The Cognitive-Behavioral Treatment of Schizophrenia: The State of the Art and the Evidence

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Abstract

Schizophrenia and other psychotic disorders are associated with high degrees of impairment and often respond inadequately to pharmacotherapy alone. In recent years, numerous clinical trials have been published showing the benefits of adjunctive cognitive behavior therapy for treating psychosis. However, research in this area has been hampered by the inherent problems conducting psychotherapy research in severely mentally ill populations. This paper provides a brief overview of the cognitive-behavioral treatment of psychosis and discusses the state of the evidence in this area, including its many unresolved issues.

Keywords: Schizophrenia, psychosis, cognitive therapy, behavior therapy, cognitive behavior therapy, acceptance and commitment therapy, empirically supported treatments, randomized controlled trials, literature review

Pharmacotherapy and the Need for Adjunctive Psychosocial Approaches

In recent times, the treatment of severe mental disorders such as schizophrenia has been thought by many to be the almost exclusive territory of psychiatry and psychopharmacology. It is true that the emergence of neuroleptic medications in the 1950s permitted deinstitutionalization for many individuals. In fact, antipsychotic medications are in some ways the real success stories in psychopharmacology, especially when compared to the relatively unimpressive outcomes of drug treatments for anxiety and depressive disorders (Gaudiano & Herbert, 2005). Antipsychotic medications are primarily effective for treating the positive symptoms of schizophrenia, in contrast to the accompanying negative symptoms and other deficits in psychosocial functioning that are quite impairing to daily life. Nevertheless, many individuals suffering from schizophrenia fail to respond to medications as their sole or primary treatment. For example, some treated individuals seem to recover remarkably in certain domains, but nevertheless remain unable to function successfully in society. Many others who would benefit from the medications refuse to take them, either because of a lack of insight or due to intolerable side effects. Still others faithfully adhere to their medication regimens, but continue to experience distressing and impairing "residual" symptoms of the illness.

The atypical antipsychotic agents are assumed by many clinicians to be clearly superior in terms of efficacy and tolerability compared to their first generation counterparts, although research suggests otherwise. Perhaps some of the more informative findings in this area come from the recently published Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study (Lieberman et al., 2005), the largest and longest antipsychotic trial of its kind. In this double-blind effectiveness trial, 1,493 people with schizophrenia were randomly assigned to receive olanzapine, quetiapine, risperidone, perphenazine, or ziprasidone for 18 months. Even though noncompliance with antipsychotics is known to be high in this population, study results were nonetheless compelling. By 18 months, 74% of patients discontinued their initial medications. Overall, the atypical antipsychotics studied failed to show superior efficacy or compliance compared to the first generation drug perphenazine. The only exception was in the case of olanzapine, which showed a statistically superior 64% discontinuation rate. However, olanzapine also had the highest rate of discontinuation due to tolerability (18%), which largely resulted from increased weight and metabolic concerns. Olanzapine was associated with an average of 2 pounds per month weight gain. In fact, 30% of patients on olanzapine gained 7% or more of their baseline body weight. Not surprisingly given the high discontinuation rates, the improvement in symptoms observed with these drugs also was relatively poor in the study. The government-funded CATIE study provides the most comprehensive and extensive data on the effectiveness of antipsychotic agents to date, and clearly highlights a potential role for adjunctive interventions for patients with schizophrenia.

Historical Antecedents to Modern Approaches

Although certain types of psychotherapy have become the primary, adjunctive, or alternative evidence-based choices for many people experiencing anxiety or depression, their support in the treatment of severe mental illnesses has been lacking historically. This situation has been changing considerably over the past decade, although relatively slowly, especially in the U.S. Psychoanalytic etiological theories and treatments for schizophrenia are partly responsible for setting early efforts back in this area. One of the most trenchant analyses of the negative impact of psychoanalytic thinking on our psychological understanding of schizophrenia comes from Martin Willick, a noted psychoanalyst himself. Willick (2001) notes the damage done by psychoanalytic formulations positing that schizophrenia is a result of ego impairment due to inadequate infant caregiving. This erroneous theorizing, largely based on case studies and clinical observations, not only alienated many patients and families, it also produced treatments that were ineffective and even harmful in some cases. The famous Chestnut Lodge studies documented the problems attempting to use psychodynamic therapy for schizophrenia without medications (McGlashan, 1984, 1988). Many concluded from these early attempts that people with schizophrenia simply were not amenable to psychotherapy, and abandoned their efforts (Mueser & Berenbaum, 1990).

