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REVIEW

Group CBT for psychosis in acute care: a review of outcome studies

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Abstract. There is evidence that group cognitive behavioural therapy for psychosis (CBTp) is an effective treatment, but much of this research has been conducted with outpatient populations. The aim of this review was to determine the utility of group CBTp for inpatients. We systematically searched Scopus, Web of Science and EBSCO electronic databases to identify relevant research. We reviewed the resulting articles and included those which had been conducted with inpatients, with symptoms of psychosis, using cognitive behaviour therapy, delivered in a group format. Fourteen articles relating to ten studies were identified. Two were randomized controlled trials; two were cohort studies and the rest were pre-/post-intervention studies. There was considerable heterogeneity between the studies and all had methodological limitations. The findings suggest positive trends towards the reduction of distress associated with psychotic symptoms, increased knowledge of symptoms, decreased affective symptoms and reduced readmissions over several years. However, there is currently not enough evidence to draw any strong conclusions regarding the utility of group CBTp for inpatients due to the small number of studies and limitations in quality and generalizability. Therefore, this review indicates the need for further research, particularly large, methodologically rigorous, randomized controlled trials.

Key words: CBT, group psychotherapy, inpatient CBT, psychosis

Introduction

The current financial crisis is a global factor leading to cuts in funding for mental healthcare provision (WHO, 2013). The impact of fewer resources in health and social care is likely to increase the needs of those with mental health problems and create new groups of vulnerable people, such as the young unemployed (WHO, 2013). Changing the way services are delivered

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to improve quality and reduce costs is key in governmental strategies for mental health in the UK [Department of Health (DoH), 2011], Europe (European Commission, 2005) and around the world [National Institute for Mental Health (NIMH), 2008].

Poor mental health is expensive, approximating to 3–4% of GDP in the European Union (European Commission, 2005). Severe problems, such as schizophrenia, have been estimated to cost US$65 billion in the USA (APA, 2009), and £6.7 billion across the life-course in the UK (Centre for Mental Health, 2010). Inpatient hospital stays are particularly costly accounting for 56% of the total spent on schizophrenia (Knapp *et al.* 2002). Patients with 'treatment-resistant' symptoms have some of the highest readmission rates (Haywood *et al.* 1995), accounting for half of all admissions longer than 90 days (Thompson *et al.* 2004), and costing around a quarter of the NHS's annual spend on mental health [National Institute for Health and Clinical Excellence (NICE), 2009].

However, labelling patients as 'treatment-resistant' presents a disempowering, hopeless message about recovery. Instead, consideration of what treatment is offered to these people is important. Currently, the main treatments for people diagnosed with schizophrenia are pharmacological (van Os & Kapur, 2009) and evidence suggests that 50% of people with a diagnosis of schizophrenia in the UK (Harrington *et al.* 2002), and up to 70% worldwide (Tani *et al.* 2013) are prescribed more than one antipsychotic medication, despite guidelines which recommend monotherapy (NICE, 2009). Yet medication is only effective for around one third of patients (Mueser & McGurk, 2004) and psychological therapies are often unavailable (van Os & Kapur, 2009).

There is evidence that cognitive behaviour therapy for psychosis (CBTp) is useful in treating the symptoms of schizophrenia and meta-analyses have shown positive effects of treatments aimed at different symptoms (Zimmerman *et al.* 2005; Wykes *et al.* 2008). Although recent research indicates some older studies may be overly optimistic about the effects (Jauhar *et al.* 2014; Velthorst *et al.* 2014). Research using CBTp as an adjunct to antipsychotic medication has shown particularly large effect sizes in symptom reduction and improved medication adherence (Turkington *et al.* 2004). However, there is variability in how this evidence has been incorporated in professional guidance (Gaebel *et al.* 2005). In the USA and Canada, psychological interventions are not recommended until after the acute phase (APA, 2004; Canadian Psychiatric Association, 2005); but UK and Australasian guidance suggests starting CBTp in acute treatment [Royal Australian and New Zealand College of Psychiatrists (RANZCP), 2005; National Institute for Health and Care Excellence (NICE), 2014]. The latter recommendation offers patients increased choice and a more hopeful message about recovery. Although it is still unclear whether CBTp is more effective than other psychosocial interventions (Jones *et al.* 2012), there is promising evidence that CBTp may have superior long-term effects by reducing readmission rates (Sarin *et al.* 2011) and reducing the length of inpatient stays (NICE, 2009), compared to other interventions.

