

Patients' health literacy in psychotic disorders

Ghassen Saba
Lila Mékaoui
Marion Leboyer
Franck Schürhoff

AP-HP, Groupe Henri Mondor-Albert
Chenevier, Pôle de Psychiatrie,
Créteil, F-94000, France; INSERM
Unité 841, IMRB, Département de
Génétique, Equipe 15, Créteil,
F-94000, France; Université Paris 12,
Faculté de Médecine, IFR 10, Créteil,
F-94000, France

Abstract: Compliance and relapse are major issues in the treatment of psychotic disorders. About 50% of subjects with schizophrenia do not comply with treatment and relapse rates of 65% are reported after one year and 80% after two years. Drug treatments are effective against psychotic symptoms, but cannot promote functional recovery or prevent relapses when prescribed alone. The factors influencing compliance include side effects and the patients' awareness of their illness. Psychosocial interventions, cognitive remediation and psychotherapy have been proposed as adjuvant treatments to increase compliance and to decrease the rate of relapse. Most of these interventions have been shown to increase compliance and to decrease the rate of relapse, but the most robust results have been achieved with cognitive behavioral therapy.

Keywords: schizophrenia, psychotic disorders, compliance, antipsychotics, cognitive remediation

Introduction

Psychotic disorders and schizophrenia are disabling conditions characterized by positive symptoms, negative symptoms, and cognitive impairments. Most individuals with schizophrenia have a poor long-term outcome resulting in personal suffering and psychosocial disabilities including impaired interpersonal and vocational skills.

The use of antipsychotic medication to treat schizophrenia is well established. These drugs have been shown to be effective during the acute phase and for preventing relapse (Kennedy et al 2000; Quraishi and David 2000); Kisling (1994) argued that if patients complied fully with their medication, relapse rates would fall to about 15% (almost 50% of patients relapse within a year of achieving remission). Noncompliance is common throughout medicine, but some aspects of schizophrenia may make it particularly difficult for patients to accept their treatment. Although antipsychotic medication decreases symptoms, other issues may temper these beneficial effects, resulting in poor compliance and high rates of relapse. These issues include the side effects of antipsychotic drugs (such as weight gain, parkinsonism), and poor functional recovery following psychotic episodes. The rate of noncompliance is difficult to assess, but has been estimated at 25%–41% (Jeste et al 2003). Hogarty and colleagues (1997) demonstrated that the relapse rate increases from 40% to 65% after one year and to 80% after two years if medication is discontinued. However, if psychosocial treatment is given in addition to maintenance drug treatment, the relapse rate may be up to 50% lower than that for drug treatment and standard care. Factors associated with noncompliance include poor insight, negative attitude to medication, a history of noncompliance, substance abuse, short duration of illness and a poor therapeutic alliance (Jeste et al 2003).

Individuals suffering from psychosis tend to have impaired social functioning (Erickson et al 1989; Grant et al 2001), quality of life (Priebe et al 2000; Addington et al 2003a; Addington 2003b), cognitive and occupational functioning, even if they display clinical recovery (Penn et al 2005). These rate-limiting factors should be

Correspondence: Franck Schürhoff
Pôle de Psychiatrie, Hôpital Albert
Chenevier, 40 rue Mesly, 94 000 CRETEIL,
France
Tel +33 1 49 81 30 51
Fax +33 1 49 81 30 59
Email schurhof@ext.jussieu.fr

considered as therapeutic targets for improving psychosocial outcome and increasing the readiness of people with schizophrenia to undergo rehabilitation. Baseline attitudes to treatment and motivational and training variables also affect remediation (Fiszdom et al 2005). Several programs dealing with these aspects have been developed and the term of "compliance therapy" is sometimes used (Kemp et al 1996, 1998). Compliance therapy includes cognitive behavioural therapy, psychoeducation and remediation, with the aim of providing information about the illness and side effects, and improving cognitive and psychosocial functioning.

We review here previous studies dealing with compliance in schizophrenia and psychotic disorders. The articles were selected from the MEDLINE and PubMed databases, using the following terms: (1) remediation, (2) rehabilitation, (3) psychosis, (4) antipsychotics, and (5) psychosocial treatment.

