



Interventions to promote psychiatric patients' compliance to mental health treatment: A systematic review

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Background: Non-compliance to treatment remains one of the greatest challenges in mental healthcare services, and how to improve this remains a problem.

Aim: The aim of this study was to critically synthesise the best available evidence from literature regarding interventions to promote psychiatric patients' compliance to mental health treatment. The interventions can be made available for mental health professionals to use in clinical practice.

Method: A systematic review was chosen as a design to identify primary studies that answered the following research question: What is the current evidence on interventions to promote psychiatric patients' compliance to mental health treatment? Selected electronic databases were thoroughly searched. Studies were critically appraised and identified as answering the research questions. Evidence extraction, analysis and synthesis were then conducted by means of evidence class rating and grading of strength prescribed in the American Dietetic Association's manual.

Results: The systematic review identified several interventions that can improve patients' compliance in mental health treatment, for example adherence therapy and motivational interviewing techniques during in-hospital stay.

Conclusions: Conclusions were drawn and recommendations formulated for nursing practice, education and research.

Agtergrond: Geen-samewerking met behandeling bly steeds een van die grootste uitdagings in geestesgesondheidsorgdienste, en genoegsame kennis oor hoe om dit te verbeter, is steeds 'n probleem.

Doelwit: Die doel van hierdie studie was om die beskikbare bewyse vanuit literatuur aangaande intervensies ter bevordering van psigiatriese pasiënte se samewerking met geestesgesondheidsbehandeling krities te sintetiseer. Hierdie intervensies kan aan professionele gesondheidsorgpersoneel beskikbaar gestel word ter bevordering van psigiatriese pasiënte se samewerking met geestesgesondheidsbehandeling.

Metode: 'n Sistematiese literatuuroorsig is gekies as die ontwerp om primêre studies te identifiseer wat die volgende navorsingsvraag beantwoord: Wat is die huidige kennis ten opsigte van intervensies wat psigiatriese pasiënte se samewerking met geestesgesondheidsbehandeling bevorder?

Resultate: Studies is ingesluit vir kritiese gehalte-beoordeling ten opsigte van metodologie, en is uiteindelik geïdentifiseer as bronne van bewyse wat die literatuuroorsigvraag toepaslik beantwoord. Bewysonttrekking, -analise en -sintese is gedoen deur middel van die beoordeling van bewysklas en -gradering van bewyssterkte, soos voorgeskryf in die *American Dietetic Association* se handleiding. Die sistemiese literatuuroorsig het aangedui dat daar heelparty intervensies is wat psigiatriese pasiënte se samewerking met behandeling kan verbeter, byvoorbeeld samewerkingsterapie en motiveringsonderhoudstegnieke.

Gevolgtrekking: Gevolgtrekkings is gemaak en aanbevelings is geformuleer vir die verpleegpraktyk, verpleegonderrig en navorsing in verpleging.

Introduction

There is a widespread problem with psychiatric patients not remaining compliant to their mental health treatment (Patel & David 2007:357). Complete compliance is difficult to achieve with most psychiatric patients, and non-compliance is compounded by the need to take medication over extended periods of time. This article systematically explains the background and rationale to



use of a systematic review, the research objectives, research design and method, steps of the systematic review and conclusion statements regarding interventions to promote psychiatric patients' compliance to mental health treatment. The study was approved by the Post Graduate Committee of the School of Nursing Science of North-West University.

Background to and rationale of the study

Compliance with treatment, or adherence, is a very important healthcare issue (Bolon 2002:1). Both healthcare provider and patients share responsibility for adherence, which is rarely an all-or-none phenomenon (Patel & David 2007:357). According to Bolon (2002:1), in prescribing medication compliance usually means 'the extent to which the patient takes the treatment as prescribed.' The term compliance used in this study is intended to be non-judgemental, and issued as a statement of fact to ensure that both psychiatric patients and healthcare providers take responsibility to promote psychiatric patients' compliance to mental health treatment.

For patients' long-term benefit the ultimate goal is adherence, but when involuntary patients are psychotic and very disabled by illness, the immediate objective is compliance (Vuckovich 2010:78). Compliance to treatment is a major problem, especially for patients repeatedly hospitalised for psychiatric disorders. In Britain it has been estimated that 20% – 50% of the patient population is at least partially non-compliant, and that non-compliance rates can run as high as 70% – 80% in patients diagnosed with schizophrenia and related psychiatric disorders (Nosé *et al.* 2003:197). Although psychiatric medication is effective in reducing relapse and rehospitalisation, 30% – 40% of psychiatric patients in the United States of America relapse within one year after discharge, despite receiving maintenance medication (Kneisl & Trigoboff 2009:377).

According to the literature many factors contribute to non-compliance to treatment, including:

- lack of insight, lack of social support, poor quality of patient-doctor relationship, limited effectiveness and severity of side-effects of psychiatric medication (Montes *et al.* 2010:274);
- forgetting and losing or running out of medication, thinking that it was not needed, not wanting to take the drug, poor awareness of illness and embarrassment at having to take daily medication (Razali 2010:69);
- lack of clear markers of efficacy, and the complexity of treatment regimen (Brondolo & Mas 2001:137); and
- psychiatric patients' easy access to alcohol and other chemicals (Rothbard & Kuno 2000:19; Lamb & Bachrach 2001:1039).

Poor compliance to treatment can create a multitude of problems, such as a longer hospital stay, elevated costs, increased risk of attempted and completed suicide, and poor outcome related to impaired patient functioning (Montes *et al.* 2010:274). Poor compliance to antipsychotic medication increases the risk of relapse, and relapse leads to an

increased potential for assault and dangerous behaviour by psychiatric patients, especially during periods of psychosis (Zygmunt *et al.* 2002:1653). An increase in symptoms and in the potential for assault and dangerous behaviour, and a decrease in quality of life have all been attributed to failure to comply with prescribed treatment (Vuckovich 2010:79).

Non-compliance to treatment amongst psychiatric patients is also considered a problem in South Africa. In South Africa, as part of the deinstitutionalisation movement that escalated during the late 1990s, patients with mental illness were discharged from hospitals as soon as possible or when the acute episode was resolved; they then went for follow-up treatment at their nearest community mental health clinics (Kazadi, Moosa & Jeenah 2008:52). Treatment at these clinics focuses mainly on pharmacotherapy, with few psychosocial support services owing to a lack of human and material resources as well as difficulties in integrating various treatment modalities (Kazadi *et al.* 2008:52). There is therefore a need for a synopsis of more current interventions that can promote psychiatric patients' compliance to mental health treatment.

