

Cognitive-Behavioral Therapy for Schizophrenia: A Review

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Abstract: Cognitive-behavioral therapy (CBT) has a proven role as an adjunct to antipsychotic medication and remediative approaches such as social skills training in the management of residual symptoms of chronic schizophrenia. Positive symptoms, depression, and overall symptoms appear to be viable treatment targets for CBT with a less pronounced effect on negative symptoms. The effect size at end of therapy is strong, with durability at short-term follow up. CBT can be used safely in patients with schizophrenia, and caregivers can help with homework exercises. There is also evidence that psychiatric nurses in the community can use CBT effectively with this patient group under supervision. CBT can be combined with family therapy and assertive community treatment programs targeted to reduce relapse. CBT improves the coping of patients with schizophrenia through improved adherence and symptom management. CBT techniques include development of trust, normalizing, coping strategy enhancement, reality testing, and work with dysfunctional affective and behavioral reactions to psychotic symptoms. An enhanced response to CBT would be expected when given with low dose cognitively enhancing atypical antipsychotic medication.

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RATIONALE FOR USING CBT IN THE MANAGEMENT OF SCHIZOPHRENIA

Schizophrenia, as classified by Kraepelin (1), was believed to represent an organic cerebral disease (dementia praecox) with a uniformly poor prognosis of ongoing deterioration punctuated by episodic relapse. However, Kraepelin's sample was biased in that he only classified a subgroup of all patients with schizophrenia—patients with very severe illness and unremitting positive and negative symptoms, who had often deteriorated further owing to the effects of chronic institutionalization. Kraepelin did not include those patients who had recovered from a single episode or who were coping with relapses without deterioration, although such courses have been well described in subsequent long-term follow up studies of patients with schizophrenia (2). Indeed, a recent 15- and 25-year follow-up of a cohort of patients with schizophrenia who remained in contact with services found that the majority achieved a favorable clinical outcome in the long term (3).

Given this variation in outcome, a more optimistic clinical approach to the management of schizophrenia may be indicated. One of the most helpful additions to current treatment modalities would be an effective individualized psychological treatment. Cognitive-behavioral therapy (CBT) appears to have the potential to supply this missing element in the care of patients with schizophrenia. However, if findings concerning longer term outcome in schizophrenia are creating some renewed clinical optimism, this is more than counterbalanced by a number of factors currently operating in the opposite direction that could worsen prognosis. The benefits that could be realized with consistent use of long-term antipsychotic medication are usually not achieved because of poor adherence (4). Poor adherence similarly hinders involvement in rehabilitation programs, leading to the progressively debilitating effects of repeated relapse and rehospitalization. In addition, patients who develop improved insight into the diagnostic label of schizophrenia often find this so stigmatizing that they reject treatment altogether and disengage with

services or become depressed and develop suicidal ideation (5). As well as the risk of self-harm, patients with schizophrenia usually have no paid employment and may drift into socially deprived neighborhoods, where they are increasingly the victims of violence (6). This increased mobility and victimization can have a potent effect by increasing arousal and agitation and leading to worsening isolation, hallucinations, and persecutory paranoid delusions. Patients with schizophrenia in such situations frequently develop secondary psychiatric illness such as agoraphobia or social phobia that further exacerbate core symptoms (7).

The problem of victimization is worsened by the increasing problem of illicit substance use (e.g., use of cannabis, heroin, amphetamine, and cocaine), which leads to reduced adherence and increased rates of relapse (8). In addition, patients with schizophrenia usually have very poorly developed coping strategies, so that patients who begin to hallucinate tend to withdraw socially and not engage in a positive therapeutic style for help with their auditory hallucinations. In CBT, effective coping strategies can be collaboratively developed, leading to symptomatic improvement (9).

Treatment-resistant schizophrenia is also a relatively common problem. Even when patients with schizophrenia fully adhere to antipsychotic medication regimes, up to 50% will have ongoing positive or negative symptoms (10), with 20%–30% of people with chronic schizophrenia demonstrating very little symptomatic response to adequate trials of conventional antipsychotic medications (11). A switch to clozapine will achieve an improved clinical outcome (e.g., 20% improvement level in 14% of cases) (12). A recent review of atypical antipsychotics (13) reported that there is strong evidence that clozapine is superior to conventional antipsychotics in symptom reduction in both the short and longer terms, although there was no difference in short-term relapse rates. Even with the use of optimal doses of clozapine, 40% of patients with treatment-resistant schizophrenia do not respond. An effective psychological treatment is currently the only option for such patients to ameliorate disabling symptoms.

Even when positive symptoms are well controlled with antipsychotic medication, an even greater residue of untreated depression, anxiety, obsessive-compulsive and phobic symptoms can remain, which might benefit from CBT. Many patients with treatment-resistant illness are further disabled by the use of excessively high doses of antipsychotics and polypharmacy. This often happens because, given the lack of complementary treatment options, clinicians attempt to improve efficacy by increasing medication dose at each

relapse. The side effects of such polypharmacy may include a worsening of cognitive deficits and negative symptoms. These worsenings of attention, recall, and motivation are major impediments to the implementation of any effective psychological treatment in schizophrenia. Conventional antipsychotics are often less helpful with these cognitive deficits and negative symptoms and a more rational strategy may be to use low-dose atypical antipsychotics which are more cognitively sparing and more effective in the treatment of negative symptoms. A low dose of an atypical antipsychotic combined with CBT can enhance adherence and improve symptom management, and a synergistic effect might be expected when combining CBT with antipsychotics that enhance cognitive function. It is clear from the preceding discussion that there is a persuasive rationale for considering the use of psychological treatments—including CBT—in schizophrenia.

