Symptom-Specific Group Therapy for Inpatients with Schizophrenia

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Abstract

The efficacy of cognitive interventions was compared to standard treatment in medicated chronic schizophrenic inpatients. Clinical symptoms of 25 patients were assessed using the Positive and Negative Syndrome Scale (PANSS). Problem symptoms were matched to appropriate treatment groups including: ‘attitudes’ (simple introductory cognitive concepts), positive symptoms, negative symptoms, attention, affective regulation, substance abuse and ‘boundaries’. Patients received 3-5 sessions of group per week (total of 50-100 sessions), then were reassessed on the PANSS. Compared to the control group of 23 patients, whose PANSS scores did not change from the baseline, patients receiving cognitive interventions showed a 22% decrease (from 83 to 65) in total symptom severity on the PANSS over 6 months. The improvement occurred for the positive, negative and general symptom scales of the PANSS, as well as for 4 out of 5 factors: negative symptoms, dysphoric mood, activation and autistic preoccupation, but not for positive symptoms. The results suggest that the program is effective for medicated inpatients with symptoms in the mild to moderate range on the PANSS. It is essential, however, to confirm these findings with a rigorously controlled experimental study, as well as to include patients with symptoms outside the mild-moderate range.

Schizophrenia is a severe neuropsychiatric condition (Shelley et al., 1996; 1999). Although its exact etiopathology remains unknown, it is now recognized that pharmacotherapy is necessary but not sufficient to treat its symptoms. Usually, but not invariably, positive symptoms (such as hallucinations, delusions and paranoia) respond favorably to pharmacotherapy, whereas negative symptoms (such as avolition, apathy, isolation and withdrawal) and cognitive deficits (thought disorder, attentional and memory problems) are more pharmacotherapy-resistant (although second generation antipsychotics have led to greater therapeutic success) (Keefe et al., 1999; Opler, 1999).

In the U.S., treatment for schizophrenia has relied primarily on the use of antipsychotic drugs, with a de-emphasis on psychotherapy. While a role for psychodynamic psychotherapy has not been supported, a growing literature suggests that cognitive-behavioral and psychoeducational methods are important and effective forms of treatment as an adjunct to pharmacotherapy (Chadwick et al., 1996; Kingdon and Turkington, 1994). For example, a recent report in The New York Times noted that researchers are finding that cognitive therapy, when added to drug treatment, can help psychotic patients gain more control over delusions and hallucinations, and improve their ability to think in a more logical and organized manner. Schizophrenic patients who improved with cognitive therapy experienced fewer distressing symptoms, had lower relapse rates, spent less time in hospitals and had better skills for dealing with problems and setbacks than patients receiving routine care alone (Goode, 2000).

Given these developments, there has been renewed interest in adjunctive treatments for the symptoms of schizophrenia, and a move towards incorporating techniques such as cognitive-behavior therapy (CBT), psychoeducation, skills training, social cognition and cognitive rehabilitation into treatment programs for schizophrenic patients. Although cognitive therapies (Beck, 1976; Beck et al., 1979; Ellis, 1962) were originally developed for the treatment of affective and anxiety disorders, an increasing number of clinicians have successfully applied these techniques to a wide range of psychiatric diagnoses (Salkovskis, 1996) including severe chronic mental illness with a psychotic component.

For example, Kingdon et al. (1994) and Kingdon and Turkington (1991) showed how cognitive techniques can be used to help clients construe positive symptoms such as delusions in non-psychotic terms, by examining their beliefs in a collaborative non-confrontational manner, and offering alternative explanations. Cognitive techniques were also used by Chadwick and Birchwood (1994) to investigate beliefs that patients hold about auditory hallucinations or “voices”. Patients’ beliefs about the voices’ omnipotence, identity, and purpose were systematically disputed and tested. Large and stable reductions in the conviction in these beliefs were reported, and these associated with reduced distress, increased adaptive behavior, and a fall in voice activity.
One criticism of CBT in schizophrenia has been that evaluations are mainly case studies and uncontrolled trials. Several controlled trials have now been published on the use of CBT for schizophrenia (Kuipers et al., 1997), as a means of improving treatment adherence (Lecompte and Pelc, 1996; Kemp et al., 1996), as an adjunctive treatment for inpatients admitted for short-term treatment (Drury et al., 1996) and for psychotic symptoms unresponsive to medication (Kuipers et al., 1997; Tarrier et al., 1993; 1998).

