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Brief Coping Strategy Enhancement for Distressing Voices: an Evaluation in Routine Clinical Practice

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Background: Hearing voices can be a common and distressing experience. Psychological treatment in the form of cognitive behavioural therapy for psychosis (CBTp) is effective, but is rarely available to patients. The barriers to increasing access include a lack of time for clinicians to deliver therapy. Emerging evidence suggests that CBTp delivered in brief forms can be effective and offer one solution to increasing access. **Aims:** We adapted an existing form of CBTp, coping strategy enhancement (CSE), to focus specifically on distressing voices in a brief format. This intervention was evaluated within an uncontrolled study conducted in routine clinical practice. **Method:** This was a service evaluation comparing pre–post outcomes in patients who had completed CSE over four sessions within a specialist out-patient service within NHS Mental Health Services. The primary outcome was the distress scale of the Psychotic Symptoms Rating Scale – Auditory Hallucinations (PSYRATS-AH). **Results:** Data were available from 101 patients who had completed therapy. A reduction approaching clinical

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importance was found on the PSYRATS distress scale post-therapy when compared with the baseline. **Conclusions:** The findings from this study suggest that CSE, as a focused and brief form of CBTp, can be effective in the treatment of distressing voices within routine clinical practice. Within the context of the limitations of this study, brief CSE may best be viewed as the beginning of a therapeutic conversation and a low-intensity intervention in a stepped approach to the treatment of distressing voices.

Keywords: voice hearing, auditory hallucinations, cognitive behaviour therapy, coping, clinical practice

Introduction

The experience of hearing voices is reported by 70% of patients with a diagnosis of schizophrenia spectrum disorder (Thomas et al., 2007) and is also common in other psychiatric diagnoses, e.g. borderline personality disorder (Sommer et al., 2012). This experience can have a devastating effect on patients' lives due to high levels of distress (Birchwood and Chadwick, 1997), depression (Birchwood et al., 2004) and an increased risk of suicide (Kjelby et al., 2015).

Cognitive behavioural therapy for psychosis (CBTp) for the treatment of the 'positive symptoms' of schizophrenia, including distressing voices, is recommended in international best practice guidelines (Kreyenbuhl et al., 2010; National Collaborating Centre for Mental Health, 2014). CBTp has beneficial effects on voices with a small–medium effect size (Hedges' $g = 0.44$) (van der Gaag et al., 2014). However, there are severe implementation challenges (van der Gaag, 2014) and access in the National Health Service in the UK is extremely limited with only 10% of patients who could benefit getting access to the therapy (Schizophrenia Commission, 2012). The barriers to increasing access include a lack of time for clinicians to deliver therapy (Haddock et al., 2014). Coping strategy enhancement (CSE; Tarrier, 1992) is a form of CBTp that has the potential to increase access due to its brevity. Furthermore, as a practical therapy focused on behaviour change, it may be deliverable by a wide range of clinicians including those with limited therapy experience.

The majority of hearers report one or more strategies used to 'cope' with voices (Farhall et al., 2007), suggesting most take actions of their own volition to cope with voices they appraise as a threat or challenge. Descriptively, these coping actions can be grouped (Tsai and Chen, 2006) into domains of: *doing something* (behavioural), e.g. such as a chore; *thinking differently* (cognitive), e.g. telling myself not to worry; and *changing sensations* (physiological), e.g. having a shower. Most strategies are not specific to one's culture, although there are some reported cross-cultural differences in emphasis (Loue and Sajatovic, 2008).

Given the range of possible strategies for coping with voices, the hearer's view of what works for them is a key perspective that may facilitate therapeutic engagement. This was the rationale of Tarrier and colleagues when they developed CSE. This approach was premised upon a functional analytic model in which triggers and reactions to psychotic experiences would influence the probability of their re-occurrence. The assumption was that patients had an existing repertoire of helpful coping strategies (i.e. strategies that targeted triggers and reactions); however, the effectiveness of them was limited by their inconsistent and non-strategic application.

CSE was developed as a 10-session therapy for the broad range of psychotic symptoms, and participants reported reductions in symptom severity within case studies (e.g. Tarrier et al., 1990). Findings from a randomized controlled trial (RCT) also showed improvements on

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measures of the number and severity of psychotic symptoms, but a more detailed analysis of separate symptoms suggested that this improvement was more evident for delusions than for voices (Tarrier et al., 1993). The authors suggest that this differential symptom response may have been attributable to issues of measurement, and they reported no evidence that voices responded less well when CSE was included as part of an integrated CBT package in a subsequent RCT (Tarrier et al., 2001). CSE has not subsequently been robustly evaluated as a stand-alone intervention for psychotic symptoms, leaving these issues unexplored. In the light of recent evidence suggesting that the effects of CBTp can be enhanced when focused upon a single symptom (Mehl et al., 2015), what might be the effects of CSE targeted exclusively upon voices?