CBT AS PART OF THE SPECTRUM OF PSYCHOLOGICAL TREATMENTS IN SCHIZOPHRENIA

The standard treatment for schizophrenia in the United Kingdom is case management supplemented with support in a drop-in center or day hospital. Those who are fortunate might have access to some form of supervised work experience. The main face-to-face contact with the patient is provided by the case worker. This is normally a community psychiatric nurse, who would give a depot antipsychotic and/or check for medication side effects and encourage activities. Therefore, effective psychological treatments are not normally made available for these very highly disabled patients.

Given the current system, it is not likely that either case workers or consultant psychiatrists who are prescribing medications are really engaging with their patients to deal with their psychotic symptoms. A psychiatrist would typically spend 15 minutes once every 3 months in the outpatient clinic with the patient, and even then the time would mostly be used to monitor symptoms, medication dose, and side effects. Thus, patients may remain isolated with no practical support to help them cope with their psychotic symptoms. The standard psychosocial management of patients with schizophrenia in the United Kingdom has been reported to be well below what such disabled patients and their caregivers have a right to expect from mental health delivery teams. In contrast, CBT manuals (14, 15) stress the importance of spending increased time with the psychotic patient, building trust and starting to test out the reality of

his or her symptoms. In some patients, a clear spin-off of an improved therapeutic alliance is improved adherence. With the development of improved coping skills, the use of antipsychotic medication often becomes more acceptable and the use of illicit substances diminishes.

The consequences for an individual of developing schizophrenia are usually wide-ranging. The patient will experience distress as a direct result of the psychiatric illness. Furthermore, the illness often has a significant impact on the person's psychological, social, and occupational functioning. Since schizophrenia is a multifaceted condition with the potential for far-reaching consequences, a number of approaches have been developed that attempt to improve functioning in these domains, including psychoeducation, social skills training, cognitive remediation, family therapy, and assertive community treatment (ACT). Before turning to a detailed discussion of the use of CBT in schizophrenia, we first briefly review the rationale and evidence for the use of these other psychosocial interventions in patients with schizophrenia and compare them with CBT. It is also true that each of the following psychosocial interventions either contributes components to a full CBT program (e.g., psychoeducation, social skills training) or could act to complement the delivery of individual CBT (e.g., family interventions, ACT, cognitive remediation).

PSYCHOEDUCATION

When people are faced with serious illness or life events, there is a natural desire to try to make sense of what is going on. As a result, patients and families often request information about the nature of the illness. This need for information has been recognized in the development and delivery of psychoeducational material. Clearly, there are obvious moral, ethical, and legal reasons for providing full information about illness and treatment. Individuals suffering from schizophrenia and their families need information that will help them understand the consequences of the illness. Recent meta-analyses (13, 16) have considered the results of 10 randomized controlled trials of psychoeducation in schizophrenia. There was considerable variation in the quality and content of the interventions, their duration, and the outcome measures that were used. The results of the meta-analyses were generally inconclusive, although clear evidence emerged that psychoeducation had no effect on preventing relapse. The effect on medication adherence, mental state, and insight did not differ from that of standard care. Thus, it appears that psychoeducation alone is of little benefit to

patients suffering from schizophrenia, although it may well be helpful to patients and their families as an adjunctive component of treatment. While CBT uses educative techniques and materials, its aims go far beyond these strategies into case formulation and symptom management.

SOCIAL SKILLS TRAINING

Patients with schizophrenia, especially those with negative symptoms, usually experience difficulties in social and occupational settings. An early psychological approach to these difficulties was to use behavioral therapy to try to normalize behavior. Social skills training was developed to help people with schizophrenia regain their social skills, improve their functioning, and hence reduce symptomatology. Argyle and Kendon viewed social functioning as a set of skills which had to be learned and practiced (17). Social skills training, therefore, attempted to identify social skills deficits and train patients in those skills. Traditional social skills training used instruction, modeling, rehearsal, feedback, and homework to teach or retrain interpersonal skills (including eye contact, speech, and body language) that may improve social functioning.

A recent review by Pilling et al. considered the results of nine randomized controlled trials in which the control group was typically standard care (18). Social skills training had a limited effect on improving behavioral social skills but did not generalize to improved social functioning. Overall, there was little evidence that social skills training reduced relapse rates or length of stay or improved quality of life. However, there was some limited evidence that social skills training did improve mental and social functioning (19). The generally negative overall conclusions appeared to limit the indications for social skills training, since the outcome generally seemed to be improvements *in situ* or in role playing, but little generalization to other settings (20).

As with psychoeducation, it seemed that social skills training on its own would have little in the way of a robust impact on the management of schizophrenia. Social skills training, however, does play a role in CBT, since modeling of normal social interactions takes place within each CBT session. Homework involving graded activity scheduling takes the patient into a variety of different social situations. Reality testing of delusions involves inspecting the social behavior of others. It appears that social skills training can be enhanced in CBT by providing a personal formulation that makes the training meaningful and by focusing on the psychotic symptoms that interfere with social interactions.

