate that the participant was giving the same responses or trying to give socially desirable responses. A final methodological issue is that whilst the study attempted to measure thoughts and feelings, behaviour was only measured as part of the PANSS. Future research may find it useful to monitor behaviour in a more objective way (e.g. through observations on the unit and/or incidence of self-harm) and to compare this with self-reported thoughts and feelings.

A number of other more general issues are concerned with the course of the participant's illness. Towards the end of the intervention the consultant psychiatrist's opinion was that although the participant no longer required inpatient care she, and her family, would need long term support in the community. The participant seemed quite rigid in her beliefs and whilst she reported finding cognitive behavioural techniques useful in sessions she appeared to have considerable difficulty using them in "real life" situations (although the anxiety management work did address some of these issues). There are a number of factors that may have contributed to these difficulties. Throughout the course of the intervention it became apparent that the family environment was possibly helping to maintain the participant's difficulties. Although no formal family work had been undertaken during the participant's admission to the unit it was part of the discharge plan.

Furthermore, the issue of the participant's adoption should have been addressed during admission as it seemed that this issue was helping to maintain her negative person evaluations. Thus, there are a number of possible reasons for the limited improvement made by the participant. These highlight the importance of planning appropriate treatment that addresses the biological, psychological and social aspects of an individual's difficulties.

Conclusion

To conclude, this case study has shown some positive effects for the participant, especially with regard to her psychotic symptoms and levels of anxiety and depression. Given that the medication taken by the participant remained relatively stable throughout the majority of the intervention it is likely that the improvements were due to the CBT intervention. However, this is by no means proven. Although the participant did not receive any other formal therapy there are a number of other factors associated with admission to the unit that may have contributed to the improvements (e.g. social milieu, onsite school and peer support). Additionally, the results show that there was no improvement in the participant's self-esteem and recovery style. It appears that the maintenance of negative self-self and other-self evaluations is likely to have had a detrimental effect on the participant's ability to increase self-esteem, change recovery style, and also to further reduce psychotic symptoms, anxiety and depression. Thus further research is needed to determine the efficacy of using CBT with adolescents experiencing psychosis from the initial stages of their admission and also the importance of negative person evaluations in the development and maintenance of psychosis. In the long term a randomized controlled trial would be the ideal method by which to investigate the efficacy of CBT against the standard inpatient care. However, prior to this it would seem useful to conduct a further

series of single case studies in an attempt to gain a greater understanding of the effects of CBT on adolescents with psychosis and also to investigate alternative methods of targeting negative person evaluations and factors such as low self-esteem.