Antipsychotic medication and attitudes to treatment

The patient's attitude to medication is a major issue in determining the outcome. This attitude to drug may reflect compliance. Relapse rates have been shown to be up to five times higher in noncompliant than in compliant subjects, resulting in significantly higher costs for these patients and for society (Robinson et al 1999). Several studies have investigated the possible relationship between compliance and type of antipsychotic medication (Kane et al 1985; Lacro et al 2002). Some have suggested that the use of atypical antipsychotic drugs may be associated with fewer side effects, better compliance and a lower rate of relapse. The newer antipsychotic drugs efficiently attenuate the symptoms of schizophrenia without causing dysphoria and motor side effects. This higher tolerability and efficacy may lead to more positive attitudes to drug treatment in schizophrenic patients taking second-generation antipsychotic drugs than in patients taking first-generation antipsychotic drugs (Day et al 2005). The specificity of care associated with some treatments may be beneficial to patients. Marder and colleagues (1996) showed in their review that periodic visits for blood monitoring, which are obligatory for patients on clozapine, improved the therapeutic alliance, making it easier for the clinician to monitor compliance.

The question of the relationship between adverse effects and compliance with medication is highly complex. Some studies have reported a significant relationship between various adverse effects and noncompliance, whereas others do not. According to Kampman and colleagues (2002), patients'

predictions concerning their compliance depend on the harmful side effects they experience at the acute phase of psychosis. Extra-pyramidal effects are most frequently considered anticholinergic and other adverse effects are also linked to compliance. According to Freudenreich and colleagues (2004), extra-pyramidal symptoms are not the primary factor determining attitudes to treatments. These authors studied the relationship between drug attitude inventory (DAI scale) score and psychopathology, insight, extra-pyramidal symptoms, level of functioning and type of antipsychotic drug in 81 schizophrenic outpatients. Their results suggest that patients who recognize adverse effects of therapeutic drugs may actually have a more positive attitude.

It has also been suggested that personal characteristics such as attitude to health and illness, may be critical in determining attitudes to medication (Jeste et al 2003). These factors might reduce the importance of medication-related side effects in determining treatment compliance. Indeed, it has been shown that distress due to side effects is not necessarily linked to noncompliance in outpatients with schizophrenia (Weiden et al 1991). In addition, no significant difference in compliance was found between depot, first- and second-generation antipsychotics (Rittmannsberger et al 2004). Schizophrenic subjects do not perceive side effects and symptoms as independent (Carrick et al 2004). In a review of the literature concerning side effects and compliance, Lacro and colleagues (2002) reported that subjective response to medication affects both compliance and the risk of relapse. They also found that noncompliance was associated with a poorer therapeutic alliance. These results were confirmed by Rettenbacher and colleagues (2004), in both inpatients and outpatients. These authors demonstrated a positive correlation between compliance and the patients' impression that the drug had a positive effect on the illness. They therefore stressed the need to include patients and their relatives in the treatment decision process, to increase treatment compliance. Perkins and colleagues (1990) proposed a model in which compliance with treatment is determined by the patients' assessment of the perceived benefits of treatment and the risks of illness versus the costs of treatment, including adverse effects. Patients who believe that the risks of treatment outweigh the benefits are likely to stop taking their medication. Patients who recognize the therapeutic effects of their medication may therefore have a more positive attitude to treatment.

Thus, side effects do not seem to be the main predictor of compliance: attention should therefore be paid to the

patients' subjective feelings about treatment, including the recognition of positive and negative therapeutic effects in particular.

Psychological interventions

Pharmacological treatments are the first-line treatment for schizophrenia, but adjuvant treatments are also required to achieve functional recovery or to prevent relapse because antipsychotic drugs may not be sufficiently effective and noncompliance is a common problem (Ratakonda et al 1997). Psychotic disorders and schizophrenia should therefore be treated with a combination of drugs, psychological treatment and the rehabilitation of cognitive disorders and social skills. Several approaches have been developed including supportive therapy, integrated psychological treatment and social skills training. Interest in psychoeducation and remediation has recently increased (Spaulding et al 1999; Wikes et al 1999; Penadés et al 2002; Addington et al 2004; Byerly et al 2005). Educational interventions aim to provide patients with information about their illness and medication, with a view to increasing their understanding and promoting compliance. Penadés and colleagues (2002) showed that clinically orientated cognitive rehabilitation treatments seem to improve not only cognitive functioning and other functional aspects related to the illness. They compared 24 schizophrenia patients with cognitive impairment and 10 schizophrenia patients without cognitive impairment on integrated psychological treatment. They found a relationship between neuropsychological improvements and a greater autonomy and social functioning. Some studies have reported a positive correlation between executive functions, as evaluated with the Wisconsin Card Sorting Test and social competence (Spaulding et al 1999), or between verbal memory performance and psychosocial skill acquisition (Spaulding et al 1999; Wikes et al 1999). In 1996, Marder and colleagues randomly assigned eighty patients with schizophrenia to two groups, receiving either social skills training or supportive group therapy. Rates of psychotic exacerbation and Social Adjustment Scale scores were monitored. Significant main effects were identified, showing that social skills training was significantly more effective than supportive group therapy and significant interactions between psychosocial treatment and drug treatment were identified. However, the improvements observed were modest and confined to certain subgroups of patients. McPherson and colleagues (1996) compared one educational session with three educational sessions. They found that both regimes improved the