COGNITIVE REMEDIATION

A majority of patients with schizophrenia exhibit deficits in psychological and cognitive functioning. These include impairments in memory and attention (21), problem solving, and executive functioning (22). Because such deficits contribute to the distress and disability associated with the illness, attempts have been made to directly target these difficulties by trying to improve performance in these areas. Repeated practice of certain tasks is prescribed in order to rebuild or develop compensatory strategies (in a similar way to the use of remediation in brain injury).

Brenner et al. developed Integrated Psychological Therapy to reduce deficits in these attentional, perceptual, and cognitive domains (23). Five subprograms designed to ameliorate the cognitive and social deficits assumed to be characteristic of schizophrenia were run sequentially on a computer. The participants underwent 3 months of weekly sessions that targeted basic cognitive skills, as addressed in tasks such as card sorting and dealing with word problems. Social skills deficits were addressed by having the individual practice recognition of emotional expressions and interpersonal problem solving. As with behavioral improvements following social skills training, despite improvements on the target tasks following cognitive remediation, there was no evidence of generalization (24). Pilling et al. examined five studies of cognitive remediation (18) and the recent National Institute for Clinical Excellence (NICE) guidelines group (13) considered the results of seven randomized controlled trials in this area. The two reviews broadly found no evidence to suggest that cognitive remediation improved outcomes in the cognitive functions of people with schizophrenia. While there may be improvements on some specific tasks, there was an absence of general improvement across tasks or generalization outside the treatment setting. Although cognitive remediation also seems inadequate on its own, there is a possibility of synergy with CBT. Improved attention as produced by remediation could help improve the quality of homework (e.g., when investigating the evidence that supports or contradicts a delusion).

FAMILY INTERVENTIONS

A broad array of family interventions has been developed for use in schizophrenia, all of which aim to alter the pattern of interaction within the family or caregiver group of the person with schizophrenia in order to reduce the chance of relapse. Brown et al. reported that, following the closure of the asylums, patients with schizophrenia who

returned home to live with their family fared worse than those who went to a hostel or lived alone (25). Attempts to understand this apparently paradoxical result led to the development of a measure of Expressed Emotion (EE). EE is best viewed as the sum total of the emotional climate between the patient with schizophrenia and family or other caregivers. High EE includes critical comments, hostility, and rejection of the patient, or emotional over-involvement. Families with high EE have been found to be associated with higher relapse rates than those with low EE (48% versus 21% median relapse rates in 1 year) (26). Although the different approaches to family therapy use varying combinations of education, support, therapy, and skills training, they all aim to reduce the extent of EE in the household.

Pilling et al. recently reviewed 18 randomized clinical trials of family interventions in schizophrenia with a total of 1467 participants published up to 1999 (27). While the studies differed in a number of dimensions (e.g., use of control groups, type of intervention, outcome measures), a number of broad findings emerged. In particular, family interventions decreased the chance of relapse in comparison to standard care during and for a period of time following treatment. In terms of readmissions within 1 year, single family rather than group family interventions showed significant benefit. This effect was durable up to 2 years after starting treatment. Family interventions have also been found to improve treatment adherence and global adjustment. Overall, the longer the treatment (e.g., more than 10 sessions or longer than 6 months), the more efficacious the results.

While these studies demonstrated the value of family interventions, the entry requirements for participation required that the patient live with or have high levels of contact with family members with a high level of EE. Hence, the findings do not generalize to all people with schizophrenia. Nevertheless, although family therapy does not produce symptomatic improvement in the patient, it does have a potent effect in preventing relapse in a subgroup of patients at high risk of relapse. Family therapy could therefore be seen as an ideal accompaniment to individual CBT for this subgroup of patients.

ASSERTIVE COMMUNITY TREATMENT

Assertive community treatment (ACT) was developed as a response to the program of closure of large psychiatric hospitals, which increased the need for intensive treatment for vulnerable psychotic patients in community settings (28). ACT

was designed to be delivered by a treatment team to high risk patients with severe mental illness. The team has a high staff/patient ratio and delivers services as needed 24 hours a day, 7 days a week; the crucial components of ACT are contact, support, and crisis management. The goals of ACT are to maintain contact, reduce symptoms and relapse, and improve social functioning and quality of life. A Cochrane review concluded that those receiving ACT were significantly more likely to remain in contact with services and less likely to be admitted to hospital (28). There was no difference between ACT and control treatments on mental state or social functioning.

CBT could be added to the ACT program by developing symptom management strategies for delusions and hallucinations based on an individualized formulation. For example, team members could help the psychotic patient work with reality testing homework for delusions or practice strategies for coping with hallucinations.

FEATURES OF CBT FOR SCHIZOPHRENIA

The central notion of CBT is that the way in which people make sense of their environment (including psychotic experiences) influences their affect and behavior. CBT posits that people with emotional disorders such as depression see themselves or the world around them in negative and distorted ways, which lead to distress (depression and anxiety) and behavior (withdrawal) that serve to reinforce and maintain their negativity. For instance, a depressed person attempting to get ready for work spills coffee on her shirt and thinks to herself "typical of me, I am useless, I always mess things up, I may as well stop now before I make things worse." This makes the person feel more sad, she goes back to bed, thus reinforcing the belief that she is useless. Through the use of a number of cognitive and behavioral strategies, people can be helped to evaluate and change their thoughts and behavior so that they are more adaptive and functional, thus reducing the distress they experience. CBT has been shown to be effective for conditions such as depression, and for anxiety disorders such as obsessive-compulsive disorder, post-traumatic stress disorder, and panic disorder.