References

- AMERICAN PSYCHIATRIC ASSOCIATION (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., rev.). Washington, DC: Author.
- BATTLE, J. (1992). *Culture free self esteem inventories* (2nd ed.). Austin, Texas: Pro-Ed.
- BECK, A. T. (1987). Cognitive models of depression. *Journal of Cognitive Psychotherapy: An International Quarterly*, 1, 5–37.
- BECK, A. T., RUSH, A. J., SHAW, B. F., & EMERY, G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.
- BIRCHWOOD, M. (2000). The critical period for early intervention. In M. Birchwood, D. Fowler & C. Jackson (Eds.), *Early intervention in psychosis: A guide to concepts, evidence and interventions* (pp. 28–63). Chichester: Wiley.
- BIRCHWOOD, M., MCGORRY, P., & JACKSON, H. (1997). Early intervention in schizophrenia. *British Journal of Psychiatry*, 170, 2–5.
- BIRCHWOOD, M., TODD, P., & JACKSON, C. (1998). Early intervention in psychosis: The critical period hypothesis. *British Journal of Psychiatry*, 172 (suppl. 33), 53–59.
- BRITISH MEDICAL ASSOCIATION (2001). *New guide to medicine and drugs*. London: Dorling Kindersley.
- BRITISH PSYCHOLOGICAL SOCIETY (2000). *Recent advances in understanding mental illness and psychotic experiences*. Leicester: The British Psychological Society.
- CARR, A. (1999). *The handbook of child and adolescent clinical psychology: A contextual approach*. London: Routledge.
- CHADWICK, P. D. J., BIRCHWOOD, M., & TROWER, P. (1996). *Cognitive therapy with delusions and voices*. Chichester: Wiley.
- CHADWICK, P., TROWER, P., & DAGNAN, D. (1999). Measuring negative person evaluations: The evaluative beliefs scale. *Cognitive Therapy and Research*, 23, 549–559.
- CLARK, A. F., & LEWIS, S. W. (1998). Practitioner review: Treatment of schizophrenia in childhood and adolescence. *Journal of Child Psychology and Psychiatry*, 39, 1071–1081.
- DEPARTMENT OF HEALTH (1999). *The national service framework for mental health: Modern standards and service models*. London: Department of Health.
- DEPARTMENT OF HEALTH (2000). *The national plan: A plan for investment, a plan for reform*. London: Department of Health.
- DRAYTON, M. (1995). The emotional impact of schizophrenia. *Clinical Psychology Forum*, 82, 15–20.
- DRAYTON, M., BIRCHWOOD, M., & TROWER, P. (1998). Early attachment experience and recovery from psychosis. *British Journal of Clinical Psychology*, 37, 269–284.
- DRURY, V., BIRCHWOOD, M., & COCHRANE, R. (2000). Cognitive therapy and recovery from acute psychosis: A controlled trial, III. Five-year follow-up. *British Journal of Psychiatry*, 177, 8–14.
- DRURY, V., BIRCHWOOD, M., COCHRANE, R., & MACMILLAN, F. (1996a). Cognitive therapy and recovery from acute psychosis: A controlled trial, I. Impact upon psychotic symptoms. *British Journal of Psychiatry*, 169, 593–601.
- DRURY, V., BIRCHWOOD, M., COCHRANE, R., & MACMILLAN, F. (1996b). Cognitive therapy and recovery from acute psychosis: A controlled trial, II. Impact on recovery time. *British Journal of Psychiatry*, 169, 602–607.
- EDWARDS, J., & MCGORRY, P. D. (1998). Early intervention in psychotic disorders: A critical step in the prevention of psychological morbidity. In C. Perris & P. D. McGorry (Eds.), *Cognitive*

- psychotherapy of psychotic and personality disorders: Handbook of theory and practice*. Chichester: John Wiley & Sons.
- ELLIS, A. (1962). *Reason and emotion in psychotherapy*. Secaucus, New Jersey: Lyle Stuart.
- FENNEL, M. (1999). *Overcoming low self-esteem: A self-help guide using cognitive behavioural techniques*. London: Constable & Robinson.
- FOWLER, D. (2000). Psychological formulation of early episodes of psychosis: A cognitive model. In M. Birchwood, D. Fowler & C. Jackson (Eds.), *Early intervention in psychosis*. Chichester: John Wiley & Sons.
- FOWLER, D., GARETY, P. A., & KUIPERS, E. (1995). *Cognitive behaviour therapy for psychosis*. Chichester: Wiley.
- FREEMAN, D., GARETY, P., FOWLER, D., KUIPERS, E., DUNN, G., BEBBINGTON, P., & HADLEY, C. (1998). The London-East Anglia randomized controlled trial of cognitive behaviour therapy for psychosis IV: Self-esteem and persecutory delusions. *British Journal of Clinical Psychology*, *37*, 415–430.
- GUMLEY, A. I., & POWER, K. G. (2000). Is targeting cognitive therapy during relapse in psychosis feasible? *Behavioural and Cognitive Psychotherapy*, *28*, 161–174.
- HADDOCK, G., MORRISON, A. P., HOPKINS, R., LEWIS, S., & TARRIER, N. (1998). Individual cognitive-behavioural interventions in early psychosis. *British Journal of Psychiatry*, *172* (suppl. 33), 101–106.
- HADDOCK, G., TARRIER, N., MORRISON, A. P., HOPKINS, R., DRAKE, R., & LEWIS, S. (1999). A pilot study evaluating the effectiveness of individual inpatient cognitive behaviour therapy in early psychosis. *Social Psychiatry and Psychiatric Epidemiology*, *34*, 254–258.
- HADDOCK, G., TARRIER, N., SPAULDING, W., YUSUPOFF, L., KINNEY, C., & MCCARTHY, E. (1998). Individual cognitive-behaviour therapy in the treatment of hallucinations and delusions: A review. *Clinical Psychology Review*, *18*, 821–838.
- HAFNER, H., MAURER, K., LOFFLER, W., BUSTAMANTE, S., AN DER HEIDEN, W., RIECHER-ROSSLER, A., & NOWOTNY, B. (1995). Onset and early course of schizophrenia. In H. Hafner & W. F. Gattaz (Eds.), *Search for the causes of schizophrenia* (Vol. III, pp. 43–66). New York: Springer.
- HARROP, C., & TROWER, P. (2001). Why does schizophrenia develop at late adolescence? *Clinical Psychology Review*, *21*, 241–266.
- JOHNSTONE, E. C. (1991). Disabilities and circumstances of schizophrenia patients: A follow-up study. *British Journal of Psychiatry*, *159* (suppl. 3), 46.
- KAY, S. R., FISZBEIN, A., & OPLER, L. A. (1987). The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin*, *13*, 261–276.
- MCGLASHAN, T. H. (1987). Recovery style from mental illness and long term outcome. *Journal of Nervous and Mental Diseases*, *175*, 681–685.
- MCGLASHAN, T. H. (1998). Early detection and intervention with schizophrenia: Rationale and research. *British Journal of Psychiatry*, *172* (suppl. 33), 3–6.
- MCGLASHAN, T. H., LEVY, S. T., & CARPENTER, W. D. (1975). Integration and sealing over: Clinically distinct recovery styles from schizophrenia. *Archives of General Psychiatry*, *32*, 1269–1272.
- MCGORRY, P., CHANEN, A., MCCARTHY, E., VAN RIEL, R., MCKENZIE, D., & SINGH, B. S. (1991). Post-traumatic stress disorder following recent onset psychosis: An unrecognised post-psychotic syndrome. *Journal of Nervous Mental Disease*, *179*, 253–258.
- MCGORRY, P. D., EDWARDS, J., MIHALOPOULOS, C., HARRIGAN, S. M., & JACKSON, H. J. (1996). EPPIC: An evolving system of early detection and optimal management. *Schizophrenia Bulletin*, *22*, 305–326.
- MCGORRY, P. D., MCFARLANE, C., PATTON, G., BELL, R., JACKSON, H., HIBBET, M., & BOWER, G. (1995). The prevalence of prodromal symptoms of schizophrenia in adolescents: A preliminary survey. *Acta Psychiatrica Scandinavica*, *92*, 241–249.