We adapted CSE into a brief (four-session) intervention targeted specifically at distressing voices that could be delivered by a range of mental health practitioners as part of routine clinical practice. Voice-related distress was chosen as the primary outcome as it is the focus of the cognitive model of voices (Chadwick et al., 1996), is recommended as a therapeutic target by NICE (National Collaborating Centre for Mental Health, 2014), and is important to patients (Greenwood et al., 2010; Meddings and Perkins, 2002). This was an initial uncontrolled evaluation investigating the hypothesis that brief CSE would lead to a post-treatment reduction in voice-related distress.

Method

Study design

This was a service evaluation comparing pre–post outcomes in patients who had completed all four CSE sessions. Routine clinical data were collected at the baseline assessment (pre-CSE) and at the post-CSE assessment by research assistants not involved in therapy delivery. As this was a service evaluation analysing data from routine clinical practice, no ethics approval was required (Department of Health, 2005).

Patients were receiving a secondary care service within a single NHS Mental Health Trust in Sussex, UK. They were referred to the Voices Clinic, a specialist out-patient service for people distressed by hearing voices, irrespective of diagnosis. Eligibility criteria for the Voices Clinic required that patients scored at least 4 on the P3 item ('hallucinatory behaviour – hallucinations occur frequently but not continuously, and the patient's thinking and behaviour are affected only to a minor extent') of the Positive and Negative Symptom Scale (PANSS; Kay et al., 1987) and at least 3 on one of the distress items ('intensity of distress' and 'amount of distress') of the Psychotic Symptoms Rating Scale – Auditory Hallucinations Scale (PSYRATS-AH; Haddock et al., 1999). Diagnosis was not an inclusion criterion. Between May 2014 and February 2017, 158 patients were offered CSE therapy and at the time of this report: three (2%) were waiting for therapy to begin, five (3%) were currently receiving therapy, and 37 (23%) had dropped out. A total of 113 (72%) patients completed therapy, of whom 101 (64%) had also completed the post-therapy assessment.

Intervention

The CSE treatment consisted of a maximum of four hours (sessions of up to one hour, offered approximately weekly) of individual therapy, guided by a therapy protocol and patient workbook (copies available from the first author on request):

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Session 1: a semi-structured interview (adapted from the Antecedent and Coping Interview; Tarrier et al., 1990) was used to identify the antecedents to voice activity, and the patient's emotional and behavioural responses to the voices. This stimulated a process of identifying coping strategies and evaluating their effectiveness.

Session 2: an existing coping strategy was collaboratively selected and considered in detail. Discussions focused on how the strategy could be modified and used differently (more or less often). A plan was agreed to implement the strategy between sessions.

Session 3: implementation of the modified coping strategy was reviewed. Discussions focused on the enablers and barriers to implementation, and the effectiveness of the strategy. This strategy could be further modified to enhance effectiveness, or another strategy could be selected and modified. A plan was agreed to implement the strategy between sessions.

Session 4: implementation of the modified coping strategy was reviewed, and any required modifications were agreed. Plans were discussed for continued implementation post-therapy. Discussions explored any learning from therapy in relation to both self and voices, and the implications of this learning for living well with voices. Any needs for further therapy were discussed.

Therapy was provided by clinicians with varying experience of delivering therapy to people distressed by hearing voices. There were 26 therapists in total: 34 (34%) patients were seen by a clinical psychologist; 36 (36%) by a clinical/counselling psychology trainee; 28 (28%) by a mental health nurse or occupational therapist; and 3 (3%) by a CBT therapist. Therapists were taught to deliver CSE during a 90-minute training session facilitated the by the first author who also provided monthly supervision.

All patients were receiving treatment-as-usual from their mental health teams during the course of the study. Treatment-as-usual consisted of regular out-patient appointments with a consultant psychiatrist, psychotropic medication and regular contact with clinical care team members.