Central to the CBT approach with schizophrenia is the importance of linking thoughts and feelings about current symptoms and then re-evaluating these thoughts in relation to these symptoms. However, without doubt, the crucial element in CBT for schizophrenia is the formation of a trusting therapeutic alliance. A focus on engaging the psychotic patient is maintained in every session.

The patient's model of symptom initiation and maintenance is always carefully explored before other explanations are considered. The agenda for each session is developed collaboratively but hallucinations and delusions are often high on the list. Patients often want to understand things better, feel more in control, or be able to use better coping skills. Confrontation and collusion are both avoided by maintaining a focus on framing questions and gathering evidence in a non-judgmental manner. Homework exercises are devised to test these possible explanations about the nature and cause of the psychotic symptoms. Through the use of guided discovery, the psychotic patient can often give up dysfunctional explanations. For example, if the patient believes his voices come from Satan, he will probably feel more relaxed once he has considered some less frightening explanations.

Another feature of CBT for schizophrenia that distinguishes it from other types of psychosocial interventions is the importance it places on understanding the onset of psychotic symptoms using a stress vulnerability model (29). This model emphasizes the notion that we all have the capacity to experience psychotic symptoms if we are placed under sufficient stress. However, owing to our individual genetic, physiological, psychological, and social vulnerabilities, we vary in our vulnerability to a psychotic breakdown. Another feature of CBT for schizophrenia that helps distinguish it from other more traditional CBT approaches is the emphasis placed on normalizing psychotic experiences (14). Normalizing is also an important feature in helping patients with obsessive-compulsive disorder feel less anxious about frightening obsessional thoughts. Time is often spent looking at the prevalence of unusual experiences (e.g., voice hearing in the normal population) in order to eliminate catastrophic interpretations of what having these experiences may mean. Such normalizing explanations are reinforced through homework exercises including reading of handouts describing various phenomena, such as the relationship between sleep deprivation and hearing voices (30). These explanations are based on an individualized formulation of the emergence of psychotic symptoms rather than being general educational statements about schizophrenia.

Patients often also have very distressing beliefs about what it means to have the diagnosis of schizophrenia. Therefore, time is also spent examining beliefs about the diagnostic label of schizophrenia to try to decatastrophize these thoughts by providing information about more optimistic views recently published concerning the long-term outcome of the illness. CBT work to improve adher-

ence with medication arises out of these sessions attempting to understand the individual formulation of the patient's schizophrenia. The patients view of taking antipsychotic medication should be carefully explored. Some patients are keen to comply having accepted the nature of the illness. Other patients comply despite a lack of full insight. The third group of patients either use antipsychotic medication erratically or completely refuse. Often this is because they simply cannot see the link between, for example, feeling persecuted and the taking of medicine. As understanding improves through the use of behavioral homework (e.g., diary monitoring of the activities of suspected persecutors), patients will often consider other explanations that are much more compatible with the use of medication. Such explanations often relate to the appreciation of the high levels of stress which they have been under in the prepsychotic period and subsequently. The medications can then be taken to help patients cope with stress while working on the psychotic experiences directly with CBT. Underlying attitudes often disrupt adherence, including such thoughts as "I'm not a pill person," or "Tablets mean you are not coping well," or "I am damaged—no tablet can help." These attitudes are worked with directly using analysis of the evidence, positive logging, use of the belief continuum, operationalizing a negative construct, and the use of role play (31). An example of the latter might be the patient playing the role of a doctor attempting to persuade one of his relatives to take steroids for a severe asthma attack. Sessions on adherence are sometimes best left until there has been a successful experience working on positive psychotic symptoms.

In working with delusions, it is best to begin with more superficial techniques such as peripheral questioning to outline the main areas of delusional impact. From there, behavioral homework can be used to lead to the generation of alternative explanations. Affects such as fear and anger can be reduced in intensity and avoidance tackled in session or out of session with the help of a case manager. Socratic questioning can then be useful as can work on linked underlying core beliefs (32). An example of this might be a core belief, "I am evil," that is linked to a religious delusion.

Case Vignette 1. The following case vignette illustrates how the CBT therapist can introduce the process of reality testing (i.e., collaborative empiricism) with a paranoid patient.

Paranoid patient: The Mafia are observing me to decide how to kill me.

Therapist: You are obviously very fright-

ened... there must be a good reason for this.

Paranoid patient: Do you think it's the Mafia?

Therapist: It's a possibility, but there could be other explanations. How do you know that it's the Mafia?

Paranoid patient: Who else would persecute someone like this?

Therapist: Well, for us to find out together, we need to examine the evidence, although it might feel frightening to do this. I will help you to look into this a bit more.

Here the CBT therapist engages the patient in an open dialogue about the phenomena being experienced, leading to guided reality testing using straightforward behavioral exercises. In doing this, the patient's avoidance is reduced and his anxiety starts to decrease as he considers other possible explanations, such as isolation, use of cocaine, lack of sleep, and mental illness.

By using the principle of collaborative empiricism, the therapist helped to develop a therapeutic alliance with the patient, which facilitated increased understanding of the origin and maintenance of the symptoms. Hallucinations and delusions are targets for engagement and reality testing. When receiving CBT, psychotic patients have a perceived ally who will take their experiences seriously and show an interest in what these strange and frightening experiences may mean.