patients' knowledge about their medication but that three sessions of education gave significantly better results than one educational session during follow-up.

Four studies by Addington and colleagues (2001, 2003a, 2003b, 2004) examined the results of the Calgary Early Psychosis Program (offering a wide range of psychosocial interventions targeting the family, drug therapy, social skills) in patients with nonaffective first-episode psychosis (examining social functioning and quality of life over the course of one year). No effect on relapse rate was identified in any of these studies. However, only one of these studies reported a better quality of life and social functioning in patients receiving such interventions (Addington et al 2003b). One study reported a decrease in the use of hallucinogens, cannabis and alcohol in heavy users (Addington et al 2001) and another reported improvements in depression (Addington et al 2003a).

Computer-assisted cognitive enhancement therapy has been shown to modify cognitive style and social cognition in 121 schizophrenia patients (Hogarty et al 2004). The observed relapse rate was low in this study (10% after two years), and was significantly lower in the subgroup of patients with an IQ of 80 or higher. Finally, Byerly and colleagues (2005) examined the effect of a cognitive and psycho-educational approach in an open trial including 30 subjects with schizophrenia and schizoaffective disorders. Symptoms, insight, and attitude to medication did not change significantly during the study.

Most studies have demonstrated that cognitive deficits and related behavior are improved in patients suffering from schizophrenia, provided with sufficient rehabilitation (Spaulding et al 1999; Wikes et al 1999; Penadés et al 2002; Addington et al 2004). Recommendations for a specific psychosocial intervention in schizophrenia are probably best made on the basis of patient characteristics: intelligence, duration of illness, and phase of illness (Hogarty et al 2004). A meta-analysis of randomised controlled trials of social skills training and cognitive remediation provided no clear evidence of any benefits of social skills training on the global adjustment of relapse rate, social functioning, quality of life or treatment compliance (Pilling et al 2002).

Cognitive behavioral therapy (CBT) and other psychological interventions

Most studies on CBT in schizophrenia have assessed the efficacy of this approach and its effects on the symptoms of schizophrenia (see Turkington et al 2006). However, few

studies have tested whether CBT is more beneficial than treatment as usual (TAU) in terms of relapse and rehospitalization rates. Some studies have shown CBT to be of benefit in the treatment of positive (TARRIER et al 1998) and negative schizophrenia symptoms (SENSKY et al 2000). A prospective, multicentre, randomised controlled trial, with rater blinding and an 18-month follow-up period was conducted by TARRIER and colleagues (1998). In this study, CBT was found to be significantly more effective than TAU for attenuating symptoms and reducing relapse and rehospitalization rates. Other studies have also reported CBT to be significantly more effective than TAU in psychotic subjects suffering from an acute episode (LEWIS et al 2002; TARRIER et al 2004; STARTUP et al 2004) or chronic illness (TURKINGTON et al 2002; DURHAM et al 2003; RECTOR et al 2003; TROWER et al 2004). Similar improvements were also observed when the patients' insight was assessed (RATHOD et al 2005; VALMAGGIA et al 2005). The patients' insight into compliance and its implications were significantly better in CBT group than in the TAU group, but this difference was not maintained at follow-up (RATHOD et al 2005; VALMAGGIA et al 2005). Functional CBT (FCBT) has recently been developed as a novel approach for the treatment of psychotic symptoms. This technique was developed to extend the effects of CBT beyond symptom reduction, focusing on symptom interventions, working on functional goals. The therapeutic alliance and the patients' motivation are thought to be improved by linking interventions to life goals. In a pilot study, CARTER and colleagues (2005) compared FCBT with psychoeducation (PE) in 30 outpatients with schizophrenia. Both treatments consisted of weekly one-hour individual sessions for a total of 16 weeks. FCBT was significantly correlated with greater attenuation of positive symptoms and improvements in functioning (60% for FCBT versus 31% for PE). Another study compared PE with CBT (BECHDOLF et al 2005). The CBT group had significantly lower rehospitalization rates and higher levels of compliance with medication, persisting for more than two years. Finally, ZIMMERMANN and colleagues (2005) performed a meta-analysis on the efficacy of CBT in schizophrenia. This meta-analysis supported the general conclusion that CBT is a promising approach for the adjuvant treatment of positive symptoms in schizophrenia. Moreover, the therapeutic effects of CBT persist during follow-up, suggesting that CBT has long-term effects. Similar conclusions were drawn by BUTLER and colleagues (2006) in a review of meta-analyses. A large effect on the decrease in psychotic symptoms has been found and long-term follow-up has shown the maintenance of gains and even an increase in their magnitude. However, both authors highlighted a number