Tarrier et al. (1998), for example, conducted a randomized controlled trial of intensive CBT. Patients were randomly allocated to an intensive CBT group (20 hours over 10 weeks in which patients were taught coping strategy enhancement, problem solving and techniques for relapse reduction), to a supportive counseling group (in which patients were given the same number of sessions of standard non-cognitive therapy), or to a routine care only group. Assessments on the Brief Psychiatric Rating Scale (BPRS) showed a significant decrease in the severity (p=0.006) and number (p=0.009) of positive symptoms shown by patients receiving CBT. Supportive counseling was effective but to a far lesser extent.

Another recent large-scale, well-controlled study has been the London-East Anglia randomized controlled trial of CBT for psychosis (Kuipers et al., 1997). Patients in the study were randomly allocated to either a CBT or a routine care condition. The CBT consisted of weekly treatment sessions aimed at improving coping strategies or developing new ones, modifying beliefs about delusions, hallucinations and dysfunctional schemas and management of social disability and relapse. Results indicated that, following a 9 month treatment period, the CBT group showed a 25% reduction in symptom severity compared to the control group, who received only routine clinical care with no significant change in BPRS score (p=0.009) (Kuipers et al., 1997; Garety et al., 1997). Improvements in the CBT group were maintained 18 months after baseline (Kuipers et al., 1998), and several predictors for a good treatment response (cognitive flexibility and number of recent admissions) have been found (Garety et al., 1997). These findings suggest that CBT may be a specific and cost-effective intervention in medication-resistant psychosis.

Two other studies have also provided follow-up data on the efficacy of CBT (Kemp et al., 1998, Sensky et al., 2000). The results of these studies have been considered promising in the American Psychiatric Association guidelines (1997). For example, Sensky et al. (2000) demonstrated that both CBT and supportive therapy led to significant reductions in positive and negative symptoms and depression. But at 9-month follow-up, only the CBT group continued to improve.

Given these promising developments, several programs have incorporated CBT techniques into their treatment of schizophrenic patients. These programs include Cognitive-Behavioral Educational Program for Schizophrenic Patients (CB/EPS) (Gallagher and Nazarian, 1996), coping strategy enhancement (CSE) (Tarrier et al., 1998), problem solving (PS) (Tarrier et al., 1998), Integrated Psychological Therapy (ITP) (Brenner et al., 1994) and Personal Therapy (Hogarty et al., 1991, 1995).

With the increasing recognition of the need and potential benefit of techniques such as CBT, skills training, psycho-education and group therapy, we designed and implemented a symptom-specific cognitive-behavioral group treatment program on an inpatient ward of the Bronx Psychiatric Center (BPC). This was intended as an adjunctive form of treatment to the standard pharmacotherapy and other routine treatments received by patients of the hospital.

Clearly, many excellent programs have been developed to address different aspects of schizophrenia and its treatment. One shortcoming of most previous programs has been that they are general, addressing mental illness broadly, rather than targeting the symptoms of schizophrenia specifically. Another is that schizophrenia presents with many profiles; some patients show predominantly positive symptoms, others mainly negative symptoms, still others have primarily attention problems or affective dysregulation, and some are mixed. Thus, we reasoned, it would be therapeutically advantageous to develop flexible programs that consist of a number of units or treatment modules that, in various combinations, can be tailored and applied to different symptom profiles. The ongoing task of treatment for schizophrenia is the design of programs that are symptom-specific and have the flexibility to address all the different symptom profiles of schizophrenia. These were the two major goals of our program design. To this end, we employed the Positive and Negative Syndrome Scale (PANSS) (Kay et al., 1992) for both symptom assessment and the design of the different treatment units of the program that addressed each of the symptom clusters.

