Effectiveness of Brief Cognitive-Behavioral Therapy for Schizophrenia Delivered by Mental Health Nurses: Relapse and Recovery at 24 Months

Navdeep Malik, M.R.C.Psych.; David Kingdon, M.D.; Jeremy Pelton, R.M.N.; Raj Mehta, Ph.D.; and Douglas Turkington, M.D.

Background: Evidence of the efficacy of cognitive-behavioral therapy (CBT) for schizophrenia is increasing. There are very few studies of effectiveness, especially in the medium term.

Objective: To evaluate the durability of the effect of brief CBT provided by mental health nurses in community-based patients with schizophrenia (diagnosed according to ICD-10 research criteria), using time to relapse as primary outcome and days hospitalized and occupational recovery as secondary outcomes at 24-month follow-up.

Method: A 2:1 randomized trial, conducted from 1999 to 2003, was performed to evaluate the effects of brief CBT delivered by mental health nurses trained over 10 days with ongoing supervision compared to treatment as usual (TAU), with measurement performed by raters blind to treatment allocation.

Results: 205 (79.8%) of 257 CBT patients and 125 (75.8%) of 165 TAU patients could be followed up at 24 months. Of 205 patients in the CBT group, 64 (31.2%) relapsed, versus 57 (45.6%) of 125 patients in the TAU group ($p = .02$). Patients rehospitalized from the CBT group spent a total of 6710 days in hospital (mean = 32.7 days), while those from the TAU group were inpatients for 6114 days (mean = 48.9 days) ($p < .05$). Twenty-one (10.2%) of 205 patients made an occupational recovery in the CBT group, and 17 (13.6%) of 125, in the TAU group (χ^2 test not significant). Mean time to relapse was 356.8 days (SD = 241.9 days) for the CBT group and 296.1 days (SD = 215.7 days) for the TAU group (OR = 1.592, 95% CI = 1.038 to 2.441, $p = .033$).

Conclusion: Beneficial effects on relapse and rehospitalization following brief CBT delivered by mental health nurses in community-based patients with schizophrenia are maintained at 24-month follow-up. Occupational recovery is not improved by brief CBT.

J Clin Psychiatry 2009;70(2):201–207

Received Dec. 12, 2007; accepted April 30, 2008. From the School of Neurology, Neurosciences and Psychiatry, Newcastle University (Drs. Malik and Turkington and Mr. Pelton), and Royal Victoria Infirmary (Drs. Malik and Turkington), Newcastle upon Tyne; the Department of Psychiatry, University of Southampton, and Royal South Hampshire Hospital, Southampton (Dr. Kingdon); and the Research and Development Unit, Department of Statistics, Southampton General Hospital, Southampton (Dr. Mehta), United Kingdom.

This study was funded by a research grant from Pfizer UK. The funding agency had no role in the planning, analysis, or publication strategy of this study.

We acknowledge the support and advice of the Insight into Schizophrenia Research Group and Insight Advisory Board, named in our previous publications (references 14 and 22). We also acknowledge the contribution made by Chris Honey, R.M.N. Mr. Honey has no financial conflict of interest relative to the subject of this article.

Dr. Turkington has received grant/research support from Pfizer UK and has received honoraria from Pfizer, Eli Lilly, Bristol-Myers Squibb, AstraZeneca, and Janssen-Cilag. Drs. Malik, Kingdon, and Mehta and Mr. Pelton have no personal affiliations or financial relationships with any commercial interest to disclose relative to the article.

Corresponding author and reprints: Navdeep Malik, M.R.C.Psych., Liaison Psychiatry, School of Neurology, Neurosciences and Psychiatry, Newcastle University, Royal Victoria Infirmary, Richardson Road, Newcastle upon Tyne, NE1 4LP, United Kingdom (e-mail: Navdeep@doctors.org.uk).