Fortunately, others were making successful inroads into the treatment of schizophrenia using behavioral and cognitive therapies. These newer treatment approaches focus more on practical goals such as improving symptom management, coping, and functioning abilities in patients. Behavioral approaches have typically employed strategies derived from operant conditioning and social learning theories. For example, token economies, originating in the 1950s and 1960s, are effective for increasing adaptive behaviors in chronically ill patients (Dickerson, Tenhula, & Green-Paden, 2005). Currently, token economies are being used as a successful part of behaviorally-based rehabilitation programs for chronically ill patients, such as the Social-Learning Program (Paul, 2000). Another successful behavioral intervention is Social Skills Training, which employs didactics, modeling, behavioral rehearsal, corrective feedback, and homework to correct the interpersonal skills deficits commonly found in those with chronic mental illnesses. Although improvements in the areas specifically targeted by the intervention have been demonstrated in controlled trials, findings regarding the generalization of skills and improvements in broader outcomes (e.g., rehospitalization rates, psychosocial functioning) have been more equivocal (Mueser & Penn, 2004; Pilling, Bebbington, Kuipers, Garety, Geddes, Martindale et al., 2002).

Belief modification techniques also have been attempted over the years with psychotic patients and reported mainly in the literature as case studies. For example, over fifty years ago, Beck (1952) reported on the successful use of cognitive therapy in a patient with treatment-resistant delusions. Based on this early success, Hole, Rush, & Beck (1979) treated eight delusional patients with cognitive therapy and also reported positive results. Levine, Barak, and Caspi (1995) reported the use of cognitive techniques to foster "cognitive dissonance" in a patient with paranoid schizophrenia only partially responsive to medications. However, it only has only been over the past decade or so that comprehensive cognitive behavior therapy (CBT) packages have been developed and tested in controlled trials for treating the core symptoms and related areas of functional impairment associated with schizophrenia and other psychotic disorders.

The Cognitive-Behavioral Treatment of Schizophrenia

Although there is no one standardized CBT package for schizophrenia, most share several common features. In many ways, these protocols are similar to CBT for anxiety and depressive disorders. However, protocols for schizophrenia contain specific modifications due to the multiple domains of impairment characteristic of the illness, as well as the particular challenges engaging and working with

patients experiencing psychosis. Kingdon and Turkington (2005) provide a representative description of the treatment of schizophrenia from a cognitive-behavioral framework. The following description is drawn heavily from their work. First, much attention is given to creating and maintaining a productive working alliance with patients. In many ways, developing a collaborative working relationship with the patient is critical for successful treatment. Therefore, initial sessions are spent building a trusting therapeutic relationship that must be maintained for the duration of treatment. Initial assessment and goal setting may help facilitate this aim. A thorough assessment of the patients' symptoms and functioning based on standardized rating scales is essential for gauging any future improvement. However, the assessment process should also help the therapist to more fully understand the patient's experience of psychotic symptoms. For example, what is the patient's degree of belief in the "validity" or reality of the hallucinations or delusions? How frequently are the symptoms occurring? How much distress is associated with the symptoms? What events appear to provoke or exacerbate psychotic symptoms? What beliefs does the person hold to explain these symptoms? Recently validated measures of psychosis, such as the Psychotic Symptoms Rating Scales (PSYRATS, Haddock, McCarron, Tarrier, & Faragher, 1999), may be particularly useful for assessing the phenomenology of psychotic symptoms in a more structured fashion.