Case Vignette 2. With hallucinations, the first step is to use a voice diary to look for fluctuations in the experience of hearing voices. This is usually linked to certain behaviors or moods. The content of the voices is also recorded in the diary. Work proceeds to the development of improved use of coping and then to engaging the voices through rational responding and work on attitudes to the voices. The next vignette illustrates how the CBT therapist might use reality testing with a patient who is hallucinating.

Hallucinating patient: There are three voices talking.

Therapist: You seem to be very angry about this experience.

Patient: They are always talking about me—it is a form of torture.

Therapist: What do you think the voices might be?

Patient: I don't know—maybe radiowaves or ultrasound.

Therapist: Can other people hear the voices?

Patient: Probably... yes, they must be able to, they are so loud and clear at times.

Therapist: Well, let's do an experiment. We will put on the tape recorder and attempt to record them.

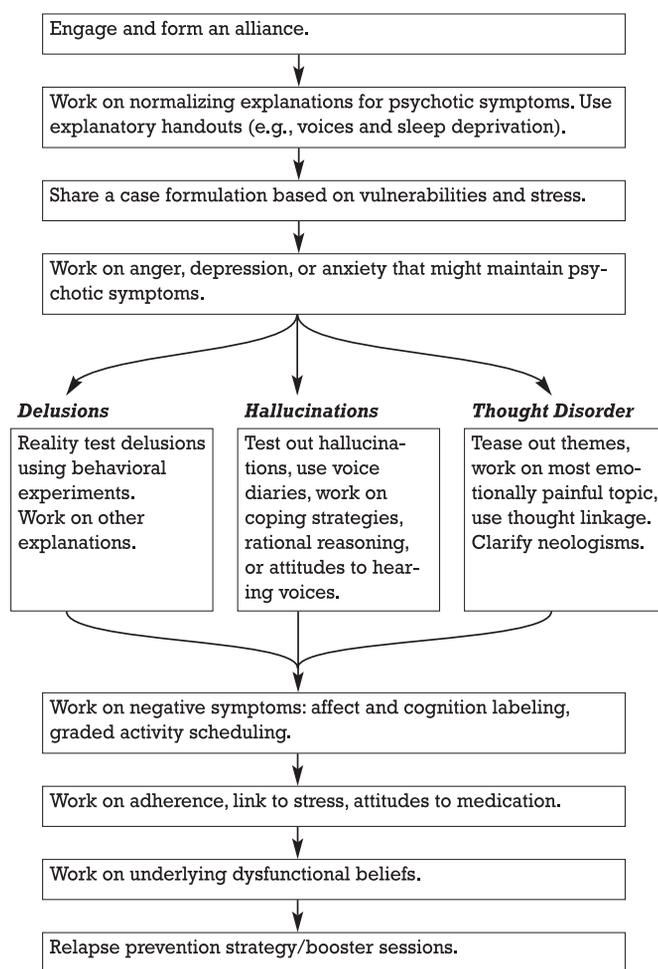
The patient was very relieved to realize that others could not hear the voices as they often made embarrassing comments. The therapist also helped the patient to understand how the emotion of anger usually worsened the voices and how a more rational and less hostile response to the voices would make them less obtrusive. Following this, through the use of a voice diary, behavioral experiments were carried out to discover the most optimal coping strategies. In this case, being busy and being with others reduced voice intensity. This worked particularly well if the patient did not get angry with the voices. She would use rational responses including "It's just stress... no one else can hear them... I will just keep busy or phone a friend." CBT usually ends with the development of a clear understanding of the individualized relapse signature and action plan. To maintain benefits over the long term, booster sessions are likely to be needed (33). A full description of the techniques involved is beyond the scope of this review, but a flow chart of the various stages of therapy and basic techniques is provided in Figure 1.

TREATMENT STUDIES

Recent reviews of the efficacy of CBT in schizophrenia have been positive (27, 34), with a large effect size in residual positive symptoms at the end of therapy ($ES = 0.65$) and continued gains over time ($ES = 0.93$) (35). The positive results in research settings are cost-effective (36) and also appear to translate to clinical practice (37). Benefits have been demonstrated predominantly for residual symptoms in adult patients in the community who received on average 20 sessions over 9 months, with follow-up 3–9 months later. Generally, the studies have recruited patients with longstanding or treatment-resistant psychosis, and all of the participants were also receiving antipsychotic medication.

A recent review by Pilling et al. included the results from eight randomized clinical trials (27), while a review published by NICE in 2002 included 13 randomized clinical trials with data from 1297 patients (13). While the studies differed on a number of dimensions, including duration of intervention, number of sessions, comparison treatment, and outcomes as well as follow-up, some clear findings emerged. CBT seemed to be particularly valuable in helping people with the overall symptoms of schizophrenia. It was reported to be more effective in improving overall symptoms at

Figure 1. Process of CBT Therapy for Schizophrenia



the end of treatment and at 9- to 12-month follow-up in comparison with standard care and other psychological approaches. When compared with active control interventions, such as professional befriending (emotional support and information exchange around neutral subjects), moderately strong effects were seen for both interventions at the end of therapy (38). It is very important to note that the group who received CBT maintained their improvements, whereas the control group lost the benefits of the intervention and returned to pre-intervention levels of symptomatology. At follow-up, the CBT group were clinically significantly improved on overall symptoms, symptoms of schizophrenia, depression, and negative symptoms. There appeared to be no evidence of increased suicidal ideation or self-harming behavior in either group, but, owing to the generally low levels of suicide and self-harm within the follow-up period,

there was insufficient evidence to draw conclusions. Interventions that lasted longer than 3 months were more likely to reduce the risk of relapse. The NICE review found that there was evidence that even brief CBT interventions improved treatment adherence and insight (13).