Schizophrenia is usually considered to be a chronic illness with persisting, relapsing, or deteriorating symptoms and little hope for sustained remission and recovery of functioning. Yet, retrospective and prospective studies suggest that schizophrenia has a heterogeneous course, which can be favorably influenced by comprehensive and continuous treatment as well as personal factors such as family support and good neurocognitive functioning.[1] Long-term follow-up studies in community-based services describe a more optimistic outcome, with the majority of patients being untroubled by positive symptoms at 15 to 20 years.[2]

Although antipsychotic medication is effective in reducing relapse rates, 30% to 40% of patients relapse within 1 year after hospital discharge even if they are receiving maintenance medication.[3,4] Combining antipsychotic medication with psychosocial approaches has been found to be more effective than pharmacotherapy alone in delaying or preventing relapse or reducing hospital days.[5,6] Varying definitions of relapse[7] have been used in research settings and can be as narrow as requiring hospitalization[8] or may require an increase of positive symptom items on

FOR CLINICAL USE

- Mental health nurses can be trained to deliver brief cognitive-behavioral therapy (CBT) safely and effectively to patients with schizophrenia and their carers.
- Brief CBT delivers a durable benefit on relapse rate, time to relapse, and duration of hospitalization in schizophrenia.
- Brief CBT as delivered by mental health nurses is cost effective.

the Brief Psychiatric Rating Scale that did not respond to a dose increase,[9] a Clinical Global Impressions scale rating above 6, an increase in the Positive and Negative Syndrome Scale score,[10] or self-injury, suicide, homicidal ideation, or violent behavior.

Symptomatic relapse in schizophrenia is distressing as well as costly, in terms of both personal and financial costs. It can devastate the lives of not only the patients but also their families. The debilitating symptoms require specialist health care interventions and targeted treatments, with potentially high costs.[11]

Schizophrenia is a costly disease. Twenty-two percent of the costs of mental illness, i.e., approximately 1.5% to 3% of national health expenditures in developed countries, is related to schizophrenia.[12] The overall U.S. cost of schizophrenia was estimated to be $62.7 billion in 2002, with $22.7 billion excess *direct* health care costs and $32.4 billion excess *indirect* health care costs.[13]

In our study, the effect of brief cognitive-behavioral therapy (CBT) was compared to treatment as usual in terms of time to relapse (primary outcome), rehospitalization rates, and occupational recovery at 24 months (medium-term) from baseline. Any patient needing hospitalization was considered to have relapsed. Our criterion for occupational recovery (similar to that for psychosocial functioning used by Liberman et al.[1]) was a return to paid or voluntary work (full-time or part-time) or resumption of education or training. Ethical approval to perform the study was obtained from the National Health Service Multi-Center Research Ethics Committee (London, United Kingdom).

METHOD

A full description of the methodology is provided elsewhere.[14] A summary follows.

Study Population

Registers of patients meeting ICD-10 research criteria for schizophrenia were drawn up in each of 6 centers in the United Kingdom.[15] Most patients were being case-managed by mental health services. Patients were also drawn from primary care settings and were predominantly receiving treatment in outpatient, depot injection, or clozapine clinics. Patients were not necessarily medication-resistant,[16] but patients included in the trial had ongoing positive and/or negative symptoms or were at risk of relapse. The group basically represented patients with schizophrenia with moderate levels of ongoing symptoms who were being managed by their psychiatrist, with community mental health team or general practitioner support in the community. The study was conducted from 1999 to 2003.

Sampling Method

Exclusion criteria included an active relapse, a primary diagnosis of substance or alcohol dependence, organic brain disease, or a learning disability severe enough to interfere with rating. With permission from each patient's psychiatrist and community key worker, we approached each patient for written informed consent. Block randomization was performed using blocks of 6 random numbers, and to enable intersite comparisons, stratification was by site on a 2:1 ratio (CBT vs. TAU), thereby enabling us to conduct the trial from a position of clinical equipoise. At the end of the final follow-up assessment, all TAU patients were given the choice of receiving CBT. A pilot study[17] on brief CBT delivered by general psychiatrists was used to power this study, to give a 90% chance of detecting a 25% level of difference in overall symptoms at the .01 level of significance. The CBT group was composed of 257 patients, while the TAU group had 165 patients.

Assessments

Patients were advised not to disclose their group allocation to the raters, who in turn were told that some randomly selected TAU-group patients would be sent a sample of CBT material. During the follow-up period, with blinding maintained, case notes were referred to for evidence of occupational recovery. Time to relapse (hospitalization) and total days hospitalized were logged blind to treatment group at the 24-month cut-off point. Results were independently analyzed using a central database. Medication changes from end of intervention and the number of atypical antipsychotics used over the follow-up period were recorded.

Dropouts

No data were imputed for patients with whom we did not have contact (via previous community mental health

teams) at 24 months. There was no statistical difference in number of dropouts between both groups (Figure 1). The patients who dropped out did not differ symptomatically from those who were followed until the end of the study.