Kingdon and Turkington (2005) also describe the utility of providing a normalizing rationale when working with psychotic symptoms. For example, they propose discussing with patients how psychotic symptoms can be viewed along a continuum, and how these experiences can occur in almost any person due to sleep or sensory deprivation, emotionally traumatic situations, head trauma, or drug use. In addition, a diathesis-stress model (Zubin & Spring, 1977) of illness is used to explain psychotic symptoms as it allows for the incorporation of a biopsychosocial approach to treatment. Biological (e.g., heredity, birth trauma), social (urban living, immigration, stigma, expressed emotion), and psychological vulnerabilities (cognitive biases, avoidant coping, personality traits), when combined with environmental stressors, are thought to produce, maintain, or exacerbate many of the symptoms characteristic of schizophrenia and psychosis. This model is presented to the patient as a way of understanding psychotic symptoms and as a rationale for the treatment approach. Also in the early stages of treatment, the therapist and patient collaborate in forming individualized treatment goals based on information obtained from the standardized ratings and clinical interview. This initial approach to treatment helps the therapist to establish a collaborative working relationship with the patient. It also serves to begin the process of helping patients to decatastrophize and normalize their psychotic experiences, laying the groundwork for the development and use of more adaptive coping strategies.

Other aspects of CBT for schizophrenia include the presentation of the fairly standard cognitive therapy framework, which includes a discussion of activating events, dysfunctional beliefs, and behavioral consequences; the identification of common cognitive distortions in thinking; and the generation and testing of alternative beliefs. Often, the therapist uses this model to address anxiety and depressive symptoms before tackling psychotic symptoms to improve the therapeutic relationship and to decrease distress that may further maintain hallucinations and delusions. Once a collaborative relationship has been established and the patient has been familiarized with the cognitive model and approach, work is started on the positive symptoms of psychosis, including hallucinations, delusions, and other aspects of thought disorder. For example, delusional beliefs can be reality tested by devising behavioral experiments and formulating alternate explanations using a guided-discovery process. Hallucinations can be targeted using monitoring forms, logical reasoning exercises, and stress-reduction coping strategies to decrease their negative impact. The way in which the therapist works with psychotic symptoms is critically important. For example, in an early clinical trial, Milton and colleagues (1978) found that delusional beliefs decreased in patients treated using Socratic questioning techniques, but not in patients treated with a more confrontational style of disputation.

Typically, negative symptoms, such as affective flattening, anhedonia, and social withdrawal are targeted later in treatment using activity scheduling and social skills training. The final phases of treatment typically involve working with the patient's more underlying dysfunctional beliefs and "schemas," and formulating a relapse prevention plan based on the skills learned throughout treatment. Booster sessions also are frequently employed to help transition patients out of treatment. Figure 1 presents an overview the aforementioned approach (adapted from the work of Kingdon and Turkington, 2005).

