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Group CBT for psychosis: A longitudinal, controlled trial with inpatients

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ABSTRACT

Individual cognitive behaviour therapy for psychosis (CBTp) is a recommended treatment in the acute phase and beyond. However, less is known about the effectiveness of group CBTp in acute care. This mixed methods study explored the implementation and effectiveness of brief group CBTp with inpatients. This prospective trial compared inpatients who received either a four week group CBTp program or treatment as usual (TAU). Participants (n = 113 at baseline) completed self-report measures of distress, confidence and symptoms of psychosis at baseline, post-intervention and one month follow up. CBTp group participants also completed a brief open-ended satisfaction questionnaire. Using complete case analysis participants who received CBTp showed significantly reduced distress at follow up compared to TAU and significantly increased confidence across the study and follow up period. However, these effects were not demonstrated using a more conservative intention-to-treat analysis. Qualitative analysis of the satisfaction data revealed positive feedback with a number of specific themes. The study suggests that brief group CBTp with inpatients may improve confidence and reduce distress in the longer term. Participants report that the groups are acceptable and helpful. However, given the methodological limitations involved in this 'real world' study more robust evidence is needed.

Introduction

Cognitive behaviour therapy for psychosis (CBTp) has been widely researched over the last 20 years and there is considerable evidence that it is an effective intervention (Wykes, Steel, Everitt, & Tarrier, 2008). Guidelines for professionals recommend individual CBTp in the treatment of schizophrenia (American Psychological Association, 2004; Canadian Psychiatric Association, 2005) and some recommend that this should start in the acute phase (Royal Australian and New Zealand College of Psychiatrists, 2005; National Institute for Health and Clinical Excellence (NICE), 2010). Mental health service providers must consider how best to offer treatment within the financial constraints of the current economic climate (World Health Organisation, 2013).

Group therapy is a practical way of streamlining therapy and several randomised controlled trials (RCTs) have been conducted comparing group CBTp with treatment as usual (Barrowclough et al., 2006; Wykes et al., 2005), group psycho-education (Bechdolf et al., 2004; 2010), social skills training (Lecomte et al., 2008) or enhanced supportive therapy incorporating emotional support and non-symptom related counselling (Penn et al., 2009) with mixed findings. There is some evidence that long term group CBTp can be more effective than individual CBTp if used as an early intervention (Saska, Cohen, Srihari, & Woods, 2009) or for those with less severe symptoms (Lockwood, Page, & Conroy-Hiller, 2004). While a review of the literature on CBTp found no differences in effect sizes between group and individual therapy, it suggested that clustering effects in group therapy may improve treatment efficacy (Wykes et al. 2008).

Unfortunately, there is considerable heterogeneity amongst the type and length of therapy interventions used in these studies (e.g. ranging from 8 to 24 sessions, and based on different CBTp manuals) and the type of measures used to assess change (e.g. positive and negative symptom scale (PANSS; Kay, Fiszbein, & Opler, 1987), psychotic symptoms rating scales (PSYRATS; Haddock, Mc Carron, Tarrier, & Faragher, 1999), Beliefs about voices questionnaire (BAVQ; Chadwick, Lee & Birchwood, 2000), brief psychiatric rating

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scale (BPRS; Ventura, Green, & Shaner, 1993) and many more) making direct comparisons difficult. Moreover, the majority of this research has only studied outpatient populations.

Group therapy in inpatient settings is challenging in a number of ways. First, the timing of intervention, because service users are currently experiencing crisis, there is considerable uncertainty regarding length of stay in hospital, and a common increase or change in medication at the time of admission. A recent systematic review concluded that there are positive signs that group CBTp in inpatient settings may be effective, but more robust evidence is needed (Owen, Speight, Sarsam, & Sellwood, 2014). There are similar difficulties in the outpatient literature regarding heterogeneity in type and length of therapy, and the plethora of assessment measures used to assess change. In addition, inpatient research has often used small sample sizes (Haddock, Tarrier, et al., 1999) or lacked treatment as usual (TAU) control groups (Dannahy et al., 2011; Pinkham, Gloege, Flanagan, & Penn, 2004). But research has shown positive findings in terms of service users' experiences of participating in groups (Bickerdike & Matias, 2010) and general wellbeing (Drinnen, 2004). Several studies have started to move away from pure CBTp manuals and include elements of person based therapy (Dannahy et al. 2011), acceptance and commitment therapy (Gaudiano & Herbert, 2006) or mindfulness (Chadwick, Taylor, & Abba, 2005; Drinnen, 2004). There is also some encouraging evidence that incorporating CBTp groups into routine practice in acute inpatient care can reduce readmission rates (Svensson, Hansson, & Nyman, 2000; Veltro et al., 2006).

In line with this evidence and calls from service users for more choice of treatment in hospital (James, 2001), UK government initiatives for best practice on inpatient wards include the provision of talking therapy groups (Bright, 2006; Department of Health (DoH, 2007)). One example of this in clinical practice comes from Clarke and colleagues who designed an inpatient therapy group adopting a recovery approach based on CBTp and mindfulness, encouraging normalisation of symptoms and education on emotional coping skills, arousal management and problem solving (Hill, Clarke, & Wilson, 2009). They ran the group in four weekly sessions and measured participants' levels of distress, perception of control over their mental health, their goals regarding their mental health and their experiences of the group (Phillips, Clarke & Wilson, unpublished). Due to the small sample size no statistically significant changes were found but the feedback from service users about their experiences of the group were positive, particularly regarding increased wellbeing and decreased isolation. Unfortunately, this study did not have a control group so it is not possible to determine whether the findings were due to the group intervention or some other variable. Further research with a larger sample size and a control group is necessary in order to provide more robust evidence for the positive effects of such a group.