The above discussion led to the following research question: What is the current evidence on interventions to promote psychiatric patients' compliance to mental health treatment?

Research objective

The objective of the research was to critically synthesise the best available evidence on interventions to promote psychiatric patients' compliance to mental health treatment. Such a synthesis may be considered by mental health professionals for implementation in their context.

In this research 'best available evidence' refers to evidence generated through the most appropriate and valid method (Maltby *et al.* 2010:360). 'Critical synthesis' refers to a summary of best available evidence obtained through a systematic review, bringing the results of individual studies together, appraising the strength of evidence generated in these studies and summarising the evidence (Centre for Reviews and Dissemination 2009:76).

Research method and design

The design in this study was explorative and descriptive, and aimed at exploring and describing the identified best available scientific evidence regarding interventions to promote psychiatric patients' compliance to mental health treatment (Centre for Reviews and Dissemination 2009:48).

Research method

The research method selected for this research was a systematic review of interventions to promote psychiatric patients' compliance to mental health treatment. Systematic reviews are research reviews that combine the evidence of multiple studies regarding a clinical problem to inform clinical practice (Whittemore & Knafelz 2005:547). The research



method is discussed below according to the five steps of systematic review.

Step 1: Formulation of focused review question

The review question guided the systematic review, and for this study was formulated according to the PICOT format (Table 1), namely: Population; Interventions; Comparison; Outcome; and Time frame (adopted from American Dietetic Association [ADA] 2008:6). The review question was: 'What is the current evidence on interventions to promote psychiatric patients' compliance to mental health treatment?'

Step 2: Gathering and classifying the evidence

The next step in conducting a systematic review is to gather all the relevant literature using a structured search strategy. The search process should be as transparent as possible and documented in a way that enables it to be evaluated and reproduced (Centre for Reviews and Dissemination 2009:16).

A comprehensive search was conducted to ensure inclusion of many studies and to minimise selection bias (Akobeng 2005:847). The search strategy was not limited to the English language, since this would introduce language bias (Centre for Reviews and Dissemination 2009:17). Selected electronic databases that were accessible were thoroughly searched; SA-Nexus (National Research Foundation), ProQuest, EBSCOhost Platform, ScienceDirect, Web of Knowledge, Cochrane Library, Sabinet and Google Advanced Scholar were searched for primary studies published from June 2001 to June 2011. Primary studies in any language with an abstract in English were included in the search results. The

following keywords were used in the search: intervention, mental health treatment, psychiatric treatment, compliance, adherence, psychiatric patients, mental healthcare user, and combinations thereof. Scanning reference lists of papers identified by the database searches allowed further studies of interest to be identified. The search strategy was conducted under the supervision of experienced researchers who are familiar with conducting systematic reviews.

Studies were selected using inclusion and exclusion criteria (Table 2), determined to make certain that the boundaries of the review question were clearly defined. The aim of the search was to include all studies relevant to the research question.

Articles were retrieved through the databases, using the keywords. Google and library loans were used to obtain all possibly relevant articles. An experienced librarian at the North-West University assisted in a specific search strategy in Nexus (a national electronic database).

The study selection was first conducted by screening titles and abstracts against the inclusion criteria to identify potentially relevant papers and to check for availability of evidence. The studies that appeared to meet the inclusion criteria were selected after reading the abstract. This was followed by a screening of the full papers identified as possibly relevant in the initial screen as described by Centre for Reviews and Dissemination (2009:13). Accurate record-keeping was maintained throughout the process for audit purposes to enhance rigour. The total number of studies included for critical appraisal was 16. Studies identified, excluded and included are tabulated in Figure 1.

TABLE 1: Application of PICOT format.

Population	Intervention	Comparison	Outcome	Time frame
Psychiatric patients according to the full text revision of the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR).	Different interventions or combination of interventions to promote compliance to mental health treatment.	Not applicable.	Improved compliance to mental health treatment.	Within a year after discharge.

TABLE 2: Inclusion and exclusion criteria of the study.

Inclusion criteria	Exclusion criteria	Rationale
Population: Studies related to psychiatric patients and compliance to mental health treatment.	Primary studies of patients diagnosed only with a medical condition, and not with a psychiatric condition.	To direct review and focus to the review question.
Setting: Healthcare institutions, outpatient departments and community healthcare centres, public settings.	Private settings.	To include all possible settings where psychiatric patients might receive mental health treatment.
Condition of the patients: Psychiatric conditions.	Patients with medical conditions.	To direct the review question and focus to the study.
Outcome: Compliance to mental health treatment as evidenced by improved compliance to mental health treatment; prevented relapse; and reduced rehospitalisation.		To direct the review question and focus to the study.
Study design: Primary studies, including RCTs, non-randomised intervention studies, cross-sectional and case reports and systematic reviews.	Studies that do not address research questions. Studies where the exploration of interventions did not focus on compliance to mental health treatment.	To identify the most appropriate recent research to answer the review question.
Publications included: Conference abstracts/grey literature – international and local theses, dissertations and discussion editorials.	Non-research papers, for example discussion editorials.	
Time frame: Studies published from January 2001 to December 2011.	Studies published before 2001.	To identify most current published studies.



Step 3: Performing the critical appraisal

Critical appraisal is the process of carefully and systematically examining research to judge its trustworthiness, value and relevance in a particular context (Burls 2009:1). The purpose of the critical appraisal is to determine the validity of the research, to interpret the results and evaluate applicability of the research in clinical practise, in public health and in future research (Abalos *et al.* 2001:15).

The first step in critical appraisal of a review is to establish its methodological quality to determine the validity of the result. In this study primary studies selected for critical appraisal were evaluated for methodology and quality using standard checklists from the Critical Appraisal Skills Program (CASP) and John Hopkins Nursing Evidence-Based Practice (JHNEBP) research evidence appraisal tool (Newhouse *et al.* 2007:206). The CASP tool was used for all studies of randomised control trials (RCT) and JHNEBP for non-experimental and quasi-experimental studies. The scoring was adapted by the researcher for inclusion and exclusion purposes after appraisal of both the CASP and JHNEBP instruments.