Training for Intervention

All mental health nurses underwent a 10-day CBT-of-schizophrenia training program. The mental health nurses were all qualified as registered mental nurses (RMNs), but none held a qualification at Master's or equivalent level. One of the nurses (J.P.), who had a diploma-level qualification in CBT of schizophrenia, acted as a co-trainer/co-supervisor for the other nurses. The other 5 nurses had no basic knowledge of CBT although they were experienced in working with schizophrenia in community settings. CBT training involved a description of the key stages of therapy.[18,19] Forging a therapeutic alliance with the psychotic patient and developing normalizing and destigmatizing explanations for hallucinations and delusions formed the foundation of this treatment model. Thereafter, mental health nurses were taught the technique of making a CBT assessment and subsequently developing a formulation of the onset and maintenance of psychotic symptoms. Following this instruction, trainers demonstrated techniques on how to manage troublesome psychotic symptoms (hallucinations, delusions, and negative symptoms). In addition, sessions included learning techniques to improve concordance with antipsychotic medication, developing more functional beliefs concerning self and others, and developing a personalized relapse prevention plan. As such, nurses were being trained to achieve good engagement and then to work flexibly using CBT techniques to improve understanding, to develop coping skills, and to take more control over the illness. To help develop confidence in technique application in each stage of therapy, demonstrations followed by role-play and reversal exercises were practiced. Numerous case examples were worked through.[20] After training was concluded, weekly supervision approximately 1 hour in length was provided.

Cognitive-Behavioral Therapy Intervention

Components of CBT included engaging psychotic patients and developing stigma-reducing explanations for psychotic symptoms. Thereafter, CBT techniques were based on a formulation to reduce distress. Sessions were also spent on improving adherence and changing negative attitudes to psychotic symptoms. Relapse prevention strategies included the development of an early relapse signature, identification of stressors, and creation of an action plan. Carers were given 3 parallel sessions of CBT when a carer was available. Sessions focused on reducing stigma, dealing with strong emotions, and understanding formulation of psychotic symptoms. They were also taught coping strategies and how to help with homework and work with relapse prevention.

Treatment Groups

Intervention group. Each patient received a total of 6 CBT sessions with a mental health nurse over a 2-month to 3-month time period. If the patient consented, the main caregiver was offered 3 sessions of CBT so that they could help with comprehending the case formulation, managing psychotic symptoms, and preventing relapse. This brief CBT intervention is technique-based and should not be confused with the formulation-based and schema-focused CBT described by the National Institute for Clinical Excellence[7] for treatment resistance. Attendance at less than 3 CBT sessions was taken as a dropout. A series of informative booklets for patients and carers was prepared to back up the CBT sessions. No booster sessions were given over the follow-up period. The CBT therapists were not responsible for day-to-day patient care and delivered their intervention supplementary to standard care. CBT therapists were recruited independently for the purpose of this study and were added to the personnel of the community mental health team. These nurses did not prescribe medication.

To assess treatment fidelity, 3 mid-therapy audiotapes were randomly selected from each nurse. Two psychologists rated these audiotapes independently using the Cognitive Therapy Scale for Psychosis[21] to test treatment fidelity. The mean score was 38.4 (95% CI = 35.78 to 41.9), with no statistically significant difference between general and specific subscales, thereby indicating that CBT techniques were being used in these sessions. While the scores on the Cognitive Therapy Scale for Psychosis were lower than the score that might be expected from therapists who had received intensive training to carry out CBT with treatment-resistant psychotic patients, these scores do indicate that the nurses were employing CBT techniques in their intervention.[22]

Treatment-as-usual group. Standard care for schizophrenia includes these common elements: regular review by a psychiatrist, free antipsychotic medication including clozapine, access to day hospital, and social support in the community if needed. Crises intervention, home treatment teams, and assertive outreach teams were established after this trial was completed. Unfortunately, psychoeducation, family therapy, and social skills training are rarely available in the United Kingdom. Patients randomly assigned to receive TAU received their normal care plan as organized by the community key worker. This plan included regular psychopharmacologic review.