The movement towards a recovery approach in psychosis research (May, 2004) draws attention to the limited usefulness of aiming to reduce 'symptoms' of psychosis in favour of focussing interventions on functional gains such as confidence, understanding and quality of life (Bentall, 2009). This is particularly relevant in inpatient settings where service users' abilities to cope with their symptoms effectively are a more important measure of readiness for discharge than reduction in symptomatology. There is a need for further research in inpatient settings, evaluating the effects of CBTp, which balances attempts to reduce symptoms of psychosis with empowering service users to gain more control and understanding over their experiences. In order to address this gap in the literature this study was designed to formally assess the approach developed by Clarke and colleagues using a quasi-experimental design; so that any positive effects observed could be more confidently attributed to the group intervention. The study had three main hypotheses:

1. Participants who receive group CBTp will show greater reductions in distress than those receiving treatment as usual (TAU).
2. Participants who receive group CBTp will show greater improvements in confidence about their own mental health than those receiving TAU.
3. As a consequence of attending the groups participants may experience a greater reduction in positive symptoms of psychosis than those who receive TAU.

An additional aim of the study was to explore the feasibility of running a brief CBTp group on an acute inpatient ward and the accessibility and acceptability of such a group to service users.

Methods

Design

This mixed methods study used a prospective, quasi-experimental design to compare two groups of participants from four inpatient wards in an acute psychiatric service in North-West England. Participants were allocated to either receive a four week group CBTp intervention or TAU. Data were collected at three time points; baseline, post-intervention and follow-up one month later, and at equivalent times in the control group. It was not possible to randomly assign participants to groups because allocation depended on which ward (A, B, C or D) participants were admitted to and whether or not that ward was running the intervention group at the time. Due to practical constraints it was not possible to cluster randomise people on the same ward to receive either CBTp or TAU as all groups were held in the patient lounge based on the ward. There were no differences between participants admitted to each ward, except for gender, (two wards were single sex and two were mixed), admissions were allocated according to available bed space. It was also not possible to blind the assessors as the same researcher who collected the data (MO) also ran the intervention groups. Therefore, a non-equivalent groups design was adopted in order to minimise bias within the practical constraints of the acute inpatient setting.

Participants

Service users admitted to one of the participating wards during the study period (May 2012–May 2013) were eligible to participate. Inclusion criteria were based on presence of psychotic symptoms. Service users who identified themselves as hearing voices or seeing visions (hallucinations), experiencing strongly held beliefs (delusions), or persecutory fears (paranoia), were eligible. In order to reflect the diversity of acute inpatient settings no restrictions were placed on participants experiencing first episode or long-term symptoms. The only exclusion criteria were participants who could not understand or read English or those considered too acutely distressed to consent or participate by the acute care team.

Intervention

The group intervention was based on the 'What is real and what is not' group programme by Clarke and Pragnell (2008). Designed specifically for inpatients this third wave CBTp based group has four sessions each with a different topic for discussion, handouts and homework. Session one sets the group rules, establishes group aims, presents psycho-education discussing different experiences, focuses on normalising and introduces monitoring. Session two,

Table 1
Participant characteristics for scaled variables by group with mean comparison.

Characteristic	CBTp group				TAU group				Significance test	
	n	Mean	SD	Range	n	Mean	SD	Range	Stat	p
Age (years)	71	42.15	12.43	19–66	42	38.60	11.65	20–66	t = 1.51 (df = 111)	0.14
Deprivation	69	4783.12[a]	6238.93	12–24073	39	2623.13	4286.49	6–19642	U = 1032, (z = −2.01)	0.05[b]
Length of admission (days)	71	98.41	113.80	7–660	42	73.71	73.76	5–414	U = 1346.50 (z = −0.86)	0.39
Length at participation (days)	71	37.77	75.62	0–521	42	38.69	57.76	1–316	U = 1610.50 (z = 0.71)	0.48
No. of admissions	71	4.25	3.94	1–18	42	4.31	4.06	1–16	U = 1.510 (z = 0.16)	0.91

[a] Higher scores indicate lower deprivation.
[b] Significant at the 0.05 level (2 tailed).

focuses on understanding experiences using the CBT model, and explains that a person's interpretation of an unusual experience influence how they feel and behave. It also introduces the idea of a continuum between 'shared' and 'personal' experiences, and examines triggers. Session three explores different behaviours and coping styles, and the difference between behavioural and cognitive techniques of distraction and focussing; it introduces mindfulness and practices breathing techniques and mindfulness in session. Session four focuses on how people make sense of their experiences and discusses the stress-vulnerability model and other ways of understanding psychosis, including seeing it as a coping mechanism (Hill et al., 2009). The manual was adapted slightly in order to; simplify the language used and increase readability, incorporate our outcome measures, and make it specific to our service. This specific CBTp group manual was selected because; it was designed to suit the short stay nature of many participants on the ward; it fitted with the practical resource constraints of a small clinical psychology service operating in the hospital at the time; and because it allowed a trial to be conducted within the limited time available as part of MO's doctoral training.

Measures

Four self-report questionnaires were administered to all participants at each time point. One additional evaluation questionnaire was given to those participants who completed the intervention groups.