Assessment and measures

Patients were assessed by a research assistant not involved in delivering therapy (in order to reduce risk of bias) at two time points: (1) baseline – within four weeks before starting CSE; and (2) post-therapy – within four weeks of finishing CSE. Baseline assessments included the collection of demographic information. Diagnostic information was verified by the treating psychiatrist. The study used the following clinical outcomes:

Primary clinical outcome

Psychotic Symptoms Rating Scale-Auditory Hallucinations (PSYRATS-AH): an 11-item rating scale designed to measure the severity of different dimensions of voice hearing. Each item is rated 0–4, with higher scores indicating more difficulty. The four-factor version of the scale groups the items together as: distress (negative content, distress and control; subscore range 0–20), frequency (frequency, duration and disruption; subscore range 0–12), attribution (location and origin of voices; subscore range 0–8), and loudness (loudness item only; range 0–4) (Woodward et al., 2014). The 5-item distress scale was the primary outcome measure and is reported to be reliable (intraclass correlation coefficient = 0.93).

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The minimally clinically important difference (MCID) can be used as a reference point to help establish whether or not any pre–post treatment change is meaningful or not. A reduction of 3 points on the PSYRATS distress scale can be used as a primary indicator of change for patients. When interpreting the 95% confidence intervals around the pre–post treatment effect size, we are interested in seeing to what extent the true effect could be smaller or larger than the MCID threshold as well as whether it is non-zero.

Secondary clinical outcomes

PSYRATS-AH frequency subscale: described above.

Choice of Outcome in CBT for Psychoses (CHOICE) – short-form: a 12-item form of the 34-item self-report questionnaire developed with patients to assess goals for CBT for psychosis that are relevant to subjective recovery (Greenwood et al., 2010). Eleven items are related to the therapy to create a severity score and one item is a free text item where respondents can insert their personal goal. All items are rated by patients on a 0–10 scale (0 = worst, 10 = best). The short version was developed specifically for the IAPT-SMI initiative (Jolley et al., 2015), based on the highest loading items from the 34-item measure. Inter-rater, internal and test–retest reliability for the new measure are all good, as is criterion validity (Greenwood et al., 2012).

DASS-21: a 21-item self-report questionnaire measuring depression (seven items), anxiety (seven items) and stress (seven items). Patients rate on a 0–3 scale how much a statement applies to them over the past week (0 = do not apply to me at all, 3 = applies to me very much/most of the time). DASS-21 has excellent internal consistency and concurrent validity (Antony et al., 1998) and adequate construct validity (Henry and Crawford, 2005).

Short Warwick Edinburgh Mental Well-being Scale (SWEMWS): a 7-item self-report questionnaire measuring mental well-being. Patients rate on a 1–5 scale how much a statement (e.g. 'I've been feeling useful') applied to them over the past two weeks (1 = none of the time, 5 = all of the time). SWEMWS has adequate reliability (Stewart-Brown, 2008) and external construct validity (Bartram et al., 2013).

Statistical analysis

Patient characteristics and clinical outcomes were summarized using descriptive statistics: count (*n*), percentage (%), mean (*m*), standard deviation (*SD*) and range. For each clinical outcome measure with <75% missing items, the assumption of missing at random (MAR) was applied and multiple imputation using chained equations (MICE) was used (Eekhout et al., 2013). The imputation model consisted of all pre- and post-items for the measure and patient characteristics (diagnosis, age, gender, employment status, marital status, ethnic group and education) were included as auxiliary variables. Items were treated as continuous variables. Ten imputations were used for each model. For each model, total pre- and post-scores were calculated and then compared using paired sample *t*-tests on $n - 1$ degrees of freedom as the primary analysis where the pre–post difference (m_{diff}) is the unstandardized effect size. The standardized effect size was calculated as:

$$\text{Cohen's } d = t_c[2\,(1 - r)\,/n]^{1/2},$$

where t_c is the test statistic for correlated observations and r is the pre- *vs* post-score correlation (Cohen, 1988; Dunlap et al., 1996). As a secondary analysis, a complete case analysis was

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carried out using paired sample *t*-tests after first being satisfied that the distribution of m_{diff} met the normal criteria (Altman, 1991). If this was violated, bootstrapping was used to estimate the bias corrected accelerated (BCa) 95% confidence intervals. Results from the complete analysis were then compared with the multiple imputation model results as a sensitivity analysis. No attempts were made to correct for multiple testing because a primary outcome had been selected *a priori* and analyses of all other secondary outcomes were considered exploratory. All tests were significant at the 5% level. All analyses were carried out using STATA version 13.

Results

Data from a total of 101 patients who had attended four sessions of CSE and so received the full course of therapy were eligible for inclusion in this service evaluation. By individual outcome, the CHOICE goal rating had the highest level of missing paired data ($n = 37$; 37%); this was due to the assessor not having the baseline goal information at the post-therapy assessment and the client not being able to recall their goal. Levels of missingness of pairs on the other total scores were as follows: SWEMWBS ($n = 21$; 21%), CHOICE Severity ($n = 17$; 17%), Distress ($n = 21$; 21%), Stress ($n = 17$; 17%), Anxiety ($n = 16$; 16%), Depression ($n = 16$; 16%) and Frequency ($n = 17$; 17%). Across all 48 items and 101 patients, there were 4848 data points of which 5.4% were missing at baseline, and 16.3% missing at post-treatment.