Most evidence regarding CBTp has utilized outpatient samples receiving weekly individual therapy, so the generalizability of this research to inpatients is questionable. Inpatients are different as they may be more distressed, suffering more severe problems and have more comorbid difficulties (Kosters *et al.* 2006). With the NHS attempting to cut costs, offering individual therapy to all inpatients with symptoms of psychosis is expensive and unrealistic without significantly more resources (Guaiana *et al.* 2012). Instead group CBTp offers a way of streamlining treatment and improving access for more people.

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Interest in group CBT for people with severe mental health problems has grown. Questions have arisen regarding whether it is as effective as individual therapy (Morrison, 2001), or whether it enhances effects through additional peer support, inaccessible through individual therapy (Newton *et al.* 2007). Reviews suggest that group CBTp is as effective as individual therapy for patients living in the community (Wykes *et al.* 2008), and is possibly more effective if used as an early intervention (Saksa *et al.* 2009). However, little research has examined the effectiveness of group CBTp with inpatients.

Arguments that people experiencing acute psychosis cannot engage in talking therapies have been challenged by experienced clinicians (Hanna, 2009; Freemantle & Clarke, 2009; Fagin, 2010) and guidance which recommends CBTp in acute care (RANZCP, 2005; NICE, 2009). In line with calls from service users to improve choice of treatment available in hospital (DoH, 2007), recent incentive schemes to reward best practice, such as 'star wards', have encouraged all hospitals to offer ward-based talking therapy groups (Bright, 2006). However, the evidence base for some therapies is still developing and little research has evaluated group CBTp for inpatients. Consequently, this review questions whether group CBTp:

- is acceptable to inpatients;
- can reduce distress or unwanted symptoms;
- can improve coping or quality of life.

Therefore, this review aims to identify all studies published in peer-reviewed journals which provide evidence relevant to the research questions; review the findings and quality of evidence, and identify gaps in the evidence base which can be explored through further research.

Methods

Inclusion criteria

We included comparison studies which used a CBT intervention (including psycho-education if based on CBT material), delivered in a group format, to inpatients with psychosis or a diagnosis of schizophrenia. We excluded studies which were not comparison studies (including qualitative descriptions of groups); which delivered individual therapy or non-CBT-based group therapy; which used only outpatient samples; which used only inpatients without psychosis or a diagnosis of schizophrenia; or which were not written in English. Due to the small literature base being searched, no further exclusion criteria were used, such as dual diagnosis, comorbidity, intellectual disability or age. We also chose not to exclude studies which used a combination of inpatients and outpatients, or which included participants with a mixture of diagnoses (as long as this included psychosis or schizophrenia), because this would overly restrict the number of studies available for consideration.

Search strategy

We searched Scopus, Web of Science and EBSCO (including Medline and PsycINFO) databases using the terms: group AND (CBT OR cognitive behav* therapy) AND (psychosis OR schizophren* OR hearing voices) AND (inpatient OR hospital OR mental OR acute patient), not limited by year of publication.