1. The Clinical Outcomes in Routine Evaluation (CORE- 10; Connell & Barkham, 2007) is a short form of the CORE-OM measuring pathology in mental health. It has good internal reliability (0.90) and high correlation (0.94) with the extended version in clinical samples (Barkham et al., 2013). It has been used to assess and review symptoms in groups for people with psychosis (Chadwick et al., 2005; Durrant, Clarke, Tolland, & Wilson, 2007). It was chosen as a general measure of distress, not specific to particular psychotic symptoms.
2. The Mental Health Confidence Scale (MHCS; Carpinello, Knight, Markowitz, & Pease, 2000) is a reliable (0.94) measure of self-efficacy relating to mental health, with good internal consistency and test-retest reliability (Kaczinski, Resnick, & Rosenheck, 2009), recommended for people experiencing psychosis (Castelein, van der Gaag, Bruggeman, van Busschbach, & Wiersma, 2008). This scale focuses on optimism, coping and advocacy unrelated to psychosis and provides a generic measure of change in line with recovery and empowerment focussed approaches.
3. In order to balance generic measures with specific changes in positive symptoms the Psychotic Symptoms Rating Scale (PSYRATS; Haddock, McCarron, et al., 1999) was also used. This measure has shown good internal consistency and high inter-rater reliability (0.9) in samples with chronic (Haddock, McCarron, et al., 1999) and first episode symptoms (Drake, Haddock, Tarrier, Bentall, & Lewis, 2007). We simplified the hallucinations and delusions subscales to make them suitable for use as self-report measures (renamed separately as the Voices and Beliefs questionnaires). Participants only completed these scales if they were currently experiencing the relevant symptoms.
4. Satisfaction questionnaire (Phillips et al., unpublished). Eight open questions examining which aspects of the group participants found useful and had the greatest impact on reducing stigma.

Procedure

Following ethical approval eligible participants were identified through discussion with multidisciplinary teams and given verbal and written information about the study. Willing participants signed a consent form and completed the baseline measures at the start of the first group session or individually for TAU participants (Time 1). Groups consisted of four 1.5 h sessions, which took place over four consecutive weeks. Groups were co-facilitated by a trainee clinical psychologist (MO), a service user with personal experience of psychosis and recovery, and a member of the ward staff. All group facilitators received training and regular group supervision from a qualified clinical psychologist (MS). Initially only two wards planned to participate in the study so groups were run consecutively on ward A for six months, collecting TAU data from ward D, before switching to running groups on ward D and using ward A as the TAU ward. Two additional wards (B and C) were included once the study started but C only took part in the intervention condition. Groups were closed and limited to eight participants. Participants who were discharged were invited back to attend as outpatients.

At the end of the last session (or after 4 weeks for TAU participants) the main outcome measures were repeated and CBTp participants also completed the satisfaction questionnaire (Time 2). In order to try and follow up participants who dropped out those who had been discharged during the study period were sent the measures with postage paid envelopes and people who were not discharged were approached in person and asked if they would complete the measures. All participants were followed up again after another month and asked to repeat the main outcome measures (Time 3). All participants who completed the outcome measures at Time 2 received a £5 voucher as an incentive; if they completed the measures again at Time 3 they received another £5 voucher.

Analysis

Quantitative

We conducted two sets of quantitative analysis in order to try and gain the best understanding of our findings. In order to complete an intention-to-treat analysis multilevel linear modelling was

Table 2
Participant characteristics for categorical variables by group with mean comparison.

Characteristic		CBTp group		TAU group		Significance test	
		n	%	n	%	χ^2 (df)	*p*
Gender	Male	42	59.2	38	90.5	12.52 (1)	0.00[a]
	Female	29	40.8	4	9.5		
Ethnicity	White British	64	90.1	34	81	5.83 (6)	0.43
	Any other ethnicity	7	9.9	8	19		
Type of admission	Informal	39	59.9	27	64.3	3.19 (4)	0.53
	Section 2	9	12.7	4	9.5		
	Section 3	12	16.9	8	19		
	Informal to Section 3	7	9.9	1	2.4		
	Section 2 to Section 3	4	5.6	2	4.8		
Diagnosis	Mental & behavioural disorder due to alcohol, drug misuse or neurocognitive disorder	5	7	3	7.1	6.20 (20)	0.10
	Schizophrenia, delusional, acute & transient, psychotic & schizoaffective disorders	35	49.3	20	47.6		
	Mood disorder, depression, recurrent depression & BPAD	22	31	11	26.2		
	Anxiety, OCD, adjustment disorder, PTSD & Aspergers	5	7	1	2.4		
	Personality disorders	4	5.6	7	16.7		
Symptoms on admission	Hallucinations	11	15.5	7	16.7	9.80 (7)	0.20
	Delusions	3	4.2	4	9.5		
	Paranoia	4	5.6	4	9.5		
	Severe intrusive thoughts (often suicidal)	7	9.9	0	0		
	Hallucinations & delusions	6	8.5	3	7.1		
	Hallucinations & paranoia	11	15.5	7	16.7		
	Delusions & paranoia	19	26.8	8	19		
	Hallucinations, delusions & paranoia	10	14.1	9	21.4		

[a] Significant at the 0.05 level (2 tailed).

Table 3
Number of participants recruited on each ward by group.

Ward	Total participants	Intervention group	Control group	Percentage of sample
A	51	24	27	45.1
B	16	10	6	14.2
C	20	20	0	17.7
D	26	17	9	23.0
Total	113	71	42	100.0

used to account for the interdependence of data due to contextual factors, and variability in the relationships between predictor variables and outcomes in different groups (Field, 2012). This included the entire data set (including missing data) and nested participants within cohorts, according to ward (A,B,C or D) and group (CBTp or control). The data from each participant was compared at each time point (pre, post, and follow up) across each of the four measures. In addition, we completed a smaller as-treated complete-case analysis, using a mixed between-within subjects analysis of variance (ANOVA) to test for differences between the two groups on each measure, excluding missing data (Field, 2012). In order to complete a robust ANOVA the data must meet assumptions for parametricity including; interval scaling data, random sampling, independence of observations, normality of distribution and homogeneity of variance (Pallant, 2007). In our study although CBTp participants took part in groups they completed the outcome measures independently and the selection of participants was consecutive so we have tentatively assumed these assumptions were met. In order to test for normality of distribution we examined histograms with distribution curves and assessed the skewness, kurtosis & Shapiro–Wilk values and to test for homogeneity of variance we used Levene's statistic.