The demographic and clinical characteristics of the study sample are given in Table 1. The sample was atypical as a significant majority (59%) of the patients had a non-psychotic disorder and the majority (52%) were female. With respect to other patient characteristics, the sample was similar to other studies of CBTp: mean age of 39 years ranging from 18 to 67 years; 69% unemployed; 60% single; and 97% currently prescribed psychotropic medication. With regard to ethnicity, 87% were White British or White other, which is representative of the geographical region.

Data were imputed for 33 (12.5%) and 52 (6.6%) missing item responses at baseline and post-therapy, respectively. Our primary analysis demonstrated improvement on the PSYRATS distress scale post-therapy when compared with the baseline (see Table 2). The mean change post-therapy was –1.7 (95% CI: –2.80, –0.65) points on the subscale with the MCID of –3 points sitting on the margin of the lower boundary of the 95% confidence interval. This was a small–medium effect size of $d = 0.39$. The results also indicate promising levels of improvement on a number of the secondary outcomes with a large effect for CHOICE goal rating of 2.4 points (95% CI: 1.62, 3.22; $d = 0.74$), and small effects sizes for CHOICE severity mean of 0.7 points (95% CI: 0.36, 0.94; $d = 0.34$), depression of –1.3 (95% CI: –2.24, –0.28; $d = 0.21$), anxiety of –1.1 (95% CI: –1.87, –0.42; $d = 0.22$) and PSYRATS frequency of –0.8 points (95% CI: –1.35, –0.23; $d = 0.31$). These effects were all also statistically significant. The complete case analysis yielded very similar results to the primary analysis (see Table 2 for Cohen's *d*, full results omitted). The two sets of results were compared as a sensitivity analysis and it was noted that: any differences were marginal, effect sizes and corresponding confidence intervals were of the same magnitude and all conclusions were consistent.

Discussion

This study aimed to evaluate the impact of a single-symptom and brief form of CBTp upon the distress related to hearing voices. Most patients completed the full course of therapy, suggesting

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Table 1. Demographic and clinical characteristics of patients

Characteristics	Total $n = 101$
Mean age in years (*SD*, range)	39 (11, 18–67)
Gender*	
Males	48 (48%)
Females	52 (52%)
Ethnicity	
White British or White other	88 (87%)
Black and minority ethnic	13 (13%)
Marital status	
Single	61 (60%)
Married/co-habiting/long-term relationship	26 (26%)
Widowed	4 (4%)
Separated/divorced	10 (10%)
Employment	
Unemployed	70 (69%)
Full-time/part-time paid employment	16 (16%)
Student	6 (6%)
Homemaker	3 (3%)
Other	6 (6%)
Diagnosis	
Non-psychotic disorder	60 (59%)
Psychotic disorder	41 (41%)
Medication*	
Yes	94 (97%)

Percentages are based on all available data for the variable; *data missing for characteristic: gender ($n = 1$); medication ($n = 4$).

that it was acceptable to them and engaging. Statistically significant changes were found for the primary outcome of voice-related distress, albeit with a small–medium effect size, and the lower 95% confidence interval was in line with the minimum clinically important difference. These changes were accompanied by small effect sizes for reductions in secondary measures of emotional distress (anxiety and depression) and voice frequency. Other benefits were noted on a measure of subjective recovery (small effect size), with the greatest benefit reported in relation to the patients' personal goals (a large effect). These findings are encouraging in the context of the real-world clinical environment within which the therapy was delivered by a range of mental health practitioners.

These findings add to the evolving literature suggesting that CBTp can be delivered in a single symptom and mechanism-focused format (Freeman et al., 2015; Van Der Gaag et al., 2012). Whilst brief CSE seeks to adapt coping strategies, any increase in the effectiveness of these strategies may influence the client's appraisals of self and voices, mechanisms that have been shown to be associated with emotional distress (Fannon et al., 2009). Given the key importance of distress reduction to patients (Greenwood et al., 2010; Meddings and Perkins, 2002) and commentators (Kuipers et al., 2016), and evidence that it has not consistently been reduced by CBTp (Mawson et al., 2010), the changes on the primary outcome were encouraging and suggest that researchers should seek to foreground the measurement of voice-related distress in