- NELSON, H. (1997). *Cognitive behavioural therapy with schizophrenia: A practice manual*. Cheltenham: Stanley Thomas.
- NORMAN, R. M. G., & TOWNSEND, L. A. (1999). Cognitive-behavioural therapy for psychosis: A Status report. *Canadian Journal of Psychiatry*, *44*, 245–252.
- PARRY-JONES, W. (1991). Adolescent psychoses: Treatment and service provision. *Archives of Disease in Childhood*, *66*, 1459–1462.
- REEVES, A. (2000). Creative journeys of recovery: A survivor perspective. In M. Birchwood, D. Fowler & C. Jackson (Eds.), *Early intervention in psychosis*. Chichester: John Wiley & Sons.
- SILVERSTONE, P. H. (1991). Low self-esteem in different psychiatric conditions. *British Journal of Clinical Psychology*, *30*, 185–188.
- TARRIER, N., BECKETT, R., HARWOOD, S., BAKER, A., YUSUPOFF, L., & UGARTEBURU, I. (1993). A trial of two cognitive-behavioural methods of treating drug resistant psychotic symptoms in schizophrenic patients: I. Outcome. *British Journal of Psychiatry*, *162*, 524–532.
- TOLBERT, H. A. (1996). Psychoses in children and adolescents: A review. *Journal of Clinical Psychiatry*, *55* (suppl. 3), 4–8.
- VOLKMAR, F. R. (1996). Childhood and adolescent psychosis: A review of the past 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry*, *35*, 843–851.
- WALKUP, J., & GALLAGHER, S. K. (1999). Schizophrenia and the life course: National findings on gender differences in disability and service use. *International Journal of Aging and Human Development*, *49*, 79–105.
- WHITE, D., LEACH, C., SIMS, R., ATKINSON, M., & COTTRELL, D. (1999). The validation of the hospital anxiety and depression scale for use with adolescents. *British Journal of Psychiatry*, *175*, 452–454.
- ZIGMOND, A. S., & SNAITH, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica*, *67*, 361–370.