Statistical Analysis

Results were analyzed independently at the follow-up points (end of therapy that lasted 5 months, 12 months, and 24 months) using SPSS, version 14 (SPSS Inc., Chicago, Ill.). Differences in symptomatic improvement between the 2 groups were assessed using analysis of covariance at 5-month and 12-month follow-up on an intention-to-treat basis. The covariates used were baseline measurements for

the corresponding dependent variables. Tests of normality and skewness across continuous clinical variables were within acceptable limits. Missing data at 12-month follow-up were accounted for by imputing a group mean. Time to relapse was taken as the primary outcome at the 24-month follow-up. Secondary outcomes included number of patients relapsed in each group, days hospitalized, and number of patients achieving occupational recovery. Total number of days hospitalized for each patient was calculated over the 24-month period from baseline and compared between the 2 groups using parametric statistics. Time to relapse, as measured by hospitalization, was analyzed using a survival analysis according to Kaplan-Meier methodology. An assessment of occupational recovery was made by a reviewer from a complete perusal of the medical records. The reviewer was blind to treatment group. χ^2 was used to analyze differential rates of occupational recovery between the 2 groups. Other statistical values calculated were confidence interval (CI) and number needed to treat, which indicates the number of patients who need to be treated to prevent 1 bad outcome (relapse/rehospitalization) and was calculated as the inverse of the risk difference. It was predicted that, due to the large sample size, any referrals to other psychosocial interventions such as vocational guidance would be balanced between the 2 groups.

RESULTS

This study reports only on those patients who were available for follow-up at 24 months: 205 of 257 CBT patients and 125 of 165 TAU patients. There was no significant baseline difference in gender ratio, symptom severity, duration of illness, number of episodes of hospitalization, mean lifetime number of days hospitalized, or medication dose/numbers of patients on atypical antipsychotic treatment between those patients who were lost to follow-up and those who were available for follow-up at 24 months (data not shown).

Relapse Rates

In the CBT group, 64 (24.9%) of 257 patients relapsed over the 24-month period (cut-off point 730 days post baseline) in comparison to 57 (34.5%) of 165 patients in the TAU group.

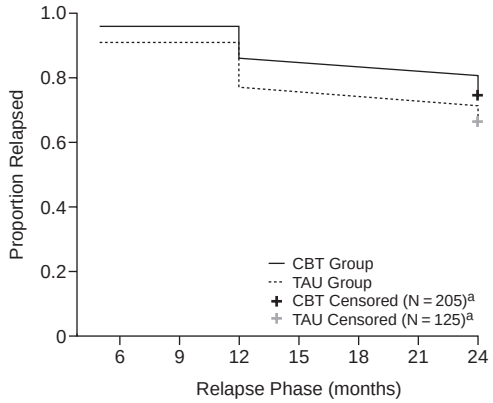
Rehospitalization Duration

Patients rehospitalized from the CBT group spent a total of 6710 days in hospital (mean = 32.7 days), while those rehospitalized from the TAU group were inpatients for 6114 days (mean = 48.9 days) ($p < .05$).

Time to Relapse

Mean time to relapse was 356.8 days (SD = 241.9 days) for the CBT group and 296.1 days (SD = 215.7 days) for the TAU group (OR = 1.592, 95% CI = 1.038 to 2.441, $p = .033$). Figure 1 shows proportion of patients relapsed from baseline at 5, 12, and 24 months.

Figure 1. Proportion of Study Patients Relapsed From Baseline by Group at 5, 12, and 24 Months



[a]CBT-censored and TAU-censored groups did not include dropouts.
Abbreviations: CBT = cognitive-behavioral therapy, TAU = treatment-as-usual.

Prescribed Antipsychotics

Over the second 12 months of follow-up, there were a total of 64 switches of antipsychotic medication. Switches were recorded if there was a change to an atypical antipsychotic or a depot medication. There were 44 switches in the CBT group and 20 in the TAU group ($p > .05$, not significant). The numbers of patients taking depot medication and antidepressant medication were not statistically different between the groups. An intersite analysis revealed no statistically significant difference in outcome or in prescribing practice.

Occupational Recovery

Twenty-one (10.2%) of 205 patients made an occupational recovery in the CBT group, and 17 (13.6%) of 125 patients made an occupational recovery in the TAU group (not statistically significant on χ^2).