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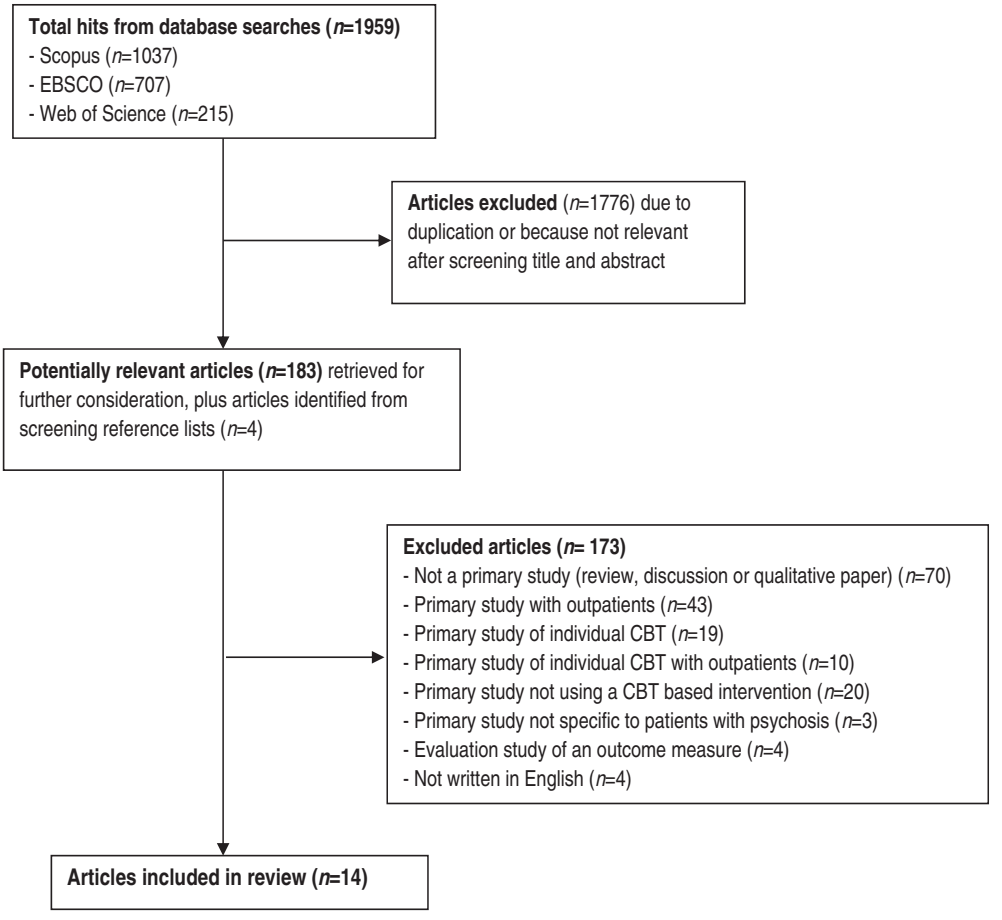

Fig. 1. Electronic database search and review process.

These searches, conducted in January 2013, generated 1959 articles which were reviewed via title and abstract and excluded articles which did not meet our inclusion criteria. We reviewed the resulting 183 articles after collecting the full text (and identified a further four articles from article reference lists) and further excluded articles, recording the reason for exclusion. We included the remaining 14 relevant articles in this review (see Fig. 1).

Quality assessment

All 14 papers were assessed for quality of evidence. There are many tools available to evaluate quality, such as the Grading of Recommendations Assessment, Development and Evaluation (GRADE) guidelines (Atkins *et al.* 2005) or the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher *et al.* 2009). However, given the small scale of this review, these tools were overly complex and exclusive. Therefore, all

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studies were included in the review and quality is discussed based on general principles of evaluating research evidence (Gugiu & Gugiu, 2010).

Results

The 14 papers reviewed related to 10 studies. The majority were experimental studies (two randomized controlled trials (RCTs) and the rest used pre-/post-intervention measures), and two were cohort studies. Table 1 summarizes the study characteristics, findings and limitations.

Discussion

Overall the studies reviewed indicate that group CBTp may be a positive addition to routine inpatient care. However, given the small number of studies identified, and the variation in methodologies and quality, caution is necessary in drawing any strong conclusions. In line with our original questions evidence from the studies reviewed suggests that group CBTp:

- Is acceptable to patients, as demonstrated by favourable responses on satisfaction questionnaires.
- Can potentially reduce distress associated with symptoms, through increased knowledge of, and sense of control over, symptoms.
- Can potentially improve quality of life and coping as demonstrated through improved psychosocial functioning.

Inpatients are often highly distressed and it is a difficult time to recruit research participants. A strength of this review is that it includes research which reflects the reality of working with a challenging population and did not exclude studies which used different methodological designs, such as cohort studies. However, understandably, this led to limitations in the quality of studies reviewed and it is currently not possible to conduct a meta-analysis due to heterogeneity in the data, study design, analysis and lack of reported effect sizes. Many studies had small samples and used non-parametric analyses or underpowered statistical calculations, with the exception of the longitudinal cohort studies. Comparison groups were often lacking and few studies included a treatment as usual (TAU) group, making it difficult to conclude whether changes are due to the intervention or other variables, such as time spent in hospital or medication. There was also heterogeneity in the CBTp manuals used; authors often adapted manuals or developed unique manuals. Although CBTp interventions should include the same basic principles, variations in the presentation of information in the various treatment manuals, and the further amendments made by the authors, make it difficult to compare whether different manuals were delivering the same 'active' components. There were differences in treatment length, from 'stand-alone' to 20 sessions, and variability in outcome measures. Some studies lacked any validated measures and relied on routinely collected data (such as readmission rates), some used newly developed scales of questionable reliability, and many did not blind the assessments or raters. All these differences make it difficult to compare what is being examined and generalize from studies which appear to measure the same intervention. Differences in the reporting of studies also means that the choice of search terms could potentially limit the studies captured, and in particular exclude third-wave