These explorations showed that across both groups, none of the demographic variables met the assumptions for parametricity, except age. With regard to the outcome measures, across all three time points (pre, post and follow up); the CORE and MHCS measures did meet the assumptions for parametricity but the Voices and Beliefs measures did not. In addition, Maunchley's test was used to check for sphericity in the differences between variances in the outcomes measures and found to be non-significant (CORE: MW = 0.90, $p > 0.05$; MHCS: MW = 0.91, $p > 0.05$). Therefore, results from the ANOVA analysis must be treated tentatively.

Qualitative

The free text responses to the satisfaction questionnaire were transcribed as written. As most responses were brief the data from all questions was pooled in order to complete a qualitative content analysis (Bryman, 2008). This involved reading the data several

Table 4
Comparing distress and confidence scores between groups.

Measure	Intervention group (n = 20)		Control group (n = 11)		Significance			Effect size
	Mean	SD	Mean	SD	Time	F	p	Partial eta squared
CORE Time 1	23.05	9.38	21.18	6.94	T1-T3	13.94	0.01*	0.33
CORE Time 2	18.30	9.18	13.27	8.03	T2-T3	0.76	0.39	0.03
CORE Time 3	13.30	9.31	15.36	9.56				
MHCS Time 1	46.85	22.75	57.00	18.67	T1-T3	2.31	0.14	0.07
MHCS Time 2	52.80	22.59	62.82	12.73	T2-T3	0.00	0.95	0.00
MHCS Time 3	61.35	19.71	53.91	17.47				

times and breaking down sections of text into single words or phrases relating to participants' experiences of the groups, and then systematically searching all other responses for the same words or phrases. These words or phrases were collected into descriptive categories also known as codes. These codes were then clustered together with others that described similar content to produce super-ordinate themes.

Results

Sample demographics

A total of 113 participants were recruited. There were 80 men and 33 women, age ranged between 19 and 66 years (M = 40.8, SD = 12.2). The majority were White British (n = 98; 86.7%) and from socially deprived areas; with 67.6% of the sample (n = 74) residing within the 10% most deprived areas of England (Community & Local Government, 2011) see Table 1. The sample showed considerable heterogeneity on a range of factors. The most common primary diagnosis was schizophrenia (n = 38, 34%) although there was a considerable range of diagnoses. Therefore, in keeping with dimensional approaches towards diagnosis, symptoms on admission were also recorded to ensure only those with relevant experiences were included in the study, most common were delusions and paranoia (n = 27, 23%) see Table 2. The average length of admission was 89 days (SD = 101.5; range 5–660), and the average length of admission before participating in the study was 38 days (SD = 69.2, range 0–505). The majority of our sample were admitted voluntarily (n = 66, 58.4%). To assess chronicity we recorded the number of previous inpatient admissions which ranged from 0 to 17 (M = 4.27, SD = 3.97).

Statistical analyses[1] confirmed that there were no significant differences between the intervention and control groups with regards to; age, ethnicity, diagnosis, symptoms on admission, length of admission, number of admissions or type of admission (i.e. voluntary or involuntary). However, there were some significant differences between the two groups due to unavoidable difficulties in the data collection procedure. The intervention group was bigger (n = 71) than the control group (n = 42), and the number of participants recruited from the different wards were not equally distributed (χ^2 (3) = 23.89, $p < 0.001$) as shown in Table 3. As a result there were also significant differences between the two groups regarding gender (χ^2 (1) = 12.52, $p < 0.001$), with fewer women in the control group.

There were also significantly more people in the control group who were from more deprived backgrounds (Mean Rank = 46.46, n = 39) than those in the intervention group (Mean Rank = 59.04, n = 69). However, there were no significant differences between the two groups on any of the baseline measures, although there was a trend towards higher levels of symptoms at baseline in the intervention group (see Table 4).

Exploring drop out

As expected in any study based in acute inpatient settings the attrition rate was high (Fig. 1). Forty six participants (41%) were discharged during the study period of four weeks, although there were no significant differences between groups on this factor (χ^2 (1) = 1.33, $p = 0.25$). A total of 69 people (61%) had been discharged by the follow up period, and there was a significant difference between groups as more people in the control group had been discharged in the follow up period (χ^2 (1) = 4.57, $p = 0.03$). Overall, 56 people (49.5%) dropped out[2] during the study period (Time 1 to