Individual studies were identified with symbols used for quality rating, as shown in the quality criteria checklist of primary studies. The study was rated either positive (+), indicating that the report clearly addressed issues of inclusion or exclusion, bias, generalisability, and data collection and analysis; neutral (\emptyset), indicating that the report was neither exceptionally strong nor exceptionally weak; or negative (-), indicating that these issues were not adequately addressed.

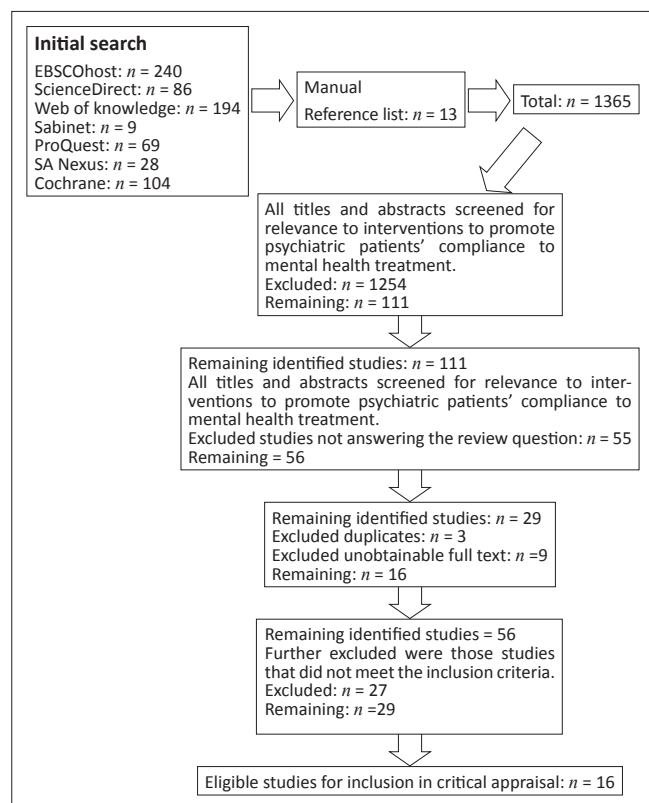


FIGURE 1: Realisation of search strategy.

The 16 studies included were appraised for reliability, validity and credibility by the appropriate criteria of the CASP to determine whether the findings could be considered as good-, medium- or low-quality evidence (CASP 2006:17). The studies included in this review were from medium to high quality and obtained a quality rating between 5/10 and $\geq 8/10$. The studies were appraised on the basis of criteria as recommended by the ADA *Evidence analysis manual* (ADA 2008:42) using a quality checklist for primary studies. A second reviewer independently appraised the selected studies for methodological quality and for inclusion in or exclusion from the systematic review. The checklists were completed and filed for audit purposes.

Sixteen quantitative studies were included for critical appraisal: 8 RCTs, 5 non-experimental studies and three quasi-experimental studies. The total number excluded was two non-experimental studies because of poor quality. After critical appraisal 14 articles were included for data extraction.

Step 4: Evidence – findings and summarising

A summary of the evidence presents the cumulative information, data and quality of evidence for the most important outcomes; it also contains discussions on the data extraction and summary, data analysis strategy, and a summary of the findings.

Data extraction elements (Table 3) for each study involved the focus of the study, the main findings, and findings that were relevant to this systematic review. All data extracted were graded on the strength of their evidence supporting the conclusions or recommendations according to the ADA *Evidence analysis manual* (ADA 2008:62).

Primary studies of RCTs, non-experimental and quasi-experimental studies were included in this review. Where the primary studies use different designs, populations studied, interventions and comparisons used or outcomes measured, it is more appropriate to report the findings descriptively according to themes (Garg, Hackam & Tonelli 2008:253). Therefore thematic analysis was used as an appropriate analysis strategy to identify major or recurrent themes in the findings, followed by a summary of findings under these thematic headings (Dixon-Woods *et al.* 2006:27). The findings regarding each theme were combined and summarised; thereafter conclusion statements were made.

Step 5: Drafting findings, limitations and recommendations

This step and the findings, limitations and recommendations are outlined in the sections that follow.

Findings

In order to answer the review question a summary of the findings under thematic headings referring to psychiatric conditions (schizophrenic patients, psychiatric patients, depressed patients and seriously mentally ill patients) treated in specific settings, both public and private (hospital, community, clinics or outpatients), are provided.



TABLE 3: Data extraction (N14).