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Table 1. *Characteristics of studies included in the review*

Authors and location	Sample	Comparison groups	Study design and intervention	Measures	Length follow-up (drop out)	Primary outcomes	Secondary outcomes	Limitations
Aho-Mustonen *et al.* (2008) Finland	15 male (forensic) inpatients	7 PE group 8 matched TAU group	Pre/post design 8-session manualized group PE* Groups run by two trained psychologists	KASQ BDI-II Awareness and attitudes towards treatment and medication questionnaire (designed by authors)	No follow-up ($n = 4$), 36%	Significant increase in: knowledge about schizophrenia; awareness of mental illness	No significant difference in: attitudes towards treatment and medication Non-significant improvement in depression scores in intervention group	Reasonable quality for a pilot study – limited by small sample size and lack of follow-up
Aho-Mustonen *et al.* (2011) Finland	39 (forensic) inpatients 35 male 4 female	19 PE group 20 TAU group	RCT Intervention as above	KASQ SUMD CRS Drug Attitude Inventory-10 BPRS NOISE-30 BDI-II RSS QoL index score PSQ	3 months ($n = 4$), 8%	Significant increase in KASQ and insight into illness at follow-up in PE group (0.68), not significant post-treatment Significant increase in self-esteem post-treatment in PE group (0.71), not significant at follow-up	Health-related QoL significantly improved in TAU (not in PE group) Perceived stigma decreased in both groups but more in the TAU group Irritability significantly increased in the PE group from baseline to follow-up (0.69)	Good quality for small scale RCT – limited by short follow-up

Table 1 *(cont.)*

Authors and location	Sample	Comparison groups	Study design and intervention	Measures	Length follow-up (drop out)	Primary outcomes	Secondary outcomes	Limitations
Bechdolf *et al.* (2004) Germany	88 inpatients 38 male 46 female	40 CBT group 48 PE group	RCT 16-session group CBT† (over 8 wk) or 8 weekly sessions of PE Groups run by trained therapists	MSQoL Medication compliance PANSS Readmission rates	6 months ($n = 17$), 24%	Significantly lower readmission rates in CBT group at follow-up ($p = 0.04$) not significant post-treatment Significant (large) improvement on PANSS in both groups post-treatment AND at follow-up	No significant differences between CBT and PE groups on symptoms	Good quality RCT – limited by lack of TAU control group
Bechdolf *et al.* (2010) Germany	As above	As above	As above	MSQoL	6 months ($n = 7$), 10%	Significant improvement in QoL in both groups with small effect size (CBT = 0.25; PE = 0.29) at 6 months	No significant differences between CBT and PE group on QoL post-treatment or follow-up	As above
Bechdolf *et al.* (2005) Germany	43 outpatients 20 female 23 male	RCT 16 CBT group 27 PE group	Repeated above interventions	Medication compliance PANSS Readmission rates	24 months ($n = 31$), 44%	No significant differences between groups	Descriptively CBT group had average 21% less readmissions, 71 fewer days in hospital and higher compliance with medication	Follow-up to 2004 study – limited by high drop-out rates and unrepresentative sample as a result of drop out

Table 1 *(cont.)*

Authors and location	Sample	Comparison groups	Study design and intervention	Measures	Length follow-up (drop out)	Primary outcomes	Secondary outcomes	Limitations
Bickerdike & Matias (2010) UK	5 male inpatients (medium secure)	Pre/post No control group	17-session group CBTp (designed by authors) Groups run by 2 clinical psychologists	PSYRATS BDI BAI RSS Satisfaction	No follow-up ($n = 1$), 20%	No significant results on validated measures	Overall high levels of satisfaction	Small sample, lack of comparison group, lack of follow-up, unblinded assessment Interpretation of the PSYRATS difficult given low level of symptoms pre-treatment Lack of detail in the paper including numerical results
Chadwick *et al.* (2000) UK	22 patients 8 inpatients 14 outpatients (mixed gender)	Pre/post No control group	8-session manualized group CBT (designed by authors) Groups run by 2 trained therapists	HADS BAVQ Satisfaction Topography of voices rating scale, independent assessment, therapeutic factors	Within 1 month ($n = 4$), 18%	Significant reduction in conviction of beliefs about omnipotence ($p < 0.01$) and control ($p = 0.001$) of voices	Positive responses to process measures No changes in affective symptoms	Reasonable quality small scale study – limited by lack of control group and small sample size