While evidence is emerging concerning the value of CBT in schizophrenia, it is by no means compelling as yet. One possible reason for this is the speed with which this area has been developing. Because of the real and complex needs of people with schizophrenia, there has been great interest in developing and testing symptom interventions that may be of value and, consequently, a number of randomized clinical trials of CBT were undertaken in the 1990s. Tarrrier et al. confirmed that the cognitive technique of coping strategy enhancement was more effective than problem solving (39). Kuipers et al. was the first randomized trial to report a significant benefit for CBT over treatment as usual in terms of overall symptom improvement (40). This effect proved to be durable at eighteen months (41). Tarrrier et al. tested CBT against supportive counseling and described an odds ratio of 7.8 in favor of CBT for a 50% improvement on positive symptoms (9). However, at follow-up, CBT was no longer superior to supportive counseling, although both were superior to treatment as usual. CBT has been shown to provide additional benefit in the treatment of residual overall symptoms of schizophrenia over and above that provided by clozapine (42). Indeed there is a firm theoretical basis for combining CBT with cognitively sparing atypical antipsychotic medication. However, the evidence from randomized clinical trials does not really tell us for which patients this approach is most suited. Generally, the trials have been done with patients with chronic symptoms, and it may be that it would be better to target people at high risk of relapse. The research data do not yet support the implementation of CBT for prodromal symptoms, first episode schizophrenia, acute relapse, those with comorbid conditions, such as substance abuse, personality disorder, or learning disabilities, or for psychotic symptoms in adolescents and elderly patients.

Furthermore, since the CBT treatment manuals for schizophrenia were developed in a pragmatic manner, they lacked the theoretical basis of an underlying cognitive model. Such models are necessary to explain the mechanisms of psychotic symptom onset and maintenance. Recently, however, more specific cognitive models for understanding what contributes to the emergence of specific symptoms, such as hallucinations and delusions, have been developed (43–46). These

models make it possible to provide more targeted treatment approaches (47). For instance, Beck and Rector (43, 48) cover models for individual symptoms (hallucinations and delusions). These models describe the maintenance of hallucinations by safety behaviors and by passive attitudes leading to non-engagement. Behavioral experiments to work with these safety behaviors have been developed. It has also been shown that the content of hallucinations often corresponds to the patient's negative automatic thoughts. Once patients have recognized this, it helps them realize that hallucinations are not externally generated. Delusions have been shown to arise without consideration of the available evidence. Disconfirmatory information searches do not occur unless the evidence is gradually considered during CBT. Similarly, a cognitive model describing the interplay between social deprivation, birth trauma, and negative core beliefs has been described for the illness of schizophrenia (49). This has greatly helped patients to understand various factors in the causation of their own illness. Research into CBT models of symptom emergence and maintenance is ongoing.

CURRENT RESEARCH ON CBT FOR SCHIZOPHRENIA

Currently, areas where there are gaps in the research base are being explored. Studies are ongoing concerning clinically significant outcomes, including social function and occupational recovery. We can expect more definitive information on the areas described in the following sections in coming years.

EARLY INTERVENTION

McGorry et al. developed an early intervention package for those patients with psychotic prodromes (50). This package combined CBT principles (in particular normalizing), low dose atypical antipsychotics, and individual and group support. The primary goal of the intervention was to reduce the duration of untreated psychosis and reduce conversion rate from prodrome to schizophrenia. Follow-up revealed a reduced duration of untreated psychosis but no change in the conversion rate to schizophrenia. There was, however, a delay in conversion to schizophrenia (i.e., a reduction of the point prevalence) (51). The key element of this approach is the early detection of the psychotic prodrome. Typical symptoms include paranoid ideas, magical thinking, pseudohallucinations, obsessional thoughts, anxiety, and increasing social withdrawal. Early detection is facilitated by stigma

reduction campaigns and ease of access to prodrome clinics based in primary care settings. This area of research is in its earliest phase and the publication of other recently completed studies is awaited (52).

COMBINING CBT WITH COGNITIVE REMEDIATION AND OTHER PSYCHOLOGICAL APPROACHES

Brenner et al., in their Integrated Psychological Therapy, described good results when graded cognitive remediation programs (cognitive differentiation, social perception, verbal communication, social skills, and interpersonal learning) were combined with CBT (53). Durable and cost-effective symptomatic improvement was achieved over the short-term. The study did not include any control group to account for the effect of non-specific factors and there were no measures of fidelity. Hogarty et al. showed that combining antipsychotic medication with family psychoeducation and social skills training was beneficial in producing symptomatic improvement and reduced relapse in patients with schizophrenia, but only if the patient was treated at home with the support of a family member (54, 55). Studies are currently underway in which CBT is being combined with behavioral family therapy.

STUDIES CONCERNING CBT AND ACUTE RELAPSE OF SCHIZOPHRENIA

Drury et al. tested the efficacy of CBT for acute psychotic relapse (56). Impressive results were achieved compared with the control group in preventing the entrenchment of positive psychotic symptoms. However, this study was criticized because of confounding by different doses of medication in the two groups at baseline indicating that one group may have been undertreated with medication. In a highly powered study, Lewis et al. attempted to replicate the methodology of the Drury et al. study (57). They found that both a course of CBT and a course of supportive counseling were significantly better than treatment as usual in the management of acute first and second episode relapse, and that CBT was significantly better than supportive counselling in the treatment of auditory hallucinations. Durability and relapse data are awaited.