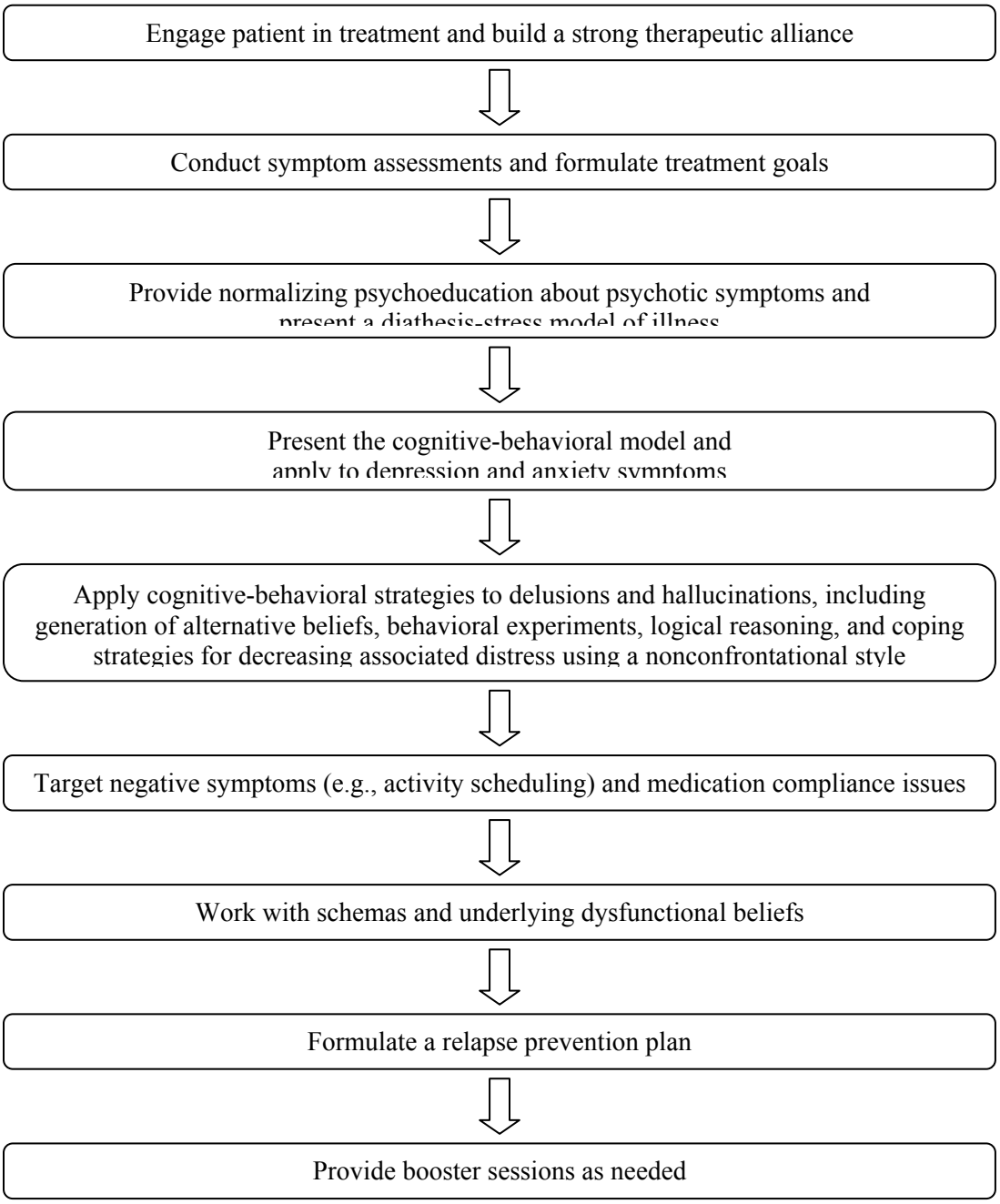

Figure 1. **General Model of CBT for Schizophrenia**

Current Empirical Support for CBT for Schizophrenia

CBT for schizophrenia is designed for use as an adjunctive treatment to pharmacotherapy. Therefore, early randomized controlled trials often employed additive research designs, comparing treatment as usual alone to treatment as usual plus CBT. Of course, this design does not control for additional therapy and contact. After several studies showed clear benefits for CBT beyond standard care, well-designed studies began to be appear comparing CBT to "nonspecific" interventions, most commonly supportive therapy (for a more detailed review, see Gaudiano, 2005). Not surprisingly, results comparing CBT to an alternate therapy were less impressive. Several meta-analyses have been published over the years summarizing the treatment outcomes reported in trials of CBT for psychosis. Based on a recent analysis of 19 clinical trials, Tarrier and Wykes (2004) reported an effect size difference between CBT and comparison conditions of .37 at post-treatment on positive symptom measures, which represents a modest treatment effect. An earlier meta-analysis of 7 trials by Gould and colleagues (2001) found effect size differences of .65 and .93 at post-treatment and follow-up, respectively. Most of the studies that Tarrier and Wykes analyzed were conducted on chronically ill patients whose symptoms had not adequately responded to medication treatment. Furthermore, these authors combined studies using additive designs along with those comparing CBT with a non-CBT therapy. These factors likely resulted in the more modest effects found in their meta-analysis. In addition, Tarrier and Wykes analyzed the methodological quality of the 19 trials. Findings suggested that methodological rigor was inversely related to outcome. In other words, the more rigorous clinical trials showed smaller treatment effects for CBT. In addition, unblinded trials showed greater treatment effects than those using blind raters.