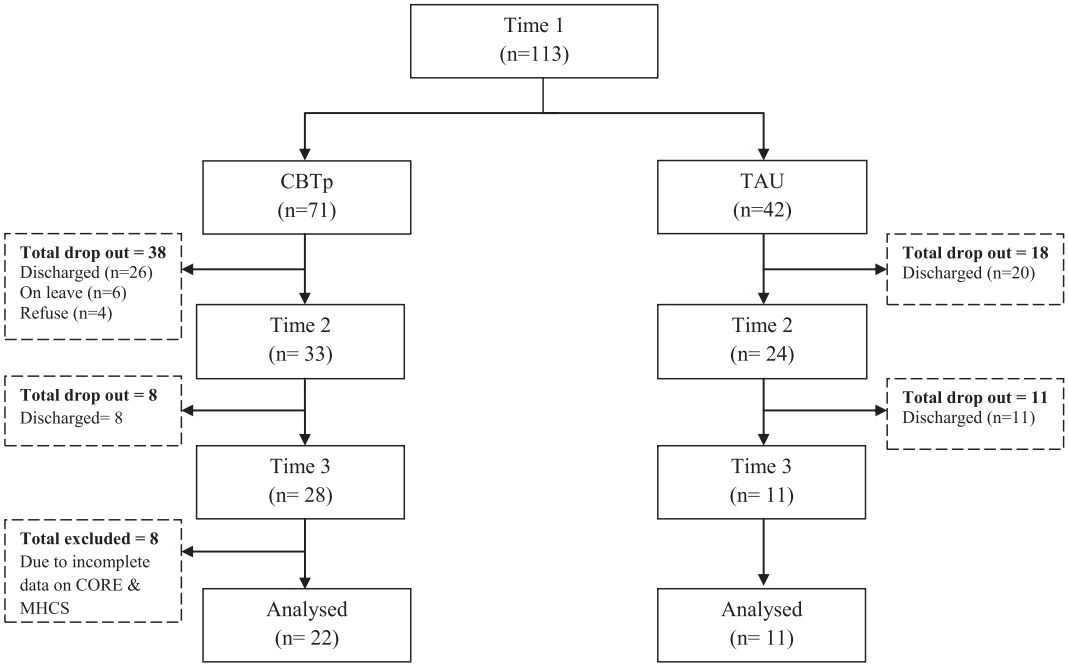

Fig. 1. Flow diagram showing drop out over the study period.

[1] Scaled variables which met the assumptions for parametricity were tested using t-test and those which did not were tested using Mann–Whitney. Ordinal data were tested using Chi-Squared or loglinear analysis if they had more than two categories per variable.

[2] Based on the number of people who completed the CORE-10 as this was the most frequently completed measure.

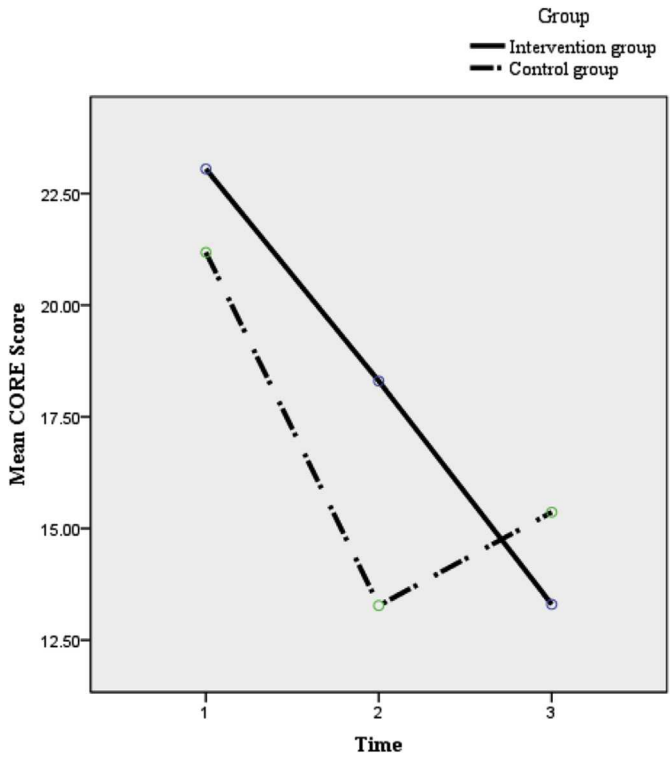

Fig. 2. Compares mean CORE scores over time in the control and intervention groups.

Time 2) and a further 15 dropped out in the follow up period (26.3%) (Time 2 to Time 3) giving an overall drop out rate (Time 1 to Time 3) of 62.8%. There were no significant differences between dropout rates in the intervention and control groups (χ^2 (1) = 1.20, $p = 0.27$). As would be expected, dropout during the study period

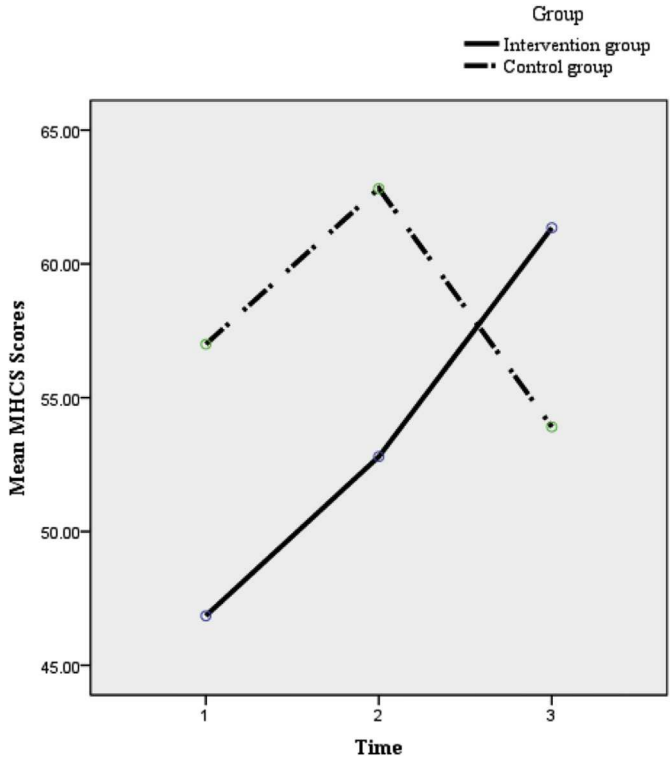

Fig. 3. Compares mean MHCS scores over time in the control and intervention groups.

Table 5
Number of completed outcome measures at each time point.

Measure	Time 1 (n)		Time 2 (n)		Time 3 (n)	
	Completed	Missing	Completed	Missing	Completed	Missing
CORE	113 (100%)	0 (0%)	57 (50.4%)	56 (49.6%)	39 (34.5%)	74 (65.5%)
MHCS	106 (93.8%)	7 (6.2%)	56 (49.6%)	57 (50.4%)	38 (33.6%)	75 (66.4%)
VOICES	52 (46%)	61 (54%)	26 (23%)	87 (77%)	23 (20.4%)	90 (79.6%)
BELIEFS	54 (47.8%)	59 (52.2%)	54 (47.8%)	59 (52.2%)	30 (26.5%)	83 (73.5%)

(Time 1 to Time 2) was found to be significantly correlated with discharge from hospital (S = −0.44, n = 113, $p < 0.01$).