of variables that have not been specifically examined such as therapeutic alliance and neuropsychological deficits.

Other psychosocial treatments may be effective at preventing schizophrenia relapse. Personal therapy has a pervasive effect on social adjustment, which continues to improve three years of after discharge (HOGARTY et al 1997b). However, personal therapy increases the rate of psychotic relapse for independent patients living away from their families (HOGARTY et al 1997a). The intervention of the family has also been identified as important for preventing relapse and readmission (PILLING et al 2002).

Insight

According to KEMP and colleagues (1996, 1998), three dimensions define insight: acknowledgment of the psychiatric disease, ability to recognize psychiatric symptoms, and compliance with treatment. The lack of insight, or unawareness of illness in people with schizophrenia has been recognized as a medical condition: anosognosia.

A Dutch study has indicated that 80% of schizophrenic patients are aware of their diagnosis (VAN MEER et al 1997). Only 20% of these subjects sought this information from their psychiatrist, the others received this information from their doctor without asking for it. In a French study, more than 60% of patients declared that they knew the name of their illness and were able to talk about schizophrenic or psychotic disorders (FERRERI et al 2000). Several studies have evaluated the level of comprehension of individuals with schizophrenic disorders. WIRSHING and colleagues (2002) showed that only 10% of people suffering from schizophrenia were able to understand this from their first interview with the psychiatrist. A second explanation from the doctor was required in 53% of the cases. This study showed that the level of comprehension is correlated with the conceptual disorganization item of the BPRS scale.

Several specialists regard the question of insight as a major factor, enabling schizophrenia patients to take an active role in managing their symptoms and problems. Previous studies focusing on insight or self-awareness in schizophrenia have suggested that this cognitive dimension may have nosological value (RITTMANNBERGER et al 2004). The results obtained suggest that severe self-awareness deficits are a prevalent feature of schizophrenia (SMITH et al 2004). The lack of insight of schizophrenia patients is an important clinical issue. In a reference study of about 35 male forensic patients suffering from chronic schizophrenia, only 51% believed that they were suffering from a mental disorder (GOODMAN et al 2005).

In this study, a similar proportion reported awareness of a need for medication and correctly attributed symptoms to illness. This study also showed that poorer insight was correlated with a higher frequency of violent events. Amador and colleagues (1994) suggested that the lack of insight has two components: unawareness of illness and incorrect attributions of the causes of illness. Insight into illness and greater recognition of symptoms, severity of illness and functioning are predictors of a more favorable outcome in schizophrenia.

Symptom awareness deficits are common in schizophrenia and have been associated with poor treatment compliance (Davis et al 2004). Several studies have reported that individuals with severe negative symptoms tend to have the poorest insight (Amador et al 1994; Collins et al 1997; Schwartz et al 1998; Carroll et al 1999). In all these studies, impaired insight was considered to be an important factor contributing to poor treatment response and outcome in schizophrenia. Droulout and colleagues (2003) studied the relationships between insight and compliance with medication in subjects with psychosis. They demonstrated that compliance with medication is associated with the level of insight, independently of the patients' other demographic and clinical characteristics. This association between low-level insight and poor compliance with medication has been confirmed in several studies.

Quality of life

The question of the quality of life of individuals suffering from schizophrenia remains a little-studied issue. Awad and colleagues (2004) developed a conceptual model, suggesting that the major determinants of quality of life in schizophrenia are symptom severity, level of psychosocial functioning, and the presence of medication side effects. This model also suggests that quality of life may be influenced by the individual's subjective response to neuroleptic medication.