One question that arises from the modest effects and high degree of variability found in published trials is the clinical significance of the treatment results. Jacobson and Truax (1991) defined clinical significance as a return to normal functioning following treatment. Although such an outcome is not likely for the majority of patients with chronic mental illness, clinical significance criteria can still provide a useful metric for understanding the effects of CBT for schizophrenia. First, the change attributed to the intervention must be shown to exceed the error attributable to the measure itself. Second, this reliable degree of change should be large enough to place individuals outside the range of the dysfunctional population, and preferably, within the range of the normal one. Recently, I examined the clinical significance of symptomatic improvement in published trials of CBT for schizophrenia (Gaudiano, 2006). Based on analyses of group means from 12 controlled trials in this area, 42% of CBT conditions compared to only 25% of comparison conditions (treatment as usual only and/or with the addition of non-CBT therapy) showed reliable change by post-treatment or follow-up. In trials showing reliable change, a clinically significant improvement in symptoms (i.e., two or more standard deviations change in the direction of the functional population) was estimated to be achieved in about 16% of patients receiving CBT and 14% in the comparison conditions. Although variability was again a problem in the clinical trials examined, results suggested that some patients were able to achieve substantial benefits from CBT. It is important to emphasize that, as CBT for schizophrenia is provided as an adjunct to other efficacious treatments (i.e., pharmacotherapy), the effects will likely be modest in many cases. However, even a modest improvement in outcome can be clinically important in populations with high degrees of severity and impairment and inadequate responses to standard care.

Although the aforementioned results speak to symptomatic improvement, insufficient attention has been given to date to more functional and longer-term outcomes in trials of CBT for schizophrenia. As discussed, Gould et al.'s (2001) meta-analysis suggested that patients either maintain or continue to improve on positive symptom measures following treatment with CBT, similar to the pattern witnessed using this approach with other clinical populations. Thus far, results have been more equivocal in terms of the effects of CBT on rehospitalization rates. For example, Tarrier and colleagues (2004) compared treatment as usual alone or in combination with CBT for patients with early schizophrenia. However, no

differences in relapse or rehospitalization were found at 18-month follow-up. In another trial, Tarrier and colleagues (1999) compared treatment as usual alone to adjunctive CBT or supportive therapy. At 12-month follow-up, no differences in relapse or rehospitalization rates were observed among the treatment groups. However, Gumley and colleagues (2003) conducted a controlled trial of patients with schizophrenia showing early signs of relapse and found that those receiving CBT in addition to treatment as usual demonstrated lower rehospitalization and relapse rates compared to those receiving only standard care after 12 months. Unfortunately, other functional outcomes, including relationship, employment, or housing status have been inconsistently assessed in currently published trials.

Furthermore, clinical trials have supported the use of CBT for schizophrenia during various phases of the illness and in various clinical subpopulations. As discussed, several trials showed benefits in chronically ill samples with medication-resistant symptoms. In addition, two trials have been conducted using acutely ill, hospitalized samples. In an early trial, Drury and colleagues (1996) randomly assigned acutely ill patients with psychosis to individual and group CBT or to a control condition consisting of structured activities and informal support. Patients receiving CBT showed a greater improvement in positive symptoms and a shorter recovery time. More recently, Startup and colleagues (2004) randomized acutely ill patients with psychotic disorders to treatment as usual alone or with the addition of CBT that began during inpatient treatment and continued on an outpatient basis after discharge. At post-treatment, positive and negative psychotic symptoms and social functioning improved more in the CBT group compared to the control group. Also, the CBT group showed a higher degree of reliable and clinically significant change on the Global Assessment of Functioning Scale compared to the standard care group by 12 months (60% versus 40%, respectively). By 2-year follow-up, the CBT group continued to show superior improvement on negative symptoms and social functioning measures, but not in positive symptoms (Startup, Jackson, Evans, & Bendix, 2005).