DISCUSSION

The results for end-of-therapy assessments (up to 5 months) and 12-month follow-up have been published.[14,22] Durable and statistically significant improvements were seen at 12-month follow-up on insight and negative symptoms in the CBT group when compared to the TAU group. Having defined a good clinical outcome as a greater than 25% improvement, the number needed to treat for insight was 11 and the number needed to treat for negative symptoms was 14. Benefits of CBT on relapse were shown at 12-month follow-up (overall log-rank test, $p = .018$).[22] It was hoped that these benefits on insight,

negative symptoms, and relapse might lead to durable relapse prevention/delay and improved occupational recovery over the medium term. At 24-month follow-up, CBT prevented or significantly delayed relapse, but occupational recovery was rare in both groups.

Relapse

At the 24-month point, patients with schizophrenia treated with brief CBT took a longer time to relapse in comparison to those in the TAU group (Figure 1). The TAU relapse rate was 30% at the 12-month point, which is identical to that seen with patients maintained on the atypical antipsychotic olanzapine.[23] CBT therefore has an impressive effect on relapse prevention and delay over and above that provided by an atypical antipsychotic. A relapse prevention strategy was individually constructed for every patient in the CBT limb of the trial. The beneficial effect of this approach may well have been enhanced by carer involvement. The effect found in this trial may also be related to the improved insight and more effective coping styles in the CBT group. Patients undergoing CBT over a period of time learn different techniques to delay relapse. They learn to normalize symptoms dealing with stigma and anxiety that otherwise worsen their illness, learn techniques to decrease the severity of delusions and hallucinations, and are aided by CBT in revising their beliefs about medications and improving their treatment adherence. Those who relapsed and were rehospitalized may have found it helpful to exercise these learned skills in coping with their symptoms and in subsequent adherence to treatment in the postdischarge period.[24] Our group has previously demonstrated that following therapy there was a statistically significant improvement in insight into the need for treatment in the intervention group at 12-month follow-up.[25] Whether this improved insight translated into actual adherence was not tested. These levels of improvement in relapse and rehospitalization rates are clinically important because of the benefits in terms of reduced hospitalization. Approximately £404,000 ($808,000 U.S.) could have been saved across the 6 sites if the beds could have been closed in view of these reduced hospitalizations, which could repay resources spent on training in CBT and the provision of supervision.[22] The average cost for each day hospitalized for a patient with schizophrenia in the United Kingdom is £300 ($600 U.S.) (Department of Health, National Health Service reference costs, 2002; available at: http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4069646). Savings at 24 months would have been approximately £830,700 ($1,661,400 U.S.).

At 2-year follow-up, Tarrier et al.[26] found significant differences for both CBT and supportive counseling over routine care for positive and negative symptoms and relapse rates but no differences between each other. In comparison, the Cochrane Collaboration's systematic review[27] included 19 randomized controlled trials in its assessment and found that CBT plus standard care did not reduce relapse and readmission compared with standard care but did decrease the risk of staying in hospital. CBT initially helped mental state, but after 1 year there was no difference. Similarly, the medium-term follow-up study of Drury et al.[28] showed benefits only for those who had failed to relapse during the follow-up period. The follow-up phase of the Study of Cognitive Reality Alignment Therapy in Early Schizophrenia (SoCRATES) trial,[29] which was also follow-up CBT treatment of acute relapsing schizophrenia, similarly showed no benefit on relapse prevention as compared to the control group. The benefits shown on relapse and insight using CBT-based compliance[30] were not replicated by recent replication trials.[31] Our study is by far the most highly powered CBT trial to have looked at relapse as a primary outcome and may well influence the conclusions of any future meta-analysis.

Caregiver's Role

Family therapy has already been shown to be effective in preventing relapse in patients from families with high expressed emotion, with a strong effect size.[32] Caregivers have always played an important role in patient management. Whenever patients consented, we involved caregivers by offering them 3 sessions to enlist their help with comprehending the case formulation, managing psychotic symptoms, and helping prevent relapse. Caregiver involvement proved useful in facilitating and reinforcing skills learned by patients.