Number	Reference	Focus of the study	Bottom-line finding	Findings relevant to this study and evidence grading
Randomised control trials = 8				
1	Valenstein <i>et al.</i> (2011:727–736). Using a pharmacy-based intervention to improve antipsychotic adherence amongst patients with serious mental illness.	To conduct an RCT to examine effectiveness of a pharmacy-based intervention, Meds-Help, in improving antipsychotic adherence amongst patients with severe mental illness.	Effects of intervention on adherence: 34% of patients on pharmacy-based intervention (Meds-Help) and 18% of patients on usual care met the criteria for adherence.	A low-complexity pharmacy-based intervention improves antipsychotic compliance amongst patients with serious mental illness, in a poor patient population in which poor compliance is common. Evidence grading: Grade I.
2	Sirey <i>et al.</i> (2010:554–562). Improving antidepressant adherence and depression outcomes in primary care: TIP.	To test the impact of a novel psychosocial intervention to improve antidepressant adherence and depression outcomes amongst older adults prescribed pharmacotherapy by their primary care physician.	TIP is useful in improving early compliance to antidepressant therapy provided in primary care settings. The patients also showed a greater decrease in depressive symptoms.	Patients in TIP were significantly more compliant to treatment at all points. Evidence grading: Grade II.
3	Guo <i>et al.</i> (2010:895–904). Effect of antipsychotic medication alone versus combined with psychosocial intervention outcomes of early-stage schizophrenia.	To evaluate effectiveness of antipsychotic medication alone versus combined with psychosocial intervention on outcomes of early-stage of schizophrenia.	The combined treatment improves medication adherence, risk of relapse, and hospital admission, insight, quality of life and social/occupational functioning. There is a lower rate of medication discontinuation.	Antipsychotic medication combined with psychosocial interventions is able to improve psychiatric patients' compliance to mental health treatment in the early stage of schizophrenia. Evidence grading: Grade I.
4	Maneesakorn <i>et al.</i> (2006:1302–1312). RCT of AT for people with schizophrenia in Chiang Mai, Thailand.	To evaluate the effectiveness of AT with a brief intervention based on therapy and motivational interviewing techniques in a sample of people with schizophrenia in Thailand. AT is explained as a brief cognitive behavioural approach that has evolved from compliance therapy.	Patients who received AT significantly improved in overall psychotic symptoms, attitude towards and satisfaction with medication compared to treatment as usual, but no significant difference was found in general functioning or side-effects compared to treatment as usual.	AT improved compliance to treatment in the hospital setting. Evidence grading: Grade II.
5	Gray <i>et al.</i> (2004:157–162). Effects of a medication management training package for nurses on clinical outcomes for patients with schizophrenia.	To assess the effectiveness of a medication management training package for CMHNS in improving compliance and clinical outcomes in patients with schizophrenia.	Medication management training for CMHNS is effective in improving clinical outcomes in people with schizophrenia. The primary efficacy measure (PANSS total) showed statistically significant improvements compared to treatment as usual. Significant improvement was observed in patients' attitudes toward treatment and compliance compared to treatment as usual. Training equips CMHNS with the skills they need to be effective in delivering compliance therapy.	Medication management training for CMHNS was found to be a significant benefit to nurses and improved psychiatric patients' compliance to mental health treatment in the community. Evidence grading: Grade II.
6	Gray <i>et al.</i> (2006:508–514). AT for people with schizophrenia.	To compare effectiveness of AT with a health education control intervention (which allows the therapies time and relationship), in improving health-related quality of life for people with schizophrenia, compared with health education.	AT had no clear benefit in terms of treatment adherence, psychopathology or quality of life when compared with health education, for people with general chronic schizophrenia, in general adult mental health services.	AT does not significantly improve compliance to treatment for people with schizophrenia in in-patient and community settings. Evidence grading: Grade I.
7	Brook <i>et al.</i> (2005:487–489). A pharmacy-based coaching programme to improve adherence to antidepressant treatment amongst primary care patients.	To evaluate the effect of a pharmacy based coaching approach together with a take-home videotape in improving adherence to antidepressant treatment amongst depressed primary care patients in the Netherlands.	A brief contact by pharmacists together with an information videotape improved neither adherence to antidepressant regimens nor depressive symptoms.	A pharmacy-based coaching programme does not significantly improve compliance to mental health treatment. Evidence grading: Grade I.
8	O'Donnel <i>et al.</i> (2003:834–840). Compliance therapy: an RCT in schizophrenia.	To evaluate efficacy of compliance therapy for improving compliance to prescribed drug treatment amongst patients with schizophrenia. Compliance therapy is explained as a cognitive behaviour intervention with techniques adapted from motivational interviewing as well as psycho-education.	Compliance therapy did not have any advantage over non-specific therapy in improving compliance at one year, or in any of the secondary outcome measures – symptomatology, attitude to treatment, insight, global assessment of functioning, and quality of life.	Compliance therapy did not significantly improve compliance to treatment for people with schizophrenia in in-patient settings. Evidence grading: Grade I.
Non-experimental = 3				
1	Chang <i>et al.</i> (2010:16–19). Treatment effectiveness and adherence in patients with schizophrenia treated with Risperidone long-acting injection.	To evaluate factors related to effectiveness and adherence to treatment in patients with schizophrenia treated with Risperidone long-acting injection (RLAI).	Efficacy of RLAI was affected most by provision of home care and history of illicit drugs. Patients who received home care services continued treatment on average 15.26 days longer than patients who did not. Patients with a history of illicit drug use continued treatment for 17.3 fewer days on average than patients with no such history.	RLAI with provision of home care improves psychiatric patients' compliance to mental health treatment, especially when medication is changed and/or discontinued. Evidence grading: Grade II.
2	Gutierrez-Casarez <i>et al.</i> (2010:327–337). Adherence to treatment and therapeutic strategies in schizophrenic patients: the ADHERE study	To assess the degree of compliance and adherence to treatment during follow-up after a new therapeutic strategy had been identified.	After three months' visits 84% of patients had changed their treatment, and in these the compliance rate of those on injectable medication was 94% versus 87% of patients taking oral medication.	Injectable medication increases psychiatric patients' compliance to mental health treatment more than oral medication in outpatients with schizophrenia. Evidence grading: Grade II.
3	Ruoff (2005:846–851). A method that dramatically improves patient adherence to depression treatment.	To increase patient adherence to prescribed regimen for depression or depressive symptoms.	40 of the 61 patients (66%) adhered to prescribed daily drug therapy for depression for at least nine months – double the 33% adherence rate described in clinical literature.	Use of a flowsheet, coupled with patient education and diligent follow-up, improved compliance to mental health treatment. Evidence grading: Grade III.

RCTs (*n* = 8).

TIP, treatment initiation and participation; AT, Adherence therapy; CMHNS, community mental health nurses; RLAI, Risperidone long-acting injection; RCTs, randomised control trials.

Table 3 continues on the next page →



TABLE 3 (Continues...): Data extraction (N14).