The PANSS was developed and standardized for typological and dimensional assessment of the symptoms of schizophrenia (Kay et al., 1992). It is a 30-item, 7-point scale that measures the severity of symptom dimensions of schizophrenia based on a semi-structured clinical interview and other informational sources. It has been widely employed in both clinical and research settings (Opler et al., 1994; Herman et al., 2000). The conceptual framework for the PANSS derives from the work of Crow (1980a; 1980b) and Andreasen and Olsen (1982). Specifically, positive symptoms are viewed as active, disruptive processes, including delusions and hallucinations, that are superimposed on a normal mental state while negative symptoms are viewed as the absence of normal functions, including blunted affect and emotional withdrawal.

The PANSS generates scores on three scales: positive symptoms (7 items), negative symptoms (7 items), and general psychopathology symptoms (16 items). Factor analytic studies have shown that the PANSS can be broken down into 5 factors: negative, positive, activation, dysphoric mood and autistic preoccupation (White et al., 1997).
Innovative features of our program included:

1. Patients were assessed on symptom severity pre- and post-treatment using the PANSS (Kay et al., 1987; 1992; Opler and Ramirez, 1998).

2. Groups were designed to target and address specific symptom clusters of schizophrenia as identified by the PANSS—positive symptoms, negative symptoms, activation, dysphoria and preoccupation—and to teach patients coping strategies.

3. A group format was used to allow as many patients as possible to benefit. All interventions were delivered to groups of inpatients with schizophrenia.

4. The program used a specific type of cognitive-behavioral therapy: Rational Emotive Behavior Therapy (REBT) (Ellis, 1962), simplified and adapted for use with this type of severely mentally ill population. The program also used techniques modified from REBT group therapy (Ellis, 1997). These included cognitive techniques (such as psychoeducation, collaborative challenging of dysfunctional cognitions, learning coping statements), emotive techniques (such as role playing, humor and encouragement) and behavioral techniques (such as skills training and use of reinforcement).

5. The program incorporated additional treatment techniques (psychoeducation, skills training, social cognition and cognitive rehabilitation) that have been found to be useful and effective in targeting and treating symptoms of schizophrenia.

We hypothesized that symptom severity as indexed by the PANSS would not differ between the 2 groups pre-treatment, but that the 2 groups would differ on PANSS scores post-treatment and on pre to post change scores. In addition, as both groups received similar pharmacological treatment and routine clinical care, but differed only with respect to the cognitive treatment program, differential changes in symptom severity were hypothesized to be attributable to the program.

Methods

Subjects

To participate in the program, a patient had to be: (1) An inpatient of the participating treatment ward of BPC (2) 18-59 years of age (3) English-speaking (4) stabilized on medication (5) capable of giving informed consent, (6) DSM-IV diagnosis of schizophrenia or schizoaffective disorder, with or without substance abuse. Twenty-five inpatients of the participating ward of BPC received the symptom-specific cognitive-behavioral group treatment program. They also received standard pharmacotherapy and routine psychosocial treatments. They will henceforth be referred to as the “Cognitive” group (or COG). Twenty-three inpatients from another ward of BPC, with the same diagnoses and demographically similar to the COG group, formed the “Control” group (or CON). They received no cognitive-behavioral program, only standard pharmacotherapy and routine psychosocial treatment. The CON group had previous PANSS ratings taken as part of another study. PANSS raters in the present study received training, and attained an interrater reliability of 90% or better.

Design

The study employed repeated measures between group design. The experimental (COG) group was assessed for symptom severity on the PANSS pre- and post-treatment. They were compared to the control (CON) group, who were assessed on symptom severity over a similar time course but without any intervening cognitive therapy.

Procedures

Cognitive Group:

Patients underwent an initial assessment of positive, negative, and general psychopathology symptoms on the PANSS, chart review and treatment team discussion of problems. Symptoms were then matched to treatment groups that aimed to deal specifically with each of the specific symptom clusters.

Treatment groups were chosen and developed because they were areas that corresponded to the natural domains of schizophrenic symptoms, particularly as indicated by factors of the PANSS. They were: (1) “Attitudes”, an introductory psychoeducation group for teaching simple cognitive concepts; (2) Positive Symptoms, for dealing with delusions, hallucinations, grandiosity and paranoia; (3) Negative Symptoms, for dealing with isolation, withdrawal, motivation and avoidance; (4) Attention, a group for improving attention, observation and participation skills and reducing distractibility; (5) Affective Regulation, for managing dysphoria, fear and anxiety, and controlling anger, antisocial behaviors and acting out; (6) Substance Abuse Psychoeducation, for learning about addiction and decreasing drug taking and drug seeking behaviors; and (7) “Boundaries”, for examining different types of relationships and ways of relating, and learning social and communication skills.