Some previous reports have suggested that insight has a major impact on quality of life scores (Atkinson et al 1997). The evaluation of quality of life made by individuals with schizophrenia may be influenced by the presence of psychotic symptoms and by adaptation to the adverse social circumstances that they frequently experience. In several epidemiological studies, schizophrenic patients with poor insight, particularly those who displayed a lack of awareness of the consequences of the illness, were found to be more socially isolated and to have poorer psychosocial functioning (Amador et al 1994). According to Browne and colleagues (2005), there is no significant relationship between quality

of life and the level of insight. These authors reported a direct link between the development of treatment strategies to alleviate neuroleptic-induced dysphoria and the benefits of rehabilitation programmes for improving quality of life. In everyday life, the question of quality of life is associated with the problem of comorbidity. For example, nicotine problems are very frequently diagnosed by psychiatrists in people suffering from schizophrenia (Montoya et al 2005). Patients with such nicotine problems display poorer treatment compliance than their counterparts without such problems (Hudson et al 2004). In a sample of 1843 patients followed by psychiatrist, 16.6% were reported to have a current nicotine problem. This study suggests that psychiatric patients who smoke have more clinical and psychosocial stressors and more severe psychiatric problems than those who do not smoke (Montoya et al 2005). Little is known about the extent to which patients suffering from schizophrenia are preoccupied by their health and how often they request assistance to give up smoking.

Therapeutic alliance

In many studies, the therapeutic alliance has been associated with compliance (Fenton et al 1997; Kampman et al 1999; Lacro et al 2002; Day et al 2005). More and more studies are now examining the subjective reasons for which patients are willing or reluctant to take medication. According to Loffler et al (2003), the quality of relationships with clinicians during acute admissions appears to be a major determinant of patients' attitudes to treatment and compliance with medication. They assessed attitudes to treatment and self-reported compliance with medication in 28 inpatients and showed that a poor relationship with the prescriber, a feeling of being coerced during admission and a low level of insight were predictive of a negative attitude to treatment. Similarly, two other studies have shown that feelings of coercion were associated with a tendency to reject psychiatric services (Rogers et al 1993; Lidz et al 2000). In a study of compliance in outpatients, Rittmannsberger et al (2004) found that regular visits to a psychiatrist were correlated with good compliance. According to these authors, not visiting a psychiatrist could be seen as just another aspect of noncompliance. They also suggested that visiting a psychiatrist may protect against noncompliance. According to Davis et al (2004), neurocognition may be predictive of perceived therapeutic alliance in people with schizophrenia. These authors showed in a sample of 24 patients with schizophrenia spectrum disorders, that poorer performance in verbal memory tests was significantly related to client reporting of a strong alliance, whereas better

performance in visual spatial reasoning tests was significantly related to therapist reporting of a strong alliance.

Conclusion

Published studies on compliance have highlighted the importance of assessing the factors influencing compliance at an early stage of the disease process. Side effects of medication and the patient's awareness of their illness are major issues in the treatment of psychotic disorders because of the high rate of relapse.

The use of atypical antipsychotic drugs, in addition to reducing schizophrenic symptoms, may also be associated with fewer side effects. The higher tolerability and efficacy of these drugs may lead to more positive attitudes to drug treatment in schizophrenic patients taking second-generation antipsychotic drugs.

Psychosocial interventions, cognitive remediation and psychotherapy have all been proposed as adjuvant treatments for increasing compliance, but the most robust results have been achieved with cognitive behavioral therapy.

Thus, reducing the side effects of the antipsychotic medication associated with psychological interventions seems to be a major challenge in efforts to improve compliance.