Finally, recently completed trials have investigated the use of CBT as an early intervention or to prevent the development of psychosis in patients showing prodromal signs of illness. As discussed, Gumley and colleagues (2003) showed that CBT had a preventive effect in patients at risk for relapse. Recently, Morrison and colleagues (2004) reported results of a clinical trial comparing CBT to treatment as usual in patients at "ultra-high risk" for developing their first episode of psychosis. By 12 months, the CBT condition showed a significantly lower risk of progression to psychosis compared to standard care. Interestingly, CBT reduced the likelihood of the need for the prescription of antipsychotic medication in treated patients. Although the aforementioned applications of CBT for psychosis require more research to replicate results, these early findings are quite promising and show the robust benefits of the treatment when used during various phases of illness.

Some Unresolved Issues

The empirical evidence to support CBT for schizophrenia is substantial and growing, yet there are numerous unresolved issues that require some caution in the application of these techniques and call for additional research in this area. First, there is much heterogeneity among the various CBT protocols used in published clinical trials. The specific elements and techniques often have included a wide range of CBT techniques, as well as some more novel strategies specifically for treating psychosis (Gaudiano, 2006). Although most researchers in this area highlight the cognitive techniques contained in the protocols, it is not clear how important they are to outcomes (Gaudiano, 2005). Further, no dismantling studies (i.e., trials designed to test the efficacy of specific treatment elements) have been conducted to date. Kuipers (2005) recently argued that attempting dismantling studies of CBT for schizophrenia would constitute "reduction ad absurdum," as it is commonly understood that treatments for chronically mentally ill populations need to be integrative and multifaceted. Perhaps, but then there is little justification for promoting the specific use of cognitive therapy techniques with this population. Such work often requires a high degree of therapist expertise and careful attention to the therapeutic alliance, making for slow

work. The more that CBT for schizophrenia can be refined and simplified, and its effective components understood, the more likely the treatment will be made available as an option to patients in the current U.S. healthcare system.

On a related note, the frequent difficulty that researchers have had showing that CBT is superior to more basic supportive interventions in clinical trials suggests that many of its treatment components are superfluous or without specific efficacy (Penn et al., 2004). Tarrier and colleagues (2001) argued that CBT for schizophrenia may be more effective for some symptoms than others. Their reanalysis of clinical trial data comparing CBT to supportive therapy suggested an advantage to CBT in decreasing hallucinations but not delusions. Future work should not ignore these issues, and should test the differential effects of various elements of CBT protocols on specific process and outcome variables to document that the change attributable to the intervention is based on the actual application of the treatment. The emerging literature on the treatment of depression suggests that improvement in CBT is more likely attributable to the behavioral activation elements of the treatment, instead of its belief modification techniques (Jacobson et al., 1996). It is possible that a similar phenomenon is occurring in CBT for schizophrenia trials, which could mean that we are wasting valuable resources and failing to appreciate the most effective elements of psychological treatments of psychosis. Furthermore, family-based interventions have been shown to be effective adjunctive treatments for schizophrenia that can reduce relapse rates and promote medication compliance (Pilling, Bebbington, Kuipers, Garety, Geddes, Orbach et al., 2002). However, no controlled trials to date have directly compared the benefits of family versus individual psychotherapies for schizophrenia. It will take more sophisticated clinical trial research in this area to better understand the specific efficacy of CBT for schizophrenia, and what may account for its treatment effects.