Number	Reference	Focus of the study	Bottom-line finding	Findings relevant to this study and evidence grading
Quasi-experimental = 3				
1	Patel <i>et al.</i> (2010:269–274). An attempt to improve antipsychotic medication adherence by feedback of medication possession ratio score to prescribers.	To improve treatment adherence by implementing an early alert system to notify caregivers when patients fail to refill essential prescriptions in a timely manner, and educational resources for providers on best practices.	The intervention group had a significantly greater increase in MPR scores between pre-intervention and intervention. After the conclusion of treatment AT programme intervention the MPR score was decreased somewhat, but was still higher than during the pre-intervention period.	Treatment AT programmes improved compliance to mental health treatment. Evidence grading: Grade II.
2	Dolder <i>et al.</i> (2002:103–108). Antipsychotic medication adherence: is there a difference between typical and atypical agents?	To examine adherence to medication regimens with typical versus atypical antipsychotics amongst Department of Veterans Affairs outpatients with psychotic disorder.	Patients with prescriptions for atypical antipsychotics had a significantly higher adherence rate at six months. At 12 months patients receiving atypical agents had a higher adherence rate.	In this study the outpatients with prescriptions for atypical antipsychotics had greater medication adherence compared to patients with prescriptions for typical agents. Evidence grading: Grade II.
3	Gervasoni <i>et al.</i> (2010:265–267). Early telephone intervention for psychiatric outpatients starting antidepressant treatment.	To examine the effectiveness of early telephone intervention for psychiatric outpatients starting antidepressant treatments in improving compliance to treatment.	The intervention proved to have no significant effect on treatment compliance attrition rate, exclusion rate for adverse events or improvement of depression severity.	A brief high-intensity structured telephone intervention does not significantly improve compliance to treatment for patients starting antidepressant medication treated in psychiatric outpatient clinics. Evidence grading: Grade II.

RCTs ($n = 8$).

TIP, treatment initiation and participation; AT, Adherence therapy; CMHNS, community mental health nurses; RLAI, Risperidone long-acting injection; RCTs, randomised control trials.

Finding 1: Adherence therapy and motivational interviewing are effective in promoting compliance to treatment in hospital settings for schizophrenic patients

Findings indicated that Adherence therapy (AT) and motivational interviewing can improve schizophrenic patients' compliance to treatment in hospital settings. AT is a brief cognitive behavioural approach that evolved from compliance therapy. It is a collaborative, flexible, structured way of working and draws on cognitive behavioural therapy and motivational interviewing techniques.

AT is a detailed, phased approach to promoting treatment compliance in patients with schizophrenia (Maneesakorn *et al.* 2006:1302). The key therapeutic techniques used are exchanging information, developing discrepancy and effectively dealing with resistance to discussing psychiatric medication and treatment. AT strategies emphasise patient engagement and enable patients to make joint decisions about medication in cooperation with health professionals (Maneesakorn *et al.* 2006:1302). The findings of this study indicated that there was statistical improvement overall, including in psychotic symptoms, attitude towards medication, and satisfaction with medication in schizophrenic patients in the hospital setting. It is therefore important that healthcare professionals receive training on AT and motivational interviewing and put them into practice in hospital settings to promote compliance to mental health treatment.

Finding 2: Meds-Help and treatment Adherence therapy are effective in promoting compliance to treatment in community settings for seriously mentally ill patients

Valenstein *et al.* (2011:727–736) showed that a low-complexity pharmacy-based intervention (Meds-Help)

improves antipsychotic compliance amongst patients with serious mental illness who live in the community and receive treatment at a clinic. The Meds-Help consisted of unit-of-use packaging that included all patients' medications; a medication and packaging education session; refill reminders mailed two weeks before scheduled refill dates, and notification of clinicians if patients failed to refill their treatment within 7–10 days. Meds-Help staff serve as contacts for patient questions regarding pharmacy services or doctors' prescriptions. Pharmacy technicians, with oversight by pharmacists, completed many of these intervention components. The medication education was done by pharmacists, usually in person, but occasionally by telephone. This intervention can therefore be implemented for outpatients (Valenstein *et al.* 2011:727–736).

A treatment AT programme as an intervention improved compliance to treatment for patients with severe and persistent mental illness in outpatient departments at clinics. The programmes consist of community healthcare professionals trained in monitoring patients receiving treatment at community mental health centres (CMHCs). The programme uses alert systems at CMHCs 2-weekly when patients fail to refill their treatment. The medication possession ratio (MPR) scores were also monitored. Case managers and/or supervisors from the treatment AT programme at CMHCs participated in a 4-hour patients' adherence educational training seminar. Physicians and psychiatrists working at the centre are orientated regarding the treatment AT programme. Findings indicated that there was a statistically significant association between the treatment AT interventions and MPR score, and an improvement in antipsychotic medication compliance. Therefore training on the treatment AT programme should be encouraged for community mental health professionals. The above intervention can be implemented for outpatients in community healthcare centres, as it has been proven to



promote psychiatric patients' compliance to mental health treatment (Patel *et al.* 2010:269–274).

Finding 3: Treatment initiation and participation programme and use of a depression management flowsheet are effective in improving compliance to treatment in clinic settings for depressed patients

Findings indicated that the treatment initiation and participation (TIP) programme is useful in improving early compliance to antidepressant therapy provided at clinics and primary care settings. Patients also showed a decrease in depressive symptoms. The TIP intervention format is three 30-minute individual meetings with the patient during the first six weeks of pharmacotherapy, followed by two follow-up telephone calls at 8 and 10 weeks. The three sessions allow the TIP counsellor and older adult participant to establish an alliance and work together on barriers to compliance (e.g. patient perceptions of stigma, illness severity and concern about treatment). TIP intervention uses a number of techniques, such as motivational interviewing, problem solving tasks and psycho-education. The TIP intervention has proven to be effective in treating adult depressive patients, and can be implemented for adults receiving treatment at urban clinics (Sirey, Bruce & Kales 2010:554–562).

Use of a depression management flowsheet coupled with patient education, a checklist for co-morbid disorders, a medical reference guide, a major depression guide and diligent follow-up, dramatically improved rate of treatment compliance amongst depressed patients at clinics. Patients were asked to complete a Patient Health Questionnaire (PHQ-9s) and medication side-effects were assessed two-weekly. They were also educated by the attending physician during their initial appointment, and were given information to explain the disease and the necessity of compliance to the prescribed regimen for a period of nine months. A flowsheet containing information relative to office calls, follow-up PHQ-9s and other summaries of medication, co-morbidities and treatment regimens was inserted into their folders. During their visits physicians stressed the need for continuing medication. A patient who did not return for a follow-up appointment after six months, as indicated by systematic chart review, was contacted by telephone by a registered nurse. This study indicated that the above intervention significantly improved compliance to mental health treatment by depressed patients. It is therefore important that the above intervention be conducted as it improves compliance to mental health treatment (Ruoff 2005:846–851).

The findings of a study by Gervasoni *et al.* (2010:265) proved that a brief, high-intensity structured telephone intervention alone does not improve compliance to treatment with antidepressant medication amongst patients treated at clinics.