References

- Addington J, Addington D. 2001. Impact of an early psychosis program on substance use. *Psychiatr Rehab J*, 25: 60–7.
- Addington J, Willaims J, Young J, et al. 2004. Suicidal behaviour in early Psychosis. *Acta Psychiatrica Scandinavica*, 109:116–20.
- Addington J, Leriger E, Addington D. 2003a. Symptom outcome one year after admission to an early psychosis program. *Canadian Journal of Psychiatry*, 48:204–7.
- Addington J, Young J, Addington D. 2003b. Social outcome in early psychosis. *Psychological Medicine*, 33:1119–24.
- Amador XF, Flaum M, Andreasen NC. 1994. Awareness of illness in schizophrenia and schizoaffective and mood disorders. *Archives of General Psychiatry*, 51:826–36.
- Atkinson M, Zibin S, Chuang H. 1997. Characterizing quality of life among patients with chronic mental illness: a critical examination of the self-report methodology. *American Journal of Psychiatry*, 154:99–105.
- Awad AG, Voruganti LN. 2004. Impact of atypical antipsychotics on quality of life in patients with schizophrenia. *CNS Drugs*, 18:877–93.
- Bechdolf A, Köhn D, Knost B, et al. 2005. A randomized comparison of group cognitive-behavioural therapy and group psychoeducation in acute patients with schizophrenia: outcome at 24 months. *Acta Psychiatrica Scandinavica*, 112:173–9.
- Browne G, Courtney M. 2005. Housing, social support and people with schizophrenia: a grounded theory study. *Ment Health Nurs*, 26:311–26.
- Butler AC, Chapman JE, Forman EM, et al. 2006. The empirical status of cognitive-behavioral therapy: a review of meta-analyses. *Clin Psychol Rev*, 26:17–31.
- Byerly MJ, Fisher R, Carmody T, et al. 2005. A trial of compliance therapy in outpatients with schizophrenia or schizoaffective disorder. *Journal Clin Psych*, 66:997–1001.
- Carrick R, Mitchell A, Powell RA, et al. 2004. The quest for well-being: a qualitative study of the experience of taking antipsychotic medication. *Psychol Psychother*, 77:19–33.
- Carroll A, Fattah S, Clyde Z, et al. 1999. Correlates of insight and insight change in schizophrenia. *Schizophrenia Research*, 35:247–53.
- Carter C, Penn D, Otto MW, et al. 2005. A pilot study of functional cognitive behavioural therapy (FCBT) for schizophrenia. *Schizophrenia Research*, 74:201–9.
- Collins AA, Remington GJ, Coulter K, et al. 1997. Insight, neurocognitive function and symptoms clusters in chronic schizophrenia. *Schizophrenia Research*, 27:37–44.
- Davis LW, Lysaker PH. 2004. Neurocognitive correlates of therapeutic alliance in schizophrenia. *J Nerv Ment Dis*, 192:508–10.
- Day JC, Bental RP, Roberts C. 2005. Attitudes toward antipsychotic medication: the impact of clinical variables and relationships with health professionals. *Archives of General Psychiatry*, 62:717–24.
- Droulout T, Liraud F, Verdoux H. 2003. Relationships between insight and medication adherence in subjects with psychosis. *L'Encéphale*, 29:430–7.
- Durham RC, Guthrie M, Morton RV, et al. 2003. Tayside-Fife clinical trial of cognitive-behavioural therapy for medication resistant psychotic symptoms. Results to 3-months follow-up. *British Journal of Psychiatry*, 182:303–11.
- Erickson DH, Beiser M, Iacono WG, et al. 1989. The role of social relationship in the course of first-episode and affective psychosis. *American Journal of Psychiatry*, 146:1456–61.
- Fenton WS, Blyler CR, Heinssen RK. 1997. Determinants of medication compliance in schizophrenia: empirical and clinical findings. *Schizophrenia Bulletin*, 23:637–651.
- Ferreri M, Rouillon F, Nuss P. 2000. De quelles informations les patients souffrant de schizophrénie disposent-ils sur leur maladie et leurs traitements? *Encéphale*, 26:30–8.
- Fiszdom JM, Cardenas AS, Bryson GJ, et al. 2005. Predictors of remediation success on a trained memory task. *Journal of Nervous and Mental Disease*, 193:602–8.
- Freudenreich O, Cather C, Evins AE, et al. 2004. Attitudes of schizophrenia outpatients toward psychiatric medications: relationship to clinical variables and insight. *Journal of Clinical Psychiatry*, 65:1372–6.
- Goodman C, Knoll G, Isakov V, et al. 2005. Insight into illness in schizophrenia. *Comprehensive Psychiatry*, 46:284–90.
- Grant C, Addington J, Addington D, et al. 2001. Social functioning in first- and multipisode schizophrenia. *Canadian Journal of Psychiatry*, 46:746–9.
- Hogarty GE, Kornblith SJ, Greenwald D, et al. 1997a. Three year trial of personal therapy among schizophrenic patients living with or independent of family, I: description of study and effects on relapse rates. *American Journal of Psychiatry*, 154:1504–13.
- Hogarty GE, Kornblith SJ, Greenwald D, et al. 1997b. Three-year trials of personal therapy among schizophrenic patients living with or independent of family, I: description of study and effects on relapse rates. *American Journal of Psychiatry*, 154:1504–13.
- Hogarty GE, Flesher S, Ulrich R, et al. 2004. Cognitive enhancement therapy in schizophrenia: Effects of a 2-year randomized trial on cognition and behaviour. *Archives of General Psychiatry*, 61:866–76.
- Hudson TJ, Owen RR, Thrush CR, et al. 2004. A pilot study of barrier to medication adherence in schizophrenia. *Journal of Clinical Psychiatry*, 65:211–16.
- Jeste Sd, Patterson TL, Palmer BW, et al. 2003. Cognitive predictors of medication adherence among middle-aged and older outpatients with schizophrenia. *Schizophrenia Research*, 63:49–58.
- Kane JM. 1985. Compliance issues in outpatients treatment. *J Clin Psychopharm*, 5:22S–27S.
- Kampman O, Lehtinen K. 1999. Compliance in psychoses. *Acta Psychiatrica Scandinavica*, 100:167–75.
- Kampman O, Laippala P, Vaananen J, et al. 2002. Indicators of medication compliance in first-episode psychosis. *Psychiatry Research*, 110:39–48.
- Kemp R, Hayward P, Applewhalthe G, et al. 1996. Compliance therapy in psychotic patients: randomised controlled trial. *British Medical Journal*, 312:345–9.