In addition, it is clear that cognitive-behavioral therapies for schizophrenia are evolving based on the clinical experience and empirical knowledge gained treating this population. Newer treatments are beginning to emerge that focus more on changing the patient's response to their psychotic symptoms, rather than attempting to directly decrease the symptoms themselves. For example, Cather and colleagues (2005) developed Cognitive Behavioral Therapy (fCBT), an intervention that attempts to improve functional outcomes by promoting effective coping strategies in response to psychotic symptoms, but de-emphasizes cognitive disputation techniques. Results of a pilot study suggested greater improvements in auditory hallucinations for fCBT compared to psychoeducation in patients with residual symptoms.

In addition, two pilot studies have been published on the use of Acceptance and Commitment Therapy (ACT, Hayes, Strosahl, & Wilson, 1999) for acutely psychotic inpatients. ACT is a newer behavioral treatment that promotes radical acceptance of unavoidable psychological distress in the service of pursuing valued goals and actions. In a small randomized trial, Bach and Hayes (2002) provided a few sessions of ACT to inpatients with psychosis. Patients were encouraged to accept unavoidable events, to acknowledge but let go of psychotic symptoms without treating them as either true or false, and to identify and work toward goals that were consistent with their broader life values (for a more detailed description, see Bach, Gaudiano, Pankey, Herbert, & Hayes, 2006). The ACT group showed a 50% reduction in rehospitalization rates by 4-month follow-up compared to the group receiving treatment as usual only. Also at follow-up, those receiving ACT reported less distress from and believability in their psychotic symptoms. Paradoxically, patients receiving ACT simultaneously reported a higher frequency of psychotic symptoms at follow-up, possibly demonstrating increased acceptance of the symptoms.

Gaudiano and Herbert (in press-a) recently attempted to replicate the Bach and Hayes (2002) findings in a similar sample of inpatients with psychosis. Compared to treatment as usual, the provision of a few sessions of ACT produced superior acute outcomes on mood symptoms and disability ratings at hospital discharge, and resulted in decreased self-reported distress associated with hallucinations. Secondary analyses showed that patients' believability in hallucinations mediated the relationship

between their frequency and the distress produced from these symptoms (Gaudiano & Herbert, in press-b). Only patients receiving ACT showed a significant decrease in the believability of their hallucinations by discharge and a greater decrease in associated distress compared to the control group, even though no attempts were made to directly change patients' beliefs in the validity of psychotic symptoms. At 4-month follow-up, 45% of those receiving standard care were rehospitalized compared to only 28% of those receiving ACT. Although preliminary, results from these two early studies suggest that enhancing healthy coping abilities and promoting distancing from mental experiences can result in less functional impairment in patients with psychosis. However, more research is needed to determine if these effects are reliable or whether they are specifically attributable to ACT.

Conclusions

Practice guidelines for the treatment of schizophrenia increasingly include recommendations for the provision of family therapy or CBT for schizophrenia (Gaebel, Weinmann, Sartorius, Rutz, & McIntyre, 2005). However, patients are still unlikely to receive these evidence-based therapies, especially in the U.S (Lehman & Steinwachs, 1998; Moran, 2003). Increasing our knowledge base in this area through refined empirical investigations and larger controlled efficacy and effectiveness trials will aid in efforts to make effective psychological services more available to individuals in need. Unfortunately, major funding agencies, including the National Institutes of Health, have failed to devote adequate resources or to seriously promote study in this area until only recently. This lack of initiative may be partly attributable to the supremacy of the biomedical model in U.S. psychiatry and the historical lack of success in this area (Mueser & Noordsy, 2005). However, the result has been that many mental health professionals in the U.S. are ignorant of the advances in psychological treatments for schizophrenia that have been achieved over the past decade and the amount of evidence supporting their use. Contrast this situation with that in other nations, such as the United Kingdom, where psychosocial treatments for severe mental illness are prominently promoted in practice guidelines and are becoming the new model of "standard care" (NICE, 2003). The U.S. currently is far behind the rest of the psychiatric world in this area, and it will take a concerted effort amount various stakeholders, including researchers, clinicians, patients, and their family members, to correct the imbalance.

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