Table 1 *(cont.)*

Authors and location	Sample	Comparison groups	Study design and intervention	Measures	Length follow-up (drop out)	Primary outcomes	Secondary outcomes	Limitations
Hagen *et al.* (2005) Norway	19 patients (in- and out-patients) 80% male 20% female	Pre/post No control group	16-session group CBT‡ over 8 weeks Groups run by 2 experienced psycholo-gists	CDSS BDI BHS GAF MCMI-III YSQ-SF	6 months ($n = 4$), 27%	Significant ($p <$ 0.01) reduction in depression post-treatment and follow-up Significant ($p <$ 0.001) increase in psychosocial functioning post-treatment and at follow-up No change in hopelessness or self-esteem	Some significant changes in personality patterns but did not hold up at follow-up.	Reasonable quality small scale study – limited by small sample size, lack of control group and blind assessment No measure of psychosis so difficult to determine whether effects specific to people with psychosis
McInnis *et al.* (2006) UK	9 inpatients (low secure) 7 male 2 female	Pre/post No control group	'Recovery' CBTp group (designed by authors) Groups run by clinical psychologist and OT	Insight Scale CFSE-II KASQ Compliance with medication Experience of schizophrenia	6 months (file review) No drop out	Significant improvement in insight post-treatment ($p <$ 0.05). No effect on self-esteem General trend for increased knowledge (not significant) post-treatment	Informal feedback generally positive post-treatment and general increase in access to community at follow-up	Pilot study – limited by small sample size, lack of control, non-blind assessment and only file review follow-up

Table 1 *(cont.)*

Authors and location	Sample	Comparison groups	Study design and intervention	Measures	Length follow-up (drop out)	Primary outcomes	Secondary outcomes	Limitations
Mortan *et al.* (2011) Turkey	12 male inpatients	Pre/post 7 CBT group 5 TAU group	9-10 twice weekly group CBT sessions (designed by authors) Groups run by 2 psychologists	SAPS SANS Problem/ symptoms checklist KASQ	1 year ($n = 3$), 25%	Significant ($p < 0.05$) improvement in positive and negative symptoms and distress associated with psychosis in CBT group, held at follow-up No change in control group	Improvements in depressive symptoms only significant in control group ($p < 0.05$) No change in knowledge in either group	Pilot study – limited by small sample size, non-blind allocation and assessment and drop out at follow-up Use of statistical analysis questionable on sample this size
Pinkham *et al.* (2004) USA	11 inpatients 8 male 2 female	Pre/post 5 CBT group (7 sessions) 5 CBT group (20 sessions) No TAU	7- or 20-session group CBT§ Groups run by CBT therapists	PSYRATS BAVQ-R PANSS WRAT-3	No follow-up ($n = 1$), 9%	Significant reductions in both groups on distress associated with voices ($p < 0.05$) moderate effect size (0.51) No significant differences between groups BAVQ-R or PSYRATS post-treatment	Improvements in psychotic symptoms post-treatment approached significance ($p < 0.06$) Pre-morbid intellectual functioning not related to treatment response	Pilot study – limited by small sample size, lack of control, lack of random allocation and blind assessment, lack of follow-up