CBT IN THE TREATMENT OF SCHIZOPHRENIA WITH COMORBID SUBSTANCE ABUSE

Barrowclough et al. demonstrated that CBT could reduce symptomatology and linked sub-

stance abuse in some patients in this most difficult subgroup (58). A much larger study will now be undertaken to further clarify this area of research.

CBT FOR COMORBID SCHIZOPHRENIA AND POSTTRAUMATIC STRESS DISORDER

There is evidence of a strong association between childhood sexual abuse and chronic antipsychotic-resistant hallucinations in schizophrenia (59). Romme and Escher also described adult traumatic events as being common stressful triggers for the development of the schizophrenic prodrome (60). In such instances, voice content is often derogatory, critical, and negative and often contains traumatic themes. Mental imagery or even visual hallucinations of traumatic memories often accompany the auditory hallucinations. Such patients are often depressed and self-harm is common. Added to this is the very high level of posttraumatic stress disorder arising after the development of schizophrenia due to emergency treatment or victimization (61). The high levels of arousal arising from posttraumatic stress disorder often maintain and perpetuate psychotic symptoms. In these cases, CBT approaches to posttraumatic stress disorder, including cognitive restructuring and reliving, need to be combined with CBT techniques for psychosis.

EFFECTIVENESS STUDIES OF CBT FOR SCHIZOPHRENIA

Haddock et al. noted that community psychiatric nurses were in a key position to deliver CBT interventions to patients with schizophrenia in the community (62). A pragmatic field study of brief CBT delivered by psychiatric nurses incorporating a psychoeducational and brief CBT family intervention was recently completed (37). The nurses were trained over a 10-day period and given regular supervision by expert CBT therapists. Overall symptoms, depression, and insight were all significantly improved in the treatment group as compared to standard care. Durability results with respect to symptomatic improvement and relapse prevention are awaited. Interestingly this intervention did not improve positive or negative symptoms, perhaps due to its brevity.

IMPLEMENTATION OF CBT

An excellent base exists for implementing individual CBT for patients with schizophrenia in treatment settings where clinicians are already working with high quality psychoeducational materials to improve adherence (63). Healthcare

teams who are trained in the Personal Therapy described by Hogarty et al. (55) would also find the implementation of CBT relatively straightforward, since the concept of individual psychological treatment is already accepted and practiced by such teams. Biological psychiatrists in the United Kingdom have, for the most part, found CBT to be an excellent complement to biological treatments, in part due to the focus on improved adherence (64) but also because the concepts of improved coping and symptom management fit well with biological paradigms. Similarly, the psychological formulations produced in CBT are compatible with and help drive and organize the various elements of psychosocial management, including social skills training, befriending schemes, day hospital activity, and family therapy. Psychodynamic therapists who work with psychosis in a time limited and structured manner with a psychodynamic formulation are also often keen to use CBT techniques to improve symptomatic outcome. Once the concept of using CBT for patients with schizophrenia is accepted, the question remains as to just how much training is needed. A basic understanding of CBT and practice in its use with nonpsychotic patients is necessary. Thereafter, workshops in CBT for schizophrenia can be attended at the annual meeting of the American Psychiatric Association or can be accessed via the Academy for Cognitive Therapy or other sources. Increasingly, CBT courses run psychosis modules and a variety of training schemes of variable length are possible. Delivery of CBT to patients with schizophrenia does depend on the availability of local supervision and an ongoing commitment from health service managers to support and facilitate training and supervision. The realization that patients can be helped to work directly with psychotic symptoms is encouraging to patients, caregivers, and case managers. The evidence base supports increasing attempts at implementation.