Agents for Delivering Cognitive-Behavioral Therapy

Mental health nurses with no previous CBT experience, after undergoing training, can deliver brief CBT effectively and safely, thereby having a purposeful effect on relapse and recovery. Training in CBT is already an important integral component of some programs, e.g., the Thorn Program in the United Kingdom[33] and the Illness Management and Recovery program.[34] Nurses and (in the United States) Master's level case managers are in ideal positions to become agents for the delivery of CBT. However, they will need more intensive training than that currently offered in psychosocial intervention programs.[33]

Occupational Recovery

Brief CBT did not lead to any increase in occupational recovery, which was observed to be low in both groups. Integration with other psychosocial management programs, e.g., vocational rehabilitation, may be more successful through community review meetings.[35] Initial studies evaluating effects of CBT specifically on achieving vocational goals in patients with schizophrenia have begun taking into account the apparent obstacles of negative symptoms and cognitive impairment.[36,37] Other factors impeding employment include the welfare system's

disincentives to returning to work, limited availability of opportunities for recovering patients to involve themselves in productive avenues (contributed to by the lack of vocational centers, financial constraints, or inaccessibility), stigma, reluctance to employ people with a mental health disability, and an often exaggerated fear of failure by staff, patient, and caregiver.[38]

Implications of Our Findings

Training. There would be advantages to patient care and costs that may accrue from revision of current training priorities for health care deliverers. The intervention described involved only 10 days of intensive training with relatively brief weekly supervision. If this training and supervision were made available, mental health nurses and other front-line workers would be able to deliver brief, viable interventions of proven benefit.

Services. The evident benefits support the further dissemination of psychosocial interventions among mental health nurses. Cost savings from reduced hospitalization could be diverted toward CBT training.

Policy-making. These cost savings would be of interest to clinicians and other decision-makers who face difficult choices about new but more expensive treatment for patients with schizophrenia. Delaying the time to relapse should mean delaying the escalation of costs. More importantly, a slower or reduced rate of relapse means slower or reduced damage to health and quality of life of patients and, in some cases, also less adverse impact on their families.[11]

Research. Further research is needed on evaluating effects of CBT on occupational recovery, using CBT in schizophrenia in North America, and integrating CBT into day-to-day clinical management of patients with schizophrenia. Future effectiveness studies of CBT in schizophrenia should include more detailed measures of psychosocial outcome.

Expert CBT therapists. For a more complex patient population (e.g., personality disorders, comorbid drug and alcohol use, posttraumatic stress disorder, complex systematized delusions), expert therapists are needed to deliver a longer duration of CBT (20 or more sessions).

Applicability to American Health Care System

Problems do remain with applicability of the results to different populations and treatment settings in a system that works on a different set of priorities. There are a number of questions that arise when considering how to interpret the evidence for a U.S. treatment environment.[39] There has been a dearth of controlled studies of the efficacy of CBT for schizophrenia in the United States. In the United Kingdom, CBT sessions are commonly done in community settings or in the patient's home, in line with the prevailing U.K. outreach approach. It is also possible to do such interventions in an outpatient-based service, but we find that patients with schizophrenia are more likely to engage with an outreach-based CBT delivery style. Whether these results can be transformed into practice across the Atlantic is yet to be seen, although successful pilot projects are emerging from the North American continent, from the United States[36,40,41] and Canada.[42]

Strengths of the Study

Some limitations of early prospective studies of CBT for schizophrenia were overcome, such as relatively small sample size, lack of fidelity ratings of therapy sessions, and relatively high attrition rates. Furthermore, following the cohort for 24 months has enabled us to have more insight into the course of recovery in response to 1 brief spurt of therapy, when there is dearth of such follow-up data. Our study also included a randomized design and evaluations that were blind to treatment assignment.

Limitations of the Study

1. There was no active therapy comparator (control for time and other nonspecific components) against which effectiveness of CBT could have been ascertained.
2. Use of hospitalization as the relapse definition is narrow, as patients might have missed out on admission because of development of Crisis and Home Management Teams. Though the differential effects of these specialist teams were not controlled for in this trial, these services were very limited in availability across the sites.
3. Reinforcement of CBT sessions by only some caregivers could have led to a bias in intensity of intervention provided to some patients in the intervention group.
4. Generalizability of these results is limited by the fact that the mental health nurses were externally funded.
5. The sample may not be representative of the population with schizophrenia as a whole, e.g., more seriously ill patients, particularly those with dual diagnosis, are more likely to refuse to enter clinical trials. Ethnic distribution of the sample population (7%–8% African Caribbean/African black/Asian) may limit generalizability.
6. Cost effectiveness considerations took account of hospitalization and direct therapy costs but not other use of resources (e.g., day care center visits, community psychiatric nurse visits) by the patients who did not relapse.