- Kemp R, Kirov G, Everitt B, et al. 1998. Randomised controlled trial of compliance therapy: 18-month follow-up. *British Journal of Psychiatry*, 172:413–19.
- Kennedy E, Song F, Hunter R, et al. 2000. Risperidone versus typical antipsychotic medication for schizophrenia (Cochrane review). The Cochrane Library 4.
- Kisling W. 1994. Compliance, quality assurance and standards for relapse prevention in schizophrenia. *Acta Psychiatrica Scandinavica*, 89:16–24.
- Lacro JP, Dunn LB, Dolder CR, et al. 2002. Prevalence risk factors for medication nonadherence in patients with schizophrenia: a comprehensive review of recent literature. *Journal of Clinical Psychiatry*, 63:892–909.
- Lewis S, Tarrier N, Haddock G, et al. 2002. Randomised controlled trial of cognitive behavioural therapy in early schizophrenia: acute-phase outcome. *British Journal of Psychiatry*, 43:s91–7.
- Lidz CW, Mulvey EP, Hoge SK, et al. 2000. Sources of coercive behaviours in psychiatric admissions. *Acta Psychiatrica Scandinavica*, 101:73–9.
- Loffler W, Kilian R, Angermeyer MC. 2003. Schizophrenic patients' subjective reasons for compliance and non-compliance with neuroleptic treatment. *Pharmacopsychiatry*, 36:105–12.
- McPherson R, Jerrom B, Hugues A. 1996. Relationship between insight, educational background and cognition in schizophrenia. *British Journal of Psychiatry*, 168:718–22.
- Marder SR, Wirshing WC, Mintz J, et al. 1996. Two-year outcome of social skills training and group psychotherapy for outpatients with schizophrenia. *American Journal of Psychiatry*, 153:1585–92.
- Montoya ID, Herbeck DM, Svikis DS, et al. 2005. Identification and treatment of patients with nicotine problems in routine clinical psychiatry practice. *American Journal of Addictology*, 14:441–51.
- Penadés R, Boget T, Catalan R, et al. 2003. Cognitive mechanisms, psychosocial functioning, and neurocognitive rehabilitation in schizophrenia. *Schizophrenia Research*, 63:219–27.
- Penn DL, Waldheter EJ, Perkins DO, et al. 2005. Psychosocial treatment for first-episode psychosis: A research update. *American Journal of Psychiatry*, 162:220–32.
- Perkins DO. 1990. Adherence to antipsychotic medications. *Journal of Clinical Psychiatry*, 60:25–30.
- Pilling S, Bebbington P, Kuipers E, et al. 2002. Psychological treatment in schizophrenia: II. Meta-analyses of randomized controlled trials of social skills training and cognitive remediation. *Psychological Medicine*, 32:783–91.
- Priebe S, Roeder-Wanner UU, Kaiser W. 2000. Quality of life in first admitted schizophrenia patients: a follow up study. *Psychological Medicine*, 30:225–30.
- Quraishi S, David A. 2000. Depot flupenthixol decanoate for schizophrenia or similar psychotic disorders. The Cochrane Library 4.
- Ratakonda S, Miller CE, Gorman J, et al. 1997. Efficacy of 12-week trial of olanzapine in treatment of refractory schizophrenia or schizoaffective disorders. *Schizophrenia Bulletin*, 29:151.
- Rathod S, Kingdon D, Smith P, et al. 2005. Insight into schizophrenia: the effect of cognitive behavioural therapy on the components of insight and association with sociodemographics data on a previously published randomised trial. *Schizophrenia Research*, 74:211–19.
- Rector NA, Seeman MV, Segal ZV. 2003. Cognitive therapy for schizophrenia: a preliminary randomised controlled trial. *Schizophrenia Research*, 63:1–11.
- Rettenbacher MA, Hofer A, Eder U, et al. 2004. Compliance in schizophrenia: psychopathology, side effects, and patients attitudes toward the illness and medication. *Journal of Clinical Psychiatry*, 65:1211–18.