Comparing differences between groups

The intention-to-treat analysis included data sets from all 113 participants who participated at Time 1 (71 CBTp and 42 TAU), and included data at all time points (pre, post, follow up), including missing data. Multilevel linear regression revealed that time was the only factor which demonstrated any predictive effect on outcome measures. Time was found to significantly predict reductions in experiences of distress (f(6) = 20.74, $p < 0.001$), hearing voices (f(6) = 7.03, $p < 0.01$), and unusual beliefs (f(6) = 15.81, $p < 0.001$). However, time did not significantly predict increased confidence ($p = 0.11$). No other single factor significantly predicted change on the outcome measures; including group, ward, gender, time of discharge or number of group sessions attended. But the interaction of group and time also significantly predicted reduction in distress on the CORE (f(7) = 16.75, $p < 0.001$), although not on the other outcome measures. Comparison of the two models calculated using the log-likelihood measurement of error, suggests that although the quadratic model (time and group) did not account for change in the outcome data significantly more than time alone, it suggested a positive trend which did not reach significance ($\chi^2(1) = 1.72$). Given the high drop out rate there was a large amount of missing data in the multilevel regression which makes interpretation of the findings more complex. The data were additionally analysed as-treated, in order to allow for comparison with the initial findings.

As there were no significant differences in drop out between the intervention and control groups the data were analysed using complete-case analysis in order to simplify the analysis and reduce bias as much as possible (Myers, 2000). This led to a reduction in the sample size as only cases which had complete data sets on the CORE or MHCS at all time points were included, resulting in 33 participants (20 CBTp and 11 TAU). A mixed between-within subjects ANOVA was used to assess the impact of the group intervention on participants' distress and confidence scores, comparing pre-intervention, post-intervention and follow up. Overall, combining changes across both the control and intervention group, there was no significant main effect of group using Pillai's Trace ($p = 0.80$). But there was a significant main effect of time (V = 0.38, f(4,26) = 4.04, $p = 0.01$) with a medium (0.38) effect size (Cohen, 1988), and a significant interaction between group and time (V = 0.33, f(4,26) = 3.19, $p = 0.03$), also with a medium effect size (0.33). This suggests that participants in the control and intervention groups experienced different patterns of change during the study across both outcome measures.

Within groups there was a significant effect of time on CORE scores, between baseline and follow up (f(1, 29) = 13.94, $p = 0.01$) with a medium effect size (0.33), but not between post-intervention and follow up ($p = 0.39$). The equivalent effect of time on MHCS scores was not significant at either baseline to follow

up ($p = 0.14$) or post-intervention to follow up ($p = 0.95$). See Table 4.

The interaction between time and group significantly affected distress between post-intervention and follow up ($f(1,29) = 4.54$, $p = 0.04$) with a small effect size (0.14) but not between baseline and follow up ($p = 0.35$). The interaction between time and group had significant effects on confidence at both time points; baseline to follow up ($f(1,29) = 4.50$, $p = 0.03$) and post-intervention to follow up ($f(1, 29) = 8.92$, $p = 0.01$), both had small effect sizes (0.16 and 0.24 respectively) (see Figs. 2 and 3). These effects remained significant after controlling for the identified differences between the two groups (i.e. ward, gender and deprivation).

The Voices and Beliefs measures were analysed separately because they were completed by fewer participants than the CORE and MHCS (see Table 5 for comparisons) and because they did not meet the assumptions for parametricity. Attempts to transform the data or to use last observation carried forward (LOCF) methods did not improve the normality of distribution so it was not possible to complete a mixed between-within subjects ANOVA for these outcome measures.

Unfortunately, there is no non-parametric equivalent to a mixed between-within subjects ANOVA (Field, 2012). Instead independent samples Mann Whitney U tests were used to separately compare scores on the Voices and Beliefs measures at each time point. All of these comparisons revealed non-significant differences ($p > 0.05$). In addition, related samples Friedman's ANOVAs revealed no significant differences between scores on either measure at each of the time points ($p > 0.05$) within the same group. However, mean scores on these measures did show trends in the right direction, showing that symptoms decreased over time, which appear more consistent in the intervention group.

Qualitative analysis

Twenty six participants who finished the group intervention (46%) completed satisfaction questionnaires. Initially the content analysis produced 30 descriptive codes which were collapsed into four super-ordinate themes. Overall, 13 participants gave purely positive comments, which contained no negative critique or ambivalence. Seven participants made overwhelmingly positive comments but gave some critique in response to question two 'what was least helpful about the group'. Two participants' responses were ambivalent, containing equal numbers of positive and negative statements, and two more were not possible to interpret in this way, as they did not comment on how they felt. The analysis is described below under the headings of the super-ordinate themes. Comments made by only one person are given in quotation marks; if the same comment was made by others the number of people the data relates to is given in brackets.

Changes in emotional states

The majority of participants described feeling more "positive" (6), "confident" (7) or feeling "better" (2) as a result of the group. Other individuals described feeling "happier", "more settled" or "cool, calm and collected". One person said they felt "less frightened" of their feelings and others referred to less fear of "prejudice". The majority of participants also mentioned how much they valued "talking" to others (8), or "listening to other people" (6), and that this helped them feel "less isolated" and "alone" (7), reminding them they were "not the only one". Two people also described a sense of comfort in being with others, one said "all of us close together, going through our experiences". Only three participants described negative feelings in response to question two. One said "my negativity" was unhelpful and we can interpret that another participant felt frustrated when they said "not being able to express myself" was least helpful. One participant also described how "confronting my thoughts and fears made me anxious and tense".