Patients received between 3 to 5 groups per week (average of 54 sessions, range 27 to 90 sessions). The number of weekly sessions varied among patients, because different groups targeted different symptom clusters, and the number of problem symptoms differed among patients. Patients were reassessed post-treatment for clinical symptoms, and cognitive, social and behavioral problems as measured by the PANSS. Duration of treatment was 8 to 21 weeks (average of 12 weeks). The range is due to the fact that some patients were discharged from hospital prior to the program’s completion.
Control Group

Patients were assessed on the PANSS on 2 occasions separated by a period of 3 months. Patients received medication, routine psychosocial treatment and clinical care, but no cognitive therapy.

Data Analysis

Pre- and post-treatment PANSS scores for the COG group and pre- and post-scores for the CON group were entered into an EXCEL database. Following the data analyses employed by Malaspina et al. (2000), the present data were also analyzed in two ways. First, according to the original structure of the PANSS into 3 subscales: positive (7 items), negative (7 items) and general symptoms (16 items) as well as the total score obtained from the sum of the 30 PANSS items. Second, data were also analyzed according to the 5 factor model of the PANSS, the most definitive factor analytic model of the PANSS, as described in the most recent PANSS Manual (Kay et al., 2000) and by members of the PANSS Collaboration Study Group (White et al., 1996). The 5 factor or pentagonal model of the PANSS has derived the following factors: negative (10 items: e.g., lack of spontaneity, blunted affect, emotional withdrawal, poor rapport), positive (5 items: e.g., delusions, unusual thought content, grandiosity, hallucinations), activation (6 items: e.g., hostility, poor impulse control, excitement), dysphoric mood (5 items: e.g., anxiety, tension, guilt, depression, somatic concerns) and autistic preoccupation (6 items: e.g., poor attention, preoccupation, difficulty in abstraction, stereotyped thinking).

A computerized statistical package (SPSS) was used to analyze whether there were significant differences as a function of treatment and between groups. For analyses of treatment effects, paired samples t-tests were used for each of the 2 groups separately, to assess pre- to post-changes in symptom severity as reflected by scores on positive, negative, general and total symptom scales of the PANSS and on the 5 factors of the PANSS. For between group analyses, ANOVAs were used to examine whether pre-treatment scores and post-treatment scores on the positive, negative, general and total subscales and on each of the 5 factors of the PANSS differed between groups.

Figure 1: Mean scores on the PANSS Subscales (Positive, Negative, General and Grand Total) and 5 Factors (Negative, Positive, Activation Dysphoria and Autistic Preoccupation) for the Cognitive Group Pre- and Post-Symptom-Specific Group Therapy and for the Control Group not receiving Symptom-Specific Group Therapy over a similar time course.
Table 1: Mean (and standard deviation) scores on the PANSS

i. Positive, Negative, General and Grand Total Scale Scores

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ii. 5 FACTOR Scores

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Table 2: Paired samples t-tests

i. Positive, Negative, General and Grand Total Scale Scores

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<td>0.59 ns</td>
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<td>0.66 ns</td>
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ii. 5 FACTOR Scores

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<td>-0.31 ns</td>
<td>-1.39 ns</td>
<td>-0.74 ns</td>
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Results

Table 1 shows descriptive statistics—means and standard deviation for the 2 groups, pre-treatment and post-treatment for positive, negative, general and total symptom scales of the PANSS (see also Fig.1) and for the 5 factors of the PANSS (positive, negative, activation, dysphoric mood and autistic preoccupation) (see Figure 1).