Finding 4: Medication management training for community mental health nurses and antipsychotic medication combined with psychosocial interventions are effective in improving compliance to treatment used in outpatient settings for schizophrenic patients

Medication management training for community mental health nurses (CMHNs) is effective in improving schizophrenic patients' compliance to mental health treatments as it leads to improvement in overall psychopathology, attitude towards antipsychotic treatment and compliance. The training focused on teaching CMHNs the compliance therapy approach detailed in the treatment manual. A multidisciplinary team that included clinical nurse specialists, psychologists and psychiatric pharmacists provided the training. The findings of this study demonstrated that medication management training for CMHNs is effective in improving clinical outcomes in people with schizophrenia with a significant improvement in clinical skills. The training also equips nurses with the clinical skills and knowledge needed to improve psychiatric patients' compliance to mental health treatment. It is therefore important that CMHNs attend medication management training to promote psychiatric patients' compliance to mental health treatment in the community (Gray *et al.* 2004:157–162).

In a study by Guo *et al.* (2010) it was found that antipsychotic medications combined with psychosocial intervention have proven effective in improving compliance to mental health treatment amongst patients with early-stage schizophrenia. Psychosocial interventions have also lowered the rate of treatment discontinuation or change, the risk of relapse and hospitalisation, and improved insight, quality of life, and social/occupational functioning. The psychosocial intervention strictly followed a detailed treatment manual and included four evidence-based practices: psycho-education, family intervention, skills training, and cognitive behaviour therapy. The findings indicated that these practices proved effective in treating patients with schizophrenia, and can be implemented at clinics (Guo *et al.* 2010:895–904).

Finding 5: Home care support and use of long-acting injectable treatments, and atypical antipsychotic treatment are effective in promoting compliance to treatment

Long-acting injections and the provision of home care may lead to continued treatment. These home care services include psychosocial interventions delivered by a community-based multidisciplinary team, linking patients to community resources. Home care visitors offer active services, such as encouraging the patients to seek medical advice and to keep in contact with their physicians. It is therefore important to make certain that patients receiving long-acting injection interventions must also home care to improve their compliance to mental health treatment (Chang, Tzen & Lung 2010:16–19).



Furthermore, psychotic outpatients with prescriptions for atypical antipsychotic treatment (risperidone, olanzapine and quetiapine) are more compliant to mental health treatment compared to patients with prescriptions for typical agents (haloperidol and perphenazine). Using interventions of atypical antipsychotic treatment has been proven to reduce the side-effects of antipsychotics, and can be used as it improves psychiatric patients' compliance to mental health treatment (Dolder *et al.* 2002:103–108).

Limitations of the study

The heterogeneity of the studies and interventions outcome measures prevented the possibility of comparing results between the studies directly by means of meta-analysis. Different interventions were identified, with more studies that looked at effective interventions for schizophrenia. These cannot be generalised to other psychiatric conditions. The systematic review was conducted on studies presenting with high-quality ratings – a mixture of class A and C evidence – and therefore generalisation is limited to specific settings and not all findings can be generalised to the wider population. In this review blinding was not used during the search or critical appraisal step, as there was no conflict of interest. This could be a limitation with regard to validity of appraisal.

Recommendations

The findings of the systematic review help to provide recommendations for nursing practice, nursing education and nursing research regarding best available evidence on interventions to promote psychiatric patients' compliance to mental health treatment.

Recommendations for nursing practice

Information on interventions to promote psychiatric patients' compliance to mental health treatment should be made available in nursing practice to improve patients' compliance to treatment in different healthcare settings. Integrating comprehensive therapy (psycho-education, family intervention, skills training, and cognitive therapy) with medication treatment in the early stage of schizophrenia is critically important to improve compliance to mental health treatment and should be implemented in outpatient settings.

CMHNs should be trained on medication management to equip them with skills to be effective in delivering compliance therapy and promoting psychiatric patients' compliance to mental health treatment in the community.

Schizophrenic patients receiving long-acting injectable treatment intervention must also have provision of home care to improve their compliance to mental health treatment.

Long-acting injectable antipsychotic treatment has been proven to improve compliance to mental health treatment more than oral medication in outpatients with schizophrenia;

therefore long-acting injectables can be used more than oral medication for outpatients.

Interventions with atypical antipsychotic treatment have been proven to reduce the side-effects of antipsychotics and can be used since they improve psychiatric patients' compliance to mental health treatment.

Recommendations for nursing education

The current available evidence on interventions that promote psychiatric patients' compliance to treatment can be included in nursing curriculums to inform, educate and equip nurses with special skills to safely and effectively deliver nursing care in community healthcare centres and hospitals.

Recommendations for research

Further research is needed on interventions to promote psychiatric patients' compliance to mental health treatment, as most of the research identified was only recommended for specific settings and have small samples. Suggestions for further research include the following:

- Further research is recommended on the effectiveness of the interventions identified through this systematic review in the South African context.
- Further research is recommended on effectiveness of compliance therapy to improve psychiatric patients' compliance to treatment in all settings.
- More research is needed on the effectiveness of treatment initiation and participative programmes in different settings.
- Further research is needed on the use of atypical antipsychotic treatment to improve psychiatric patients' compliance to mental health treatment compared to typical antipsychotic medication.
- Further research is needed on use of AT to improve compliance to mental health treatment in community settings.
- Further research is needed on a brief, high-intensity, structured telephone intervention to improve compliance to treatment for patients on antidepressant medication treated in psychiatric outpatient settings.
- Further research is needed on a pharmacy-based coaching programme to improve adherence to antidepressant treatment amongst primary care patients.
- Compliance therapy alone as an intervention to improve compliance to psychiatric patients' treatment has proven not to be effective; therefore further research is needed on this topic.

Conclusion

The objective of the review was to critically synthesise the best available evidence on interventions to promote psychiatric patients' compliance to mental health treatment. This objective was reached through conducting a systematic review. The findings of the systematic review were then



used to draw conclusions and formulate recommendations for nursing practice, nursing education and research.

The researcher drew her conclusion from evidence gathered from findings of the studies to answer the research question. The conclusions are summaries or interpretations of the recurrent themes, for example, interventions, target group and settings, and are outlined below.