CONCLUSIONS

We would suggest that brief CBT be made available as an adjunct to standard care for patients with schizophrenia and their caregivers, supplemented with adequate group psychoeducation as an adjunct to antipsychotic medication. An option needs to be available for family

therapy, cognitive remediation, and social skills training as indicated.

CBT-of-schizophrenia research needs to address a broader range of outcomes beyond symptomatic relief, including relapse, functional status, and quality of life. CBT could be expected to deliver improved social outcomes with the addition of vocational rehabilitation.

Drug names: clozapine (FazaClo, Clozaril, and others), olanzapine (Zyprexa).

Disclosure of off-label usage: The authors have determined that, to the best of their knowledge, no investigational information about pharmaceutical agents that is outside U.S. Food and Drug Administration–approved labeling has been presented in this article.

REFERENCES

1. Liberman RP, Kopelowicz A, Ventura J, et al. Operational criteria and factors related to recovery from schizophrenia. Int Rev Psychiatry 2002;14:256–272
2. 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; 178:506–518
3. Davis JM. Overview, maintenance therapy in psychiatry, pt 1: schizophrenia. Am J Psychiatry 1975;132:1237–1245
4. Hogarty GE, Schooler NR, Ulrich R, et al. Fluphenazine and social therapy in the aftercare of schizophrenic patients: relapse analyses of a two-year controlled study of fluphenazine decanoate and fluphenazine hydrochloride. Arch Gen Psychiatry 1979;36:1283–1294
5. Lehman AF, Steinwachs DM. Translating research into practice: the Schizophrenia Patient Outcome Research Team (PORT) treatment recommendations. Schizophr Bull 1998;24:1–10
6. Lehman AF, Steinwachs DM. Pattern of usual care for schizophrenia: initial results from the Schizophrenia Patient Outcome Research Team (PORT) client survey. Schizophr Bull 1998;24:11–20
7. National Institute for Clinical Excellence (NICE). Clinical Guideline: Schizophrenia, Full National Clinical Guideline on Core Interventions in Primary and Secondary Care. London, United Kingdom: Gaskell Publications; 2003
8. Tran PV, Dellva MA, Tollefson GD, et al. Oral olanzapine versus oral haloperidol in the maintenance treatment of schizophrenia and related psychoses. Br J Psychiatry 1998;172:499–505
9. Speller JC, Barnes TR, Curson DA, et al. One-year, low-dose neuroleptic study of in-patients with chronic schizophrenia characterised by persistent negative symptoms: amisulpride v haloperidol. Br J Psychiatry 1997;171: 564–568
10. Csernansky J, Okamoto A. Risperidone versus haloperidol for prevention of relapse in schizophrenia and schizoaffective disorders: long-term double-blind comparison. Schizophr Res 2000;41:198–199
11. Almond S, Knapp M, Francois C, et al. Relapse in schizophrenia: costs, clinical outcomes and quality of life. Br J Psychiatry 2004;184:346–351
12. Rice DP. The economic impact of schizophrenia. J Clin Psychiatry 1999; 60(suppl 1):4–6
13. Wu E, Birnbaum HG, Shi L, et al. The economic burden of schizophrenia in the United States in 2002. J Clin Psychiatry 2005;66:1122–1129
14. Turkington D, Kingdon D, Turner T. Insight into Schizophrenia Research Group. Effectiveness of a brief cognitive-behavioural therapy intervention in the treatment of schizophrenia. Br J Psychiatry 2002;180:523–527
15. World Health Organization. The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Description and Diagnostic Guidelines. Geneva, Switzerland: WHO; 1992
16. Sensky T, Turkington D, Kingdon D, et al. A randomized controlled trial of cognitive-behavioral therapy for persistent symptoms in schizophrenia resistant to medication. Arch Gen Psychiatry 2000;57(2):165–172
17. Turkington D, Kingdon D. Cognitive-behavioural techniques for general psychiatrists in the management of patients with psychoses. Br J Psychiatry 2000;177:101–106
18. Kingdon D, Turkington D. Cognitive-Behavioral Therapy of Schizophrenia. New York, NY: Guilford Press; 1994