REFERENCES

- Kraepelin E. *Dementia praecox and paraphrenia*. Edinburgh: Churchill Livingstone; 1919.
- Ciampi L. Catamnestic long term study on the course of life and aging of schizophrenics. *Schizophr Bull* 1980;6:606-18.
- Harrison G, Hopper K, Craig T, et al. Recovery from psychotic illness: A 15- and 25-year international follow-up study. *Br J Psychiatry* 2001;178:506-18.
- Buchanan A. A two year prospective study of treatment compliance in patients with schizophrenia. *Psychol Med* 1992;22:787-97.
- Carroll Z, Clyde S, Fattah I, et al. The effect of an educational intervention on insight and suicidal ideation in schizophrenia. *Schizophr Res* 1998;29:28-9.
- Walsh E, Moran P, Scott K, et al. Prevalence of violent victimization in severe mental illness. *Br J Psychiatry* 2003;183:233-8.
- Cassano G, Pini S, Sacttoni M, et al. Occurrence and clinical correlates of psychiatric comorbidity in patients with psychotic disorders. *J Clin Psychiatry* 1998;59:60-8.
- Kissling W. Compliance, quality assurance, and standards for relapse in schizophrenia. *Ada Psychiatr Scand* 1994;89 (suppl382):16-24.
- Tarrier N, Yusupoff L, Kinney C, et al. randomized controlled trial of intensive cognitive behavior therapy for patients with chronic schizophrenia. *BMJ* 1998;317:303-7.
- Curson DA, Pate1 M, Liddle PF, et al. Psychiatric morbidity of a long stay hospital population with chronic schizophrenia and implications for future community care. *BMJ* 1988;297:819-22.
- Conley RR, Buchanan RW. Evaluation of treatment-resistant schizophrenia. *Schizophr Bull* 1997;23:663-74.
- Naber D, Perro C, Hippins H, et al. Clinical management of patients in relation to efficiency and side effects. *Br J Psychology* 1998;17:54-9.
- National Institute for Clinical Excellence. Clinical guideline 1: Schizophrenia. Core interventions in the treatment and management of schizophrenia in primary and secondary care. London: NICE; 2002.
- Kingdon D, Turkington D. *Cognitive-behavioural therapy of schizophrenia*. Hillsdale, NJ: Lawrence A. Erlbaum Associates; 1994.
- Fowler D, Garety P, Kuipers E. *Cognitive behavior therapy for people with psychosis: A clinical handbook*. Chichester: Wiley; 1995.
- Pekkala E, Merinder L. Psychoeducational interventions for schizophrenia and other severe mental illnesses. Oxford: Update Software; 2000.
- Argyle M, Kendon A. The experimental analysis of social performance. In: Berkowitz L, ed. *Advances in experimental social psychology*. New York: Academic Press; 1967.
- Pilling S, Bebbington P, Kuipers E, et al. Psychological treatments in schizophrenia: II. Meta-analyses of randomized controlled trials of social skills training and cognitive remediation. *Psychol Med* 2002;32:783-91.
- Huxley NA, Rendall M, Sederer L. Psychosocial treatments in schizophrenia: A review of the past 20 years. *J Nerv Ment Dis* 2000;188:187-201.
- Roth A, Fonagy P, Parry G, et al. What works for whom? A critical review of psychotherapy research. New York: Guilford Press; 1996.
- Oltmanns TF, Neale JM. Schizophrenic performance when distractors are present: Attentional deficit or differential task difficulty? *J Abnorm Psychol* 1975;84:205-9.
- Goldberg TE, Weinberger DR. Probing prefrontal function in schizophrenia with neuropsychological paradigms. *Schizophr Bull* 1988;14:179-83.
- Brenner HD, Hodel B, Roder V. Integrated cognitive and behavioral interventions in treatment of schizophrenia. *Psychosocial Rehabilitation Journal* 1990;13:41-3.
- Spring BJ, Ravdin L. Cognitive remediation in schizophrenia: Should we attempt it? *Schizophr Bull* 1992;18:15-20.
- Brown GW, Monck EM, Carstairs GM, et al. The influence of family life on the course of schizophrenic illness. *Br J Prev Soc Med* 1962;16:55-68.
- Kavanaugh D. Recent developments in expressed emotion and schizophrenia. *Br J Psychiatry* 1992;160:601-20.
- Pilling S, Bebbington P, Kuipers E, et al. Psychological treatments in schizophrenia: I. Meta-analysis of family intervention and cognitive behavior therapy. *Psychol Med* 2002;32:763-82.
- Marshall M, Lockwood A. *Assertive community treatment for people with severe mental disorders (Cochrane Review)*. The Cochrane Library, Issue 3. Oxford: Update Software, Ltd; 2003.
- Zubin J, Spring B. Vulnerability—A new view on schizophrenia. *J Abnorm Psychol* 1977;86:103-26.
- Oswald I. *Sleep*. Harmondsworth: Penguin; 1974.
- Turkington D, Siddle R. Improving understanding and coping in people with schizophrenia by changing attitudes. *Psychiatric Rehabilitation Skills* 2000;4:300-20.
- Turkington D, Siddle R. Cognitive therapy for the treatment of delusions. *Advances in Psychiatric Treatment* 1998;4:235-42.
- Drury V, Birchwood M, Cochrane R. Cognitive therapy and recovery from acute psychosis: A controlled trial 3: Five year follow up. *Br J Psychiatry* 2000;177:8-14.
- Rector NA, Beck AT. Cognitive behavioural therapy for schizophrenia: An empirical review. *J Nerv Ment Dis* 2001;189:278-87.
- Gould RA, Mueser KT, Bolton E, et al. Cognitive therapy for psychosis in schizophrenia: An effect size analysis. *Schizophr Res* 2001;48:335-42.
- Healy A, Knapp M, Astin J, et al. Cost-effectiveness evaluation of compliance therapy for people with psychosis. *Br J Psychiatry* 1998;172:420-4.
- Turkington D, Kingdon D, Turner T, et al. Effectiveness of a brief cognitive-behavioural therapy intervention in the treatment of schizophrenia. *Br J Psychiatry* 2002;180:523-7.
- Sensky T, Turkington D, Kingdon D, et al. A randomized controlled trial of cognitive-behavioural therapy for persistent symptoms in schizophrenia resistant to medication. *Arch Gen Psychiatry* 2000;57:165-72.
- Tarrier N, Beckett R, Hanwood S, et al. A trial of two cognitive-behavioural methods of treating drug resistant residual psychotic symptoms in schizophrenic patients I. Outcome. *Br J Psychiatry* 1993;162:524-32.
- Kuipers E, Garety P, Fowler D, et al. London-East Anglia randomized controlled trial of cognitive-behavioural therapy for psychosis, I: Effects of the treatment phase. *Br J Psychiatry* 1997;171:319-27.
- Kuipers E, Fowler D, Garety P, et al. London-East Anglia randomized controlled trial of cognitive-behavioural therapy for psychosis, III: Follow up and economic evaluation at 18 months. *Br J Psychiatry* 1998;173:61-8.