Concluding statement 1: AT and motivational interviewing techniques have the potential to improve compliance to treatment and overall psychotic symptoms in schizophrenic patients. Health professionals, particularly nurses who spend more time with the patients, should be able to deliver such interventions in the hospital setting.

Concluding statement 2: A treatment AT programme, with healthcare professionals trained on monitoring patients' compliance to treatment, can lead to improvement in compliance of patients with severe mental illness. Therefore training on treatment AT should be done for healthcare professionals working at the community healthcare centres to monitor patients who fail to come for their treatment, and improve patients' compliance to mental health treatment. A pharmacy-based intervention called Meds-Help has been proven to improve compliance to mental health treatment amongst severely mentally ill patients in outpatient settings. Therefore pharmacy-based interventions should be used to improve psychiatric patients' compliance to mental health treatment.

Concluding statement 3: The TIP programme has the ability to improve early compliance to antidepressant therapy provided at clinics and in primary care settings. The TIP model offers a framework for exploring and improving adherence in different settings where depression in older adults is being treated.

The use of a depression management flowsheet coupled with patient education, a checklist for co-morbid disorders, a medical reference guide, a major depression guide and diligent follow-up can dramatically improve the rate of treatment compliance for depressed patients at the clinic. The use of PHQ-9s is useful in assessing medication side effects. Compliance to mental health treatment can also be improved by health education given by pharmacists giving patients information material to explain the disease and the necessity of compliance to the prescribed regimen. The registered nurse can also do follow-up telephonically for patients who failed to keep their appointment to improve compliance to treatment.

Concluding statement 4: Training in medication management for CMHNs has proved to improve compliance to mental health treatment, clinical outcome and attitude to treatment of patients living in the community. Therefore, a medication management training manual package can be made available for CMHNs so that they can be trained and equipped with skills that can help to improve psychiatric

patients' compliance to mental health treatment in the community.

Furthermore, medication combined with psychosocial interventions has the ability to improve compliance to mental health treatment.

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Competing interests

The authors declare that they have no financial or personal relationship(s) with other people or organisations that could have potentially prevented them from executing and publishing unbiased research.

Authors' contributions

M.B.S. (Witrand Hospital, Potchefstroom) conducted the research under the supervision of E.dP. and M.P.K. (both School of Nursing Science, North-West University, Potchefstroom Campus) and drafted the manuscript. E.dP. finalised the manuscript, and M.P.K. acted as critical reader.

References

- Abalos, E., Carroli, G., Mackey, M.E. & Bergel, E., 2001, *Critical appraisal of systematic reviews*, viewed 20 September 2011 from <http://apps.who.int/rhl/Critical%20appraisal%20of%20systematic%20reviews.pdf>
- Akobeng, A.K., 2005, 'Understanding systematic reviews and meta-analysis', *Archives of Disease in Childhood* 90(8), 845–848. <http://dx.doi.org/10.1136/adc.2004.058230>
- American Dietetic Association, 2008, *Evidence analysis manual: Steps in the ADA evidence analysis process*, Scientific Affairs and Research, American Dietetic Association, Chicago.
- Bolon, R., 2002, *Managing compliance*, viewed 20 September 2011, from <http://www.psychiatrytime.com/display/article/10168/48206>
- Brondolo, E. & Mas, F., 2001, 'Cognitive-behavioural strategies for improving medication adherence in patients with bi-polar disorder', *Cognitive and Behavioural Practice* 8(2), 137–147. [http://dx.doi.org/10.1016/S1077-7229\(01\)80019-5](http://dx.doi.org/10.1016/S1077-7229(01)80019-5)
- Brook, O.H., Van Hout, H., Stalman, W., Nieuwenhuys, H., Bakker, B., Heerdink, E. & De Haan, M., 2005, 'A pharmacy-based coaching program to improve adherence to antidepressant treatment among primary care patients', *American Psychiatric Services* 56(4), 487–489. <http://dx.doi.org/10.1176/appi.ps.56.4.487>
- Burls, A., 2009, *What is critical appraisal? Evidence based medicine*, viewed 11 January 2012, from http://www.medicine.ox.ac.uk/bandolier/painres/download/whatis/what_is_critical_appraisal
- Centre for Reviews and Dissemination, 2009, *Systematic reviews: CRD's guidance for undertaking reviews in health care*, Centre for Reviews and Dissemination, York.
- Chang, C., Tzen, D. & Lung, F., 2010, 'Treatment effectiveness and adherence in patients with schizophrenia treated with risperidone long-acting injection', *Psychiatry Research* 180(1), 16–19. <http://dx.doi.org/10.1016/j.psychres.2009.11.005>
- Critical Appraisal Skills Programme, 2006, *10 Questions to help you make sense of evidence*, Public Health Resource Unit, England, viewed 11 January 2012, from <http://calder.med.miami.edu/portals/ebfiles/UM%20CASP%20Systematic%20Reviews%20Assessment%20Tool.pdf>
- Dixon-Woods, M., Bonas, S., Botha, A., Jones, D.R., Miller, T., Sutton, A.J., Shaw, R.L., Smith, J.A. & Young, B., 2006, 'How can systematic review incorporate qualitative research? A critical perspective', *Qualitative Research* 6(1), 27–44. <http://dx.doi.org/10.1177/1468794106058867>
- Dolder, C.R., Lacro, J.P., Dunn, L.B. & Jeste, D.V., 2002, 'Antipsychotic medication adherence: Is there a difference between typical and atypical agents?', *American Journal of Psychiatry* 159(1), 103–108. <http://dx.doi.org/10.1176/appi.ajp.159.1.103>
- Fortinash, K.M. & Holoday-Worret, P.A., 2000, *Psychiatric Mental Health Nursing*, 2nd edn., Mosby, St Louis.