Learning coping techniques

Many participants made reference to having learnt strategies to help them "cope" or "deal with" (10) their experiences. Participants mentioned different techniques or "tools" that they had found useful, including: "relaxation" or "breathing" techniques (7); learning to "control", "challenge" or "confront" their voices or beliefs (3); "mindfulness" (2); "breaking things down", and the visual aid of "the recovery steps". Others felt that "talking" or "sharing" (5) and "asking for help" were coping strategies in themselves. One participant mentioned that they "did not always feel the benefit" of the coping strategies offered in session.

Changes in understanding, attitudes and thinking

Encouragingly, numerous participants made comments which indicated some positive change in attitude or thinking, describing feeling more "hopeful" about the future (3), or the possibility of change (2). Several made statements which demonstrated that they had learnt to understand their experiences in a different way, such as "I am not my thoughts", "the voices and thoughts weren't real" or "they are just voices and just thoughts". Whilst others specifically mentioned that their "understanding" or "insight" (3) had improved. Two people also commented that they were less self-critical and had learnt it was "not my fault" and "don't blame myself". In contrast, six people said they had not experienced any change in their thinking or how they view themselves (questions 3–5) and one person said the group had "made me realise I am not as better as I thought I was", although this does reflect an improvement in insight. However, all of these six participants also described at least one positive aspect of the group including: feeling "more hopeful", "more confident", appreciating the "chance to talk", "the advice", or hearing about "other people's experiences" and "not being the only one".

Effects on participation in the group sessions

The satisfaction questionnaire asked for specific feedback about the least helpful aspects of the group. Four people did not give any response and four indicated that it was all helpful. Some of the criticisms related to other group participants including; "people rambling" or "walking in and out", needing more "patient participation" or comments about specific individuals. Other criticisms generally related to individual factors, such as; "my negativity", "not being able to express myself" or that thinking "made me anxious and tense". Two people also commented that "hearing voices" was the least helpful thing about the group. There were also comments about the "time constraints" (3) of the group overall (too short) and the sessions (too long). One person commented the medication made them "sleepy" and another that they struggled following ECT which had "resulted in some memory loss". However, many people made positive comments about what factors encouraged them to participate in the groups. As described above, most commonly people valued "talking to" and "hearing from" others. But in addition participants made positive comments about: the service user co-facilitators (2), the "tutors", that the groups were "friendly", "nice" "pleasant", "good" or "worthwhile" (6), "helpful", "useful" or "interesting" (6), or that they had enjoyed attending (4).

Discussion

The quantitative findings suggest some encouraging effects regarding the interaction between time and group attendance and are discussed in relation to the original hypotheses:

1. Participants who received group CBTp showed greater reduction in distress at follow up than those receiving TAU, although the difference between the groups was not significant overall. Therefore, the findings partially support our first hypothesis and indicate a potential continuation effect of CBTp in reducing distress.
2. Participants who received group CBTp showed significantly improved confidence over time from baseline to post-intervention, and at follow up, compared to those receiving TAU. This change could not be attributed to time alone and therefore supports our second hypothesis.
3. Our findings are inconclusive with regards to changes in positive symptoms of psychosis, as insufficient data were collected to allow for a fair comparison between groups. However, the findings suggest a trend for decreasing symptoms over time, and suggest a more consistent reduction in symptoms in the intervention group.

Our qualitative findings add weight to the quantitative conclusions and show support particularly for hypothesis two. Many participants who attended the groups reported improvements, including feeling more positive, confident and hopeful about the future. Participants described learning coping strategies which may help them, and showed some change in ways of understanding their experiences, which we could interpret as contributing to feelings of improved confidence.

Overall, our findings appear consistent with recovery models of psychosis, as the groups more clearly increased confidence than reduced symptoms. This suggests that group participants were learning to cope with, and accept, difficult and frightening experiences, rather than attempting to reduce their occurrence. Our finding of a maintenance effect of the groups in reducing distress over time suggests there could be an interaction between improving confidence and providing psychoeducation or therapeutic group factors (such as universality, catharsis, etc) on reducing distress. It seems likely that the group, through its approach of normalisation, support and skills teaching, allows participants to gain confidence and a 'recovery framework' that TAU participants are less able to access. Although we also acknowledge the possibility that non-specific therapeutic group factors could account for reductions in distress over time.

Our findings are in keeping with similar studies which have found reductions in distress and general psychopathology across both intervention and comparison groups (Bechdolf et al., 2004; Bechdolf, Kohn, Knost, Pukrop & Klosterkotter, 2005; Pinkham et al. 2004). It is interesting to note that in our sample there was a significant correlation between distress and type of admission to hospital. Those participants admitted informally who were later changed to involuntary detention (Section 3) showed the highest levels of distress which fits with evidence that for some admission to hospital can be a traumatic experience in itself (Berry, Ford, Jellicoe-Jones, & Haddock, 2013). Our findings of medium effect sizes (Cohen, 1988) regarding reducing distress over time are comparable to reviews of studies of CBTp in the community (Wykes et al., 2008). Although, given the crisis nature of hospital admission it is expected that distress will decrease over time anyway, our findings suggest that a group intervention during the crisis period can help people to maintain improvements in distress after the crisis has eased, and potentially during discharge from hospital. We can hypothesise that attending the group gave service users the skills on discharge to continue to manage anomalous experiences, which often return when service users are exposed to stressful living or family environments.