Table 1 *(cont.)*

Authors and location	Sample	Comparison groups	Study design and intervention	Measures	Length follow-up (drop out)	Primary outcomes	Secondary outcomes	Limitations
Raune & Daddi (2011) UK	137 inpatients (61% had psychosis) 51% male 49% female	Cohort No control group	Group CBT – based on Bieling *et al.* (2006) manual (not specific for psychosis) Stand-alone weekly sessions – group chose topic each week Groups run by clinical psychologist	Attendance/ re-attendance rates Patient feedback on 5- point Likert scale (useful, enjoyable, will re-attend, learned something to help distress)	No follow-up Missing data (n = 74 out of 200), 37%	75% of group participants agreed positively with each evaluation dimension Females significantly more likely to re-attend, females with bipolar significantly most likely to re-attend	Suggests group is feasible, acceptable and that patients find it effective	Large naturalistic pilot study (not specific to psychosis) – limited by lack of control group, non-validated non-blind assessment measures, no distress measure and high rates of missing data
Veltro *et al.* (2006) Italy	90% of inpatients in 3-year period (~40% psychosis) Yr 0: 150 Yr 1: 171 Yr 2: 181 Yr 3: 129	Used historical controls – based on data collected year before the group was introduced	Group CBT started on wards (not specific for psychosis) Stand-alone daily sessions – staff chose topic each day Groups run by 2 members of multidisciplinary team (usually one doctor)	Readmission rates Length of hospital stay Patient satisfaction survey Ward atmosphere – rated by nurses Frequency in use of physical restraints	2 years No info on drop out	Significant reduction in readmission rates over 2 years ($p < 0.02$) Significant reduction in compulsory admissions over 3 years ($p < 0.02$) Non-significant reduction in mean length of stay	Significant improvements in patient satisfaction ($p < 0.001$) and ward atmosphere ($p < 0.001$) Reduced frequency of violence, aggression and use of physical restraints, though not significant as pre-intervention rates were low	Large naturalistic study (not specific to psychosis) – limited by lack of randomization, contemporary control group, specific distress blinded measures, ethical review

Table 1 *(cont.)*

Authors and location	Sample	Comparison groups	Study design and intervention	Measures	Length follow-up (drop out)	Primary outcomes	Secondary outcomes	Limitations
Veltro *et al.* (2008) Italy	Yr 4: 102	As above	As above	As above	4 years No info on drop out	Significant reduction in readmission rates especially for patients with diagnosis of schizophrenia ($p <$ 0.001) or bipolar disorder ($p < 0.04$)	Improvements held at follow-up in the other dependent variables which showed significant improvements in original study	Large follow-up study – limited by lack of data on drop out and same limitations as above

BAI, Beck Anxiety Inventory; BAVQ-R, Beliefs about voices questionnaire – revised; BDI-II , Beck Depression Inventory; BHS, Beck Hopelessness Scale; BPRS, Brief Psychiatric Rating Scale; CDSS, Calgary Depression Scale for Schizophrenia; CFSE-II, Culture Free Self-Esteem Scale; CRS, Compliance Rating Scale; GAF, Global Assessment of Functioning; HADS, Hospital Anxiety and Depression Scale; KASQ, Knowledge about Schizophrenia Questionnaire; MCMI-III, Millon Clinical Multiaxial Inventory; MSQoL, Modular System for Quality of Life; NOISE-30, Nurses Observation Scale for Inpatient Evaluation; PANSS, Positive and Negative Symptoms Scale; PE, patient education; PSQ, Perceived Stigma Questionnaire; PSYRATS, Psychotic Symptoms Rating Scales; QoL index score, Health-related quality of life single index score; RCT, randomized control trial; RSS, Rosenberg Self-esteem Scale; SANS, Scale for the Assessment of Negative Symptoms; SAPS, Scale for Assessment of Positive Symptoms; Satisfaction, Satisfaction Questionnaire – designed by authors; SUMD, Scale to Assess Unawareness of Mental Disorder; TAU, treatment as usual; WRAT-3, Wide Range Achievement Test III; YSQ-SF, Young Schema Questionnaire – Short Form.

*Manual modified from Ascher-Svanum & Krause (1991) – based on stress vulnerability model.

†Manual based on Tarrier *et al.* (1990).

‡Manual based on Free (1999) and modified by authors.

§Manual based on Wykes *et al.* (1999) and Wykes (2004) formats.

therapies, which may not use the terms CBT or cognitive therapy but which stem from this tradition.

However, despite the limitations some conclusions can be drawn from the findings in this review. Four studies examined participants' knowledge about schizophrenia. One pilot study followed by an RCT found significant improvements following intervention (Aho-Mustonen *et al.* 2008, 2011), one small pre/post pilot study found a positive trend towards improvements (McInnis *et al.* 2006) and another pre/post pilot study found no change (Mortan *et al.* 2011). Therefore, there is reasonable evidence that group CBTp can improve knowledge about schizophrenia. In addition three studies included a measure of insight and all found significant improvements following the intervention (McInnis *et al.* 2006; Aho-Mustonen *et al.* 2008, 2011). However, it is worth noting that this may not lead to improvements in functioning in itself, as evidence suggests that improved insight may actually lead to increased depression, although it may also offer greater opportunity for treatment (Chakraborty & Basu, 2010).