- Garg, A.X., Hackam, D. & Tonelli, M., 2008, 'Systematic review and meta-analysis: When one study is not just enough', *Clinical Journal of the American Society of Nephrology* 3(1), 253–260. <http://dx.doi.org/10.2215/CJN.01430307>
- Gervasoni, N., Legendre-Simon, P., Aubry, J., Gex-Fabry, M., Bertschy, G. & Bondolfi, G., 2010, 'Early telephone intervention for psychiatric outpatients starting antidepressant treatment', *Nordic Journal of Psychiatry* 64(4), 265–267. <http://dx.doi.org/10.3109/08039480903528641>
- Gray, R., Wykes, T., Edmonds, M., Leeses, M. & Gournay, K., 2004, 'Effect of a medication management training package for nurses on clinical outcomes for patients with schizophrenia', *British Journal of Psychiatry* 185(2), 157–162. <http://dx.doi.org/10.1192/bjp.185.2.157>
- Guo, X., Zhai, J., Liu, Z., Fang, M., Wang, B., Chuanyue, W *et al.*, 2010, 'Effect of antipsychotic medication alone vs combined with psychosocial intervention on outcomes of early-stage schizophrenia', *Archives of General Psychiatry* 67(9), 895–904.
- Gutiérrez-Casares, J.R., Cañas, F., Rodríguez-Morales, A., Hidalgo-Borrajó, R. & Alonso-Escolano, D., 2010, 'Adherence to treatment and therapeutic strategies in schizophrenic patients: the ADHERE study', *CNS Spectrums* 15(5), 327–337.
- Kazadi, N.J.B., Moosa M.Y.H. & Jeenah, F.Y., 2008, 'Factors associated with relapse in schizophrenia', *South African Journal of Psychiatry* 14(2), 52–62.
- Khan, K., Kunz, R., Kleijnen, J. & Antes, G., 2003, *Systematic reviews to support evidence-based medicine: How to review and apply of findings healthcare research*, RCR Press, London.
- Kneisl, C.R. & Trigoboff, E., 2009, *Contemporary Psychiatric-Mental Health Nursing*, 2nd edn., Pearson, New Jersey.
- Lamb, H.R. & Bachrach, L.L., 2001, *Some perspectives on deinstitutionalization*, viewed 11 February 2010, from <http://www.psychiatricservices.psychiatryonline.org/cgi/content/full/52/8/1039>
- Maltby, J., Williams, G., McGarry, J. & Day, L., 2010, *Research methods for nursing and healthcare*, Pearson, London.
- Maneesakorn, S., Robson, D., Gournay, K. & Gray, R., 2006, 'An RCT of adherence therapy for people with schizophrenia in Chiang Mai, Thailand', *Journal of Clinical Nursing* 16(7), 1302–1312. <http://dx.doi.org/10.1111/j.1365-2702.2007.01786.x>
- Montes, J.M., Maurino, J., Diez, T. & Saiz-Ruiz, J., 2010, 'Telephone-based nursing strategy to improve adherence to antipsychotic treatment in schizophrenia: A controlled trial', *International Journal of Psychiatry in Clinical Practice* 14(4), 274–281. <http://dx.doi.org/10.3109/13651501.2010.505343>
- Newhouse, R.P., Dearholt, S.L., Poe, S.S., Pugh, L.C. & White, K.M., 2007, *John Hopkins evidence-based Model and guidelines*, Sigma Theta Tau International, Indianapolis.
- Nosé, M., Barbui, C., Gray, R. & Tansella, M., 2003, 'Clinical interventions for treatment non-adherence in psychosis: Meta-analysis', *British Journal of Psychiatry* 183(3), 197–206. <http://dx.doi.org/10.1192/bjp.183.3.197>
- O'Donnel, C., Donohoe, G., Sharkey, L., Owens, N., Migone, M., Harries, R., Kinsella, A., Larkin, C. & O'Callaghan, E., 2003, 'Compliance therapy: A randomised controlled trial in schizophrenia', *British Medical Journal* 327(7419), 834–840. <http://dx.doi.org/10.1136/bmj.327.7419.834>
- Patel, U.B., Ni, Q., Clayton, C., Lam, P. & Parks, J., 2010, 'An attempt to improve antipsychotic medication adherence by feedback of medication possession ratio scores to prescribers', *Population Health Management* 13(5), 269–274. <http://dx.doi.org/10.1089/pop.2009.0053>
- Patel, X.M. & David, A.S., 2007, 'Medication adherence: Predictive factors and enhancement strategies', *Psychiatry* 6(9), 357–361. <http://dx.doi.org/10.1016/j.mppsy.2007.06.003>
- Razali, S.M., 2010, 'Prevention of relapse and interventions for enhancing medication adherence in schizophrenia: An East Asian perspective', *Asia-Pacific Psychiatry* 2(2), 68–76. <http://dx.doi.org/10.1111/j.1758-5872.2010.00067.x>
- Rothbard, A.B. & Kuno, E., 2000, 'The success of deinstitutionalization: Empirical findings from case studies on state hospital closures', *International Journal of Law and Psychiatry* 23(3–4), 329–344. [http://dx.doi.org/10.1016/S0160-2527\(00\)00042-X](http://dx.doi.org/10.1016/S0160-2527(00)00042-X)
- Ruoff, G., 2005, 'A method that dramatically improves patient adherence to depression treatment', *Journal of Family Practice* 54(10), 846–851.
- Sirey, J., Bruce, M.L. & Kales, H.C., 2010, 'Improving antidepressant adherence and depression outcomes in primary care: The treatment initiation and participation (TIP) program', *American Journal of Geriatric Psychiatry* 18(6), 554–562. <http://dx.doi.org/10.1097/JGP.0b013e3181cdeb7d>
- Valenstein, M., Kavanagh, J., Lee, T., Reilly, P., Dalack, G.W., Grabowski, J. *et al.*, 2011, 'Using a pharmacy-based intervention to improve antipsychotic adherence among patients with serious mental illness', *Schizophrenia Bulletin*, 37(4), 727–736. <http://dx.doi.org/10.1093/schbul/sbp121>
- Vuckovich, P.K., 2010, 'Compliance versus adherence in serious and persistent mental illness', *Nursing Ethics* 17(1), 77–85. <http://dx.doi.org/10.1177/0969733009352047>
- Whittemore, R. & Knafl, K., 2005, 'The integrative review: Updated methodology', *Journal of Advanced Nursing* 52(5), 546–553. <http://dx.doi.org/10.1111/j.1365-2648.2005.03621.x>
- Zygmunt, A., Olfson, M., Boyer, C.A. & Mechanic, D., 2002, 'Interventions to improve medication adherence in schizophrenia', *American Journal of Psychiatry* 159(10), 1653–1664.