Paired samples t-tests (see Table 2) indicated that for the COG group there was a statistically significant pre- to post- change in symptom severity for each of the 4 subscales (positive symptoms: df 24, t= -7.169, p <0.001; negative symptoms: df 24, t= -4.927, p <0.001; general symptoms: df 24, t= -6.56, p <0.001; grand total score: df 24, t= 7.84, p <0.001). For the CON group, on the other hand, there were no statistically significant pre- to post-changes in symptom severity for each of the 4 subscales (positive symptoms: df 22, t= .592, p <0.56; negative symptoms: df 22, t= -.210, p <0.836; general symptoms: df 22, t= .663, p <0.514; grand total score: df 22, t= .465, p <0.646). Similarly, paired samples t-tests showed that the COG group had a statistically significant decrease in symptom severity on each of the 5 factors of the PANSS (positive, negative, activation, dysphoric mood and autistic preoccupation) (p<0.001, see Table 2). For the CON group, there were no significant pre- to post-changes in symptom severity on the 5 factors (see Table 2).

The analyses of variance (ANOVAs) (see Table 3) showed that on the 4 PANSS subscale ‘pre’ measures, there were no differences among the groups on positive symptoms, general symptoms and total PANSS scores. There was, however, a significant difference in negative symptoms (df 1,46 F=5.282, p<0.026) on the pre-measure, with the CON group showing more severe positive symptoms (see Table 2). On the post-measure there was a statistically significant difference between groups on all 5 factors: positive, (df 1,46 F=15.76, p<0.000); negative (df 1,46 F=30.07, p<0.001); dysphoria (df 1,46 F=16.851, p<.000); activation (df 1,46 F=12.922, p<0.001) and autistic preoccupation (df 1,46 F=12.332, p<0.001). This indicates a decline in symptom severity in the COG group but not in the CON group (See also Figure 1).

Discussion

These data suggest that inpatients receiving the symptom-specific cognitive-behavioral group treatment program in addition to standard pharmacotherapy and routine care showed a significant decrease of symptom severity. The control group did not show any improvement in any of the scales. In fact, there was a slight, non-significant worsening of their symptoms. The fact that both groups were receiving medication plus routine care, and had symptoms in the mild to moderate range, suggests that pharmacotherapy alone can improve the symptoms of schizophrenia up to a point, after which improvement plateaus. However, the addition of symptom-specific groups using cognitive behavioral and psychoeducational methods, can lead to further, important improvements.
The present findings are consistent with other studies demonstrating the efficacy of cognitive therapy for schizophrenia. For example, the London-East Anglia randomized controlled trial of cognitive-behavioral therapy for psychosis (Kuipers et al., 1997) found a 25% reduction in symptom severity on the BPRS after 9 months. Tarrier et al. (1998) found an overall improvement of 20% on the BPRS for patients receiving cognitive behavior therapy. The present study’s finding of decreased symptom severity on the total PANSS score from 83 to 65 (or 22%) is in line with the magnitude of change reported in these two studies.

These data are extremely encouraging. However, confirmation with a more rigorous experimental design is essential, because the present study has a number of limitations. First, the study was not a true experimental design: there was no random allocation of patients to the experimental and control conditions. Specifically, the control group consisted of patients from another ward of the hospital who received medication and routine psychosocial treatment and clinical care. Controls had a higher “pre” score on the negative sub-scale and on the positive factor of the PANSS, suggesting they may have been more severely ill at baseline than COG patients. Second, it was not possible to have independent assessment of symptom severity on the PANSS. Ratings were by group leader and/or by psychiatric residents associated both with the study and, in some cases, with the treatment. Finally, the time between pre- and post-assessment was different for the 2 groups (12 weeks for all subjects in the CON group vs 8 to 21 weeks for COG), and the CON group had pre-existing PANSS assessments as part of another earlier study.

In conclusion, these results suggest that symptom-specific cognitive-behavioral group therapy is an effective adjunctive form of therapy for patients with schizophrenia. However, although highly encouraging, these results are offered tentatively, as preliminary data only. The need to conduct a more rigorously controlled experimental study (with random allocation of patients to treatment and control conditions, as well as independent ratings of symptom severity) is recognized, and is presently being planned. Because patients taking part in this study had symptoms in the mild to moderate range, in order to extend the generalizability of the study, future work will examine whether inpatients and outpatients with symptoms outside the mild-moderate range also benefit. Other work by our team includes the development and standardization of our interventions into a 5-part treatment manual, each part specifically aimed at the treatment of one of the symptom clusters of schizophrenia as identified by the factors of the PANSS. The manual will provide a clear guide and teaching aid that will allow a range of hospital staff to act as group leaders in running cognitive-behavioral groups.

References