Our findings regarding improved confidence or self-efficacy as a result of the group intervention replicate the tentative positive findings reported by Clarke and colleagues (Durrant et al., 2007), and are supported by studies which have shown improvements in self-esteem (Aho-Mustonen, Miettinen, Koivisto, Timonen, & Raty, 2008; Aho-Mustonen et al., 2011) and improved quality of life (Bechdolf et al., 2010). Our qualitative findings are also consistent with other research which reports generally positive findings from satisfaction questions (Ruane & Daddi, 2011) and informal feedback (McInnis, Sellwood, & Jones, 2006) that participants value groups and feel they benefit from them (Chadwick, Sambrooke, Rasch & Davies, 2000). In particular, the feeling of "I'm not alone" reported by participants in our study is congruent with the previous study (Durrant et al., 2007) and the wider literature regarding groups outside of inpatient care; that universality is one of the most helpful and supportive aspects of group interventions (Chadwick, Lee, et al., 2000; Chadwick, Sambrooke, et al., 2000).

Limitations and feasibility

Given the considerable metholodological limitations, to the best of our knowledge this is the largest controlled study with inpatients comparing brief group CBTp with treatment as usual. However, the study has a number of limitations most notably the high drop out rate, which limits the power of the statistically significant findings. We anticipated that dropout would be high due to the chaotic nature of the inpatient ward setting that is not designed to provide long term care. Despite the use of incentives to encourage continued participation in the study our dropout rate was higher than that reported by other similar studies (Bechdolf et al., 2010). Although, other studies have often been carried out in secure settings (Aho-Mustonen et al., 2011) in which people are less quickly discharged, or have employed methods to encourage participation, such as follow up phone calls (Hagen, Nordahl, & Grawe, 2005) which we were not able to utilise. However, our dropout rate is comparable to that of studies in acute inpatient settings in other countries (Eichler et al., 2008). It was not possible to randomize participants due to pragmatic issues because the therapy groups were run on the wards in the patient lounge and were therefore visible to all patients on the ward, therefore participants could only be included in the control arm on wards which were not running the group. It was not possible to have equal numbers of wards providing control and intervention groups within the data collection period due to the cumulative effect of the study gradually being adopted by more wards over time. Generally ward staff were keen to be involved in the intervention groups rather than the control arm of the study. These factors limit the generalisability of findings but also reflect the reality of conducting research in inpatient settings. Resource and time limitations also meant that it was not possible to blind the researcher collecting the outcome measures, run a longer group intervention with more than four sessions, run the sessions more frequently than once a week, or provide a longer follow up period which would be helpful in assessing the longevity of change. Unfortunately, due to the considerable methodological limitations and high attrition rates we acknowledge that the study findings would be considered low quality evidence when assessed using guidelines intended for clinical trials, and therefore must be treated as interesting but not definitive at present.

However, what this study has shown is that it is feasible to introduce and evaluate brief group therapy on inpatients wards, specifically for people experiencing psychosis, regardless of diagnosis. We did not encounter any adverse events during the study,

and whilst closed groups were challenging to manage at times on the busy inpatient ward, they were not impossible. In fact closed groups added to a sense of group cohesiveness which many participants valued highly. Group members particularly valued input from the service user facilitators who provided a hopeful and real message about the possibility of change. If these groups were only available to outpatients then at times of crisis service users experiencing psychosis would miss the opportunity to receive normalising, optimistic approaches towards recovery when arguably they might need it most. Hill et al. (2009) discuss the wider impact that providing CBT groups on inpatient wards can have on institutions, by encouraging co-working, staff development, the visibility of cognitive therapy and increasing awareness of normalising, recovery focussed approaches. In addition, groups provide ward staff, who commonly see service users who have relapsed and been readmitted, with optimism and increased understanding of recovery from service user facilitators. Whilst none of the above factors are specific to CBTp groups, the tendency is often for people experiencing psychosis not to be referred for therapy due to a lack of awareness of the potential change; but specific groups for this population demonstrate a different approach.

However, further research is necessary which addresses the limitations of this study. A larger project with more resources could increase the sample size by carrying out the project over a longer period of time, across a greater number of inpatient units and employ strategies to maximise retention of participants. A larger sample size would also allow for further exploration of drop out and potentially allow us to predict who might be most at risk of dropping out and plan additional interventions according to the needs of these individuals. A larger sample might also allow for matched controls to address issues with interdependence between groups. In line with feedback from several participants future groups could run sessions more frequently on the ward (2–3 times per week) and reduce the length of individual sessions from 1.5 h to perhaps 45 min or an hour to also try and increase retention and maximise learning in each session. Increasing the follow up period would also be advantageous and allow for a better assessment of lasting change. An interesting avenue for further research might also be exploratory interviews with participants from both groups about what aspects of their treatment they find most beneficial. This may help us to learn whether the content of the groups is advantageous over and above non-specific group factors or the therapeutic effects of being hospital.

Clinical implications

There is a call for more therapeutic opportunities to be available for people admitted to hospital from service user initiatives (James, 2001) and government guidelines (Bright, 2006). This study has shown that brief CBTp for inpatients may improve confidence and reduce distress over time, is feasible, acceptable and valued by service users and ward staff. Groups offer a way to honour peoples' experiences, facilitate engagement in therapy, and provide a normalising, optimistic and hopeful message at a time of crisis; focused on promoting recovery, emphasising hope, optimism, personal meaning and potential (Roberts & Wolfson, 2004). Brief CBTp groups run by novice therapists, recovered service users and ward staff (with regular supervision from experienced therapists) appear to offer a realistic, economical way of providing basic therapeutic input to people in hospital who might otherwise not access support that specifically addresses their experience of psychosis. It also has the potential to increase engagement with services in the community if service users have had a positive experience of group therapy while in hospital and could even be tailored as a possible referral pathway to facilitate ongoing engagement. There is also the potential for using brief group therapy as a way of determining suitability for further therapeutic interventions which could include engaging with families and wider support networks.

Conflict of interest

The authors declare no conflict of interest.

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