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Table 2. Pre- and post-treatment descriptive statistics and paired sample *t*-test results with standardized effect sizes

							Paired sample *t*-test results							
	Pre-CSE			Post-CSE										
Outcomes	*n*	*m*	*SD*	*n*	*m*	*SD*	Correlation (*r*)	Unstd effect size (m_{diff})	SE (m_{diff})	m_{diff} 95% CI	*t*-paired (t_c)	*p*-value	Std effect size (*d*)	Complete case Std effect size (*d*)
PSYRATS-AH														
Distress total	93	16.1	3.7	85	14.2	4.6	0.35	–1.73	0.54	–2.8, –0.65	–3.18	0.002	–0.39	–0.37
Frequency total	97	9	2.4	85	8	2.6	0.45	–0.79	0.28	–1.35, –0.23	–2.79	0.006	–0.31	–0.39
DASS-21														
Depression total	95	13.2	5.8	85	12.1	6.3	0.71	–1.26	0.49	–2.24, –0.28	–2.56	0.012	–0.21	–0.21
Anxiety total	95	11.1	5.2	85	10.2	5.4	0.80	–1.14	0.36	–1.87, –0.42	–3.13	0.002	–0.22	–0.22
Stress total	94	13.1	5	84	12.5	4.6	0.67	–0.76	0.42	–1.6, 0.07	–1.82	0.073	–0.16	–0.16
CHOICE-SF														
Severity mean	98	3.9	1.9	84	4.5	2	0.76	0.65	0.14	0.36, 0.94	4.48	<0.001	0.34	0.34
Goal rating	90	2.9	2.3	68	5.3	2.4	0.27	2.42	0.39	1.62, 3.22	6.13	<0.001	0.74	0.91
SWEMWBS														
SWEMWBS total	91	18	4.7	83	18.6	4.9	0.63	0.39	0.46	–0.53, 1.32	0.85	0.398	0.08	0.10

Full sample $N = 101$. PSYRATS-AH, Psychotic Symptoms Rating Scale-Auditory Hallucinations; DASS-21, Depression, Anxiety and Stress Scale-21; CHOICE-SF, Choice of Outcome in Cognitive Therapy for Psychosis Scale (short form); SWEMWBS, Short Warwick-Edinburgh Mental Well-Being Scale; Unstd, unstandardized; Std, standardized. Paired sample *t*-test results and corresponding standardized effect sizes based on multiple imputed data to account for missing data. Complete case analysis based only on non-missing data.

future trials. This study also corroborated the suggestions from a recent review (Naeem et al., 2016) and meta-analysis (Hazell et al., 2016) that CBTp can be effective when offered over time frames that are shorter than the 16 sessions recommended by NICE.

Limitations

Several words of caution are required in relation to the current study. Firstly, the evaluation was uncontrolled and the benefits may have occurred naturally over time. A future study of this adapted form of CSE would benefit from having a randomized controlled design to allow hypotheses of effectiveness to be tested directly. Secondly, the absence of follow-up data provides no indication of the extent to which benefits might have been sustained after therapy. This is another question for future research.

Clinical implications

CSE could be evaluated in a future randomized controlled trial as a stand-alone brief intervention with the intention of increasing access to CBTp for patients distressed by hearing voices. This would facilitate further evaluation of the relative merits of an intervention that could be made widely available (due to its brevity) but may only have modest effects. Alternatively, the modest and uncontrolled effect sizes within the current study can be interpreted as indicating that sustainable recovery may be more likely to occur if brief CSE was offered as an accessible and engaging 'low intensity' intervention provided by a range of mental health practitioners within a stepped care model (Waller et al., 2013). Following brief CSE, if patients remain distressed, the next step could be informed by patient preference, and potentially include longer and more complex ('high intensity') therapies such as mindfulness-based group therapy (Chadwick et al., 2016), relating therapy (Hayward et al., 2017), avatar therapy (Leff et al., 2013) or cognitive therapy for command hallucinations (Birchwood et al., 2014), delivered by highly trained therapists.

A final noteworthy finding concerns the large effect for the personal goal within the CHOICE measure. Many of the patients took this opportunity to articulate a change that had particular meaning to them, and for many patients (32%) the goal was not explicitly related to voices (e.g. to be more creative, to go out more, to feel better in myself). At a time when there continues to be debate about what should be measured to capture change in relation to distressing voices (e.g. distress, quality of life, impact on daily activities) (Thomas et al., 2014), in addition to measuring distress as a primary outcome, we should ask each patient to express their views and ensure that this goal is foregrounded and regularly evaluated within therapy.

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