- Rittmannsberger H, Pachinger T, Keppelmuller P, et al. 2004. Medication adherence among psychotic patients before admission to inpatient treatment. *Psychiatr Serv*, 55:174–9.
- Robinson D, Woerner MG, Alvir JM, et al. 1999. Predictors of relapse following response from a first episode of schizophrenia or schizoaffective disorder. *Archives of General Psychiatry*, 56:241–7.
- Rogers A. 1993. Coercion and “voluntary” admission: an examination of psychiatric patients' views. *Behav Sci Law*, 11:259–67.
- Schwartz RC. 2000. Insight and suicidality in schizophrenia: a replication study. *Journal of Nervous and Mental Disease*, 188:235–7.
- Sensky T, Siddle R, O'Carroll M, et al. 2000. A randomized controlled trial of cognitive behavioural therapy for persistent symptoms in schizophrenia resistant to medication. *Archives of General Psychiatry*, 57:165–72.
- Smith TE, Hull JW, Huppert JD, et al. 2004. Insight and recovery from psychosis in chronic schizophrenia and schizoaffective disorder patients. *Journal of Psychiatric Research*, 38:169–76.
- Spaulding WD, Flemming SK, Reed D, et al. 1999. Cognitive functioning in schizophrenia: implication for psychiatric rehabilitation. *Schizophrenia Bulletin*, 25:275–89.
- Startup M, Jackson MC, Bendix S. 2004. North Wales randomised controlled trial of cognitive behaviour therapy for acute schizophrenia spectrum disorders: outcomes at 6 and 12 months. *Psychological Medicine*, 34:413–22.
- Tarrier N, Yussupoff L, Kinney C, et al. 1998. Randomized controlled trial of intensive cognitive therapy for patients with chronic schizophrenia. *British Medical Journal*, 317:303–7.
- Tarrier N, Lewis S, Haddock G, et al. 2004. Cognitive behavioural therapy in first-episode and early schizophrenia. 18-month follow-up of a randomised controlled trial. *British Journal of Psychiatry*, 184:231–9.
- Trower P, Birchwood M, Maeden A, et al. 2004. Cognitive therapy for command hallucinations: randomised controlled trial. *British Journal of Psychiatry*, 184: 312–20.
- Turkington D, Kingdon D, Turner T. 2002. Effectiveness of a brief cognitive behavioural therapy intervention in the treatment of schizophrenia. *British Journal of Psychiatry*, 180:523–7.
- Turkington D, Kingdon D, Weiden PJ. 2006. Cognitive behaviour therapy for schizophrenia. *American Journal of Psychiatry*, 163:365–73.
- Valmaggia LR, Van Der Gaag M, Tarrier N, et al. 2005. Cognitive behavioural therapy for refractory psychotic symptoms of schizophrenia resistant to atypical antipsychotic medication. *British Journal of Psychiatry*, 186:324–30.
- Van Meer R. 1997. Consensus meeting of the Netherlands about schizophrenia. 6: 17–20.
- Weiden PJ, Dixon L, Frances A. 1991. Neuroleptic non-compliance in schizophrenia, in *Advances in Neuropsychiatry and Psychopharmacology*, vol 1. Edited by Tamminga C, Schulz SC. New York, Raven.
- Wikes T, Reeder C, Corner J, et al. 1999. The effects of neurocognitive remediation on executive processing in patients with schizophrenia. *Schizophrenia Bulletin*, 24:291–308.
- Wirshing DA, Boyd JA, Meng LR, et al. 2002. The effects of novel antipsychotics on glucose and lipid levels. *Journal of Clinical Psychiatry*, 63:856–65.
- Zimmermann G, Favrod J, Trieu VH, et al. 2005. The effect of cognitive behavioural treatment on positive symptoms of schizophrenia spectrum disorders: A meta-analysis. *Schizophrenia Research*, 77:1–9.