Six studies included a measure of distress associated with positive symptoms of psychosis. Two pre/post studies (Chadwick *et al.* 2000; Pinkham *et al.* 2004) found significant reductions on the Beliefs About Voices Questionnaire. Two studies, one RCT (Bechdolf *et al.* 2004); and one small pilot (Mortan *et al.* 2011) found significant reductions on the Scale for the Assessment of Positive Symptoms, and the Positive and Negative Symptoms Scale (PANSS), respectively. One pre/post study (Pinkham *et al.* 2004) found a positive trend towards reductions on the PANSS and the Psychotic Symptom Rating Scales; and one RCT found reductions on the Brief Psychiatric Rating Scale, although similar reductions were seen in controls (Aho-Mustonen *et al.* 2011). Therefore, despite the use of different measures, group CBTp appears to lead to improvements in distress associated with positive symptoms of psychosis.

Similarly, six studies included a measure of depression or anxiety associated with psychosis. Two pre/post studies (Hagen *et al.* 2005; Mortan *et al.* 2011) found significant reductions in negative symptoms on the Beck Depression Inventory (BDI-II), and the Scale for the Assessment of Negative Symptoms, respectively. Aho-Mustonen and colleagues' pilot study (2008) and RCT (2011) both showed positive trends towards improvements on the BDI-II, and two pre/post studies (Chadwick *et al.* 2000; Bickerdike & Matias, 2010) found no change on the Hospital Anxiety and Depression Scale or BDI-II, although the latter was poor quality. Therefore, there is an indication of a positive effect of group CBTp on negative symptoms.

All five studies (two pre/post and three cohort) which measured patient satisfaction reported positive findings (Chadwick *et al.* 2000; Veltro *et al.* 2006, 2008; Bickerdike & Matias, 2010; Raune & Daddi, 2011) although only Chadwick and colleagues (2000) used an independent person to collect this data. Therefore, although there are questions of demand characteristics it appears participants found group CBTp acceptable and found elements of the groups helpful.

Other variables, measured by only a few studies, showed more equivocal outcomes. One RCT found significant improvements in self-esteem (Aho-Mustonen *et al.* 2011), but two pre/post studies found no change (Hagen *et al.* 2005; McInnis *et al.* 2006). Similarly, two RCTs found significant improvements in Quality of Life (QoL) (Bechdolf *et al.* 2004, 2010) but in another RCT, health-related QoL improved significantly in controls but not in the intervention group (Aho-Mustonen *et al.* 2011). Perceived stigma significantly improved in one pilot study (Aho-Mustonen *et al.* 2008) and showed a positive trend in the resulting RCT, although the control group showed greater improvement (Aho-Mutonen *et al.* 2011).

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Encouragingly, two studies of reasonable quality (one RCT, one cohort) found significant reductions in readmission rates (Bechdolf *et al.* 2004; Veltro *et al.* 2006) which held at follow-up (Bechdolf *et al.* 2005; Veltro *et al.* 2008). Finally, three (two RCTs, one pre/post) found improvements in compliance with, or attitudes towards, medication (Bechdolf *et al.* 2004, 2005; McInnis *et al.* 2006; Aho-Mustonen *et al.* 2008, 2011), although none of these reached significance, so the impact on adherence is questionable.

Conclusion

There are positive indications that group CBTp with inpatients can help alleviate distress associated with psychotic symptoms, increase knowledge, and reduce negative symptoms and readmission rates. However, there is currently not enough high-quality evidence to draw firm conclusions regarding effectiveness. There is a pressing need for better methodological quality in effectiveness studies which would help provide evidence for a more thorough examination of whether group CBTp with inpatients is a cost-effective way of delivering treatment, reducing readmissions and improving patient choice and satisfaction with care.

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Declaration of Interest

None.

Recommended follow-up reading

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Learning objectives

(1) Group CBTp with inpatients may help to alleviate distress from psychotic symptoms.
(2) Further high-quality evidence with inpatients is needed in order to judge effectiveness of group CBTp.
(3) Further evidence could help to examine the cost-effectiveness of group CBTp for inpatients.
(4) There is a need to explore patient experiences of CBTp in order to assess satisfaction with care.

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