19. Kingdon DG, Turkington D. Persons J, ed. Cognitive Therapy of Schizophrenia: Guides to Individualized Evidence-Based Treatment. New York, NY: Guilford Press; 2005
20. Kingdon D, Turkington D. The Case Study Guide to Cognitive Behavioral Therapy of Psychosis. London, UK: Wiley; 2002
21. Haddock G, Devane S, Bradshaw T, et al. An investigation into the psychometric properties of the Cognitive Therapy Scale for Psychosis (CTS-Psy). Behav Cognit Psychother 2001;29:221–234
22. Turkington D, Kingdon D, Rathod S, et al. Outcomes of an effectiveness trial of cognitive-behavioural intervention by mental health nurses in schizophrenia. Br J Psychiatry 2006;189:36–40
23. Beasley CM Jr, Sutton VK, Hamilton SH, et al. A double-blind, randomized, placebo-controlled trial of olanzapine in the prevention of psychotic relapse. J Clin Psychopharmacology 2003;23(6):582–594
24. Gumley A, O'Grady M, McNay L, et al. Early intervention for relapse in schizophrenia: results of a 12-month randomized controlled trial of cognitive behaviour therapy. Psychol Med 2003;33(3):419–431
25. Rathod S, Kingdon D, Smith P, et al. Insight into schizophrenia: the effects of cognitive behavioural therapy on the components of insight and association with sociodemographics: data on a previously published randomized controlled trial. Schizophr Res 2005;74(2-3):211–219
26. Tarrier N, Kinney C, McCarthy E, et al. Two-year follow-up of cognitive-behavioural therapy and supportive counseling in the treatment of persistent symptoms in chronic schizophrenia. J Consult Clin Psychol 2000;68(5):917–922
27. Jones C, Cormac I, Silveira da Mota Neto JI, et al. Cognitive behaviour therapy for schizophrenia. Cochrane Database Syst Rev 2004 Oct 18;4: CD000524
28. Drury V, Birchwood M, Cochrane R. Cognitive therapy and recovery from acute psychosis: a controlled trial, pt 3: five-year follow-up. Br J Psychiatry 2000;177:8–14
29. Tarrier N, Lewis S, Haddock G, et al. Cognitive-behavioural therapy in first-episode and early schizophrenia: 18-month follow-up of a randomised controlled trial. Br J Psychiatry 2004;184:231–239
30. Kemp R, Kirov G, Everitt P, et al. Randomised controlled trial of compliance therapy: 18-month follow-up. Br J Psychiatry 1998;172:413–419
31. O'Donnell C, Donohoe G, Sharkey L, et al. Compliance therapy: a randomised controlled trial in schizophrenia. BMJ 2003;327:834
32. Kuipers E, Bebbington P, Dunn G, et al. Influence of carer expressed emotion and affect on relapse in non-affective psychosis. Br J Psychiatry 2006;188:173–179
33. Gourney K. The changing face of psychiatric nursing. Adv Psychiatr Treat 2005;11:6–11
34. Mueser KT, Corrigan PW, Hilton DW, et al. Illness management and recovery: a review of the research. Psychiatr Serv 2002;53(10):1272–1284
35. Pelton J. Insight into Schizophrenia Research Group. Insight into schizophrenia: planning mental health service provision for schizophrenia using a brief psychological intervention. Int J Clin Pract 2001;55(2):135–137
36. Cather C, Penn D, Otto MW, et al. A pilot study of functional cognitive behavioral therapy (fCBT) for schizophrenia. Schizophr Res 2005;74 (2-3):201–209
37. Davis LW, Lysaker PH, Lancaster RS, et al. The Indianapolis Vocational Intervention Program: a cognitive behavioral approach to addressing rehabilitation issues in schizophrenia. J Rehabil Res Dev 2005;42 (suppl 1):35–45
38. Boardman J. Work, employment and psychiatric disability. Adv Psychiatr Treat 2003;9:327–334
39. Turkington D, Kingdon D, Weiden P. Cognitive behavior therapy for schizophrenia. Am J Psychiatry 2006;163(3):365–373
40. Temple S, Ho B. Cognitive therapy for persistent psychosis in schizophrenia: a case-controlled clinical trial. Schizophr Res 2005;74(2-3):195–199
41. Granholm E, McQuaid JR, McClure FS, et al. A randomized, controlled trial of cognitive behavioral social skills training for middle-aged and older outpatients with chronic schizophrenia. Am J Psychiatry 2005; 162(3):520–529
42. Rector NA, Seeman MV, Segal ZV. Cognitive therapy for schizophrenia: a preliminary randomized controlled trial. Schizophr Res 2003;63(1-2):1–11

For the CME Posttest for this article, see pages 302–304.

