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Identifying types of problems and relative priorities in the problem lists of participants in CBT for psychosis trials

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Abstract

Background: There is wide variation in the problems prioritised by people with psychosis in cognitive behavioural therapy for psychosis (CBTp). While research trials and mental health services have often prioritised reduction in psychiatric symptoms, service users may prioritise issues not directly related to psychosis. This discrepancy suggests potential challenges in treatment outcome research.
Aims: The present study aimed to examine the types of problems that were recorded on problem lists generated in CBTp trials.
Method: Problem and goals lists for 110 participants were extracted from CBTp therapy notes. Subsequently, problems were coded into 23 distinct categories by pooling together items that appeared thematically related.
Results: More than half of participants (59.62%) listed a non-psychosis-related priority problem, and 22.12% did not list any psychosis related problems. Chi-square tests indicated there was no difference between participants from early intervention (EI) and other services in terms of priority problem ($\chi^2 = 0.06$, $p = .804$), but that those from EI were more likely to include any psychosis-related problems in their lists ($\chi^2 = 6.66$, $p = .010$).
Conclusions: The findings of this study suggest that psychiatric symptom reduction is not the primary goal of CBTp for most service users, particularly those who are not under the care of EI services. The implications for future research and clinical practice are discussed.

Introduction

Cognitive behaviour therapy (CBT) is a collaborative, problem-orientated therapy and has developed a strong evidence base for use with people with psychosis. CBT for psychosis has its roots in a case study published by Dr Aaron T. Beck in 1952 (Beck, 1952). However, it was not until the late 1980s and early 1990s that what we would now recognise as CBT for people with psychosis (CBTp) started in earnest. This movement was predominantly led by independent groups in the United Kingdom doing small pilot trials or case series with people with a diagnosis of schizophrenia. David Kingdon and Douglas Turkington developed a normalising approach which also helped people with coping skills and understanding their symptoms (Kingdon and Turkington, 1991). The London-East Anglia group, led by Philippa

Garety, Elizabeth Kuipers and David Fowler, developed a version of CBT that placed the emphasis on assessment, engagement, and generating a formulation for people to understand their experiences (Kuipers *et al.*, 1997). Paul Chadwick and Max Birchwood developed a form of CBT influenced by Albert Ellis's rational emotive therapy (Chadwick *et al.*, 1996), while Nicholas Tarrier and colleagues' approach focused on enhancing people's existing coping strategies and helping them to develop new ones (Tarrier *et al.*, 1993). Morrison applied an approach more directly influenced by the understanding and treatment of anxiety disorders being developed by David Clark, Paul Salkovskis and Adrian Wells in Oxford at that time (Morrison, 1994). The aim of these early approaches was predominantly the reduction of positive symptoms of psychosis such as hallucinatory experiences or delusional beliefs, and outcome measures reflected this.

Following these pioneering approaches, there were expansions in the size and methodological rigour of the clinical trials evaluating these approaches, alongside experimental approaches to the investigation of mechanisms involved in the development and maintenance of specific psychotic symptoms (e.g. Bentall *et al.*, 2001; Freeman *et al.*, 2001) and a recognition of the role of trauma in this respect (Read *et al.*, 2005). The specific forms of CBT were also more explicitly linked to cognitive models of psychosis (e.g. Garety *et al.*, 2001; Morrison, 2001). This increased the emphasis on evaluating formulation driven approaches to CBTp, in which change strategies were selected based on individualised case formulations based on a cognitive model. These trials largely had the aim of reducing distress and disability and promoting recovery, rather than necessarily the elimination of psychotic experiences or positive symptoms, and over time the treatment approaches tended to converge, with consensus about key elements (Morrison and Barratt, 2010).

Aaron T. Beck organised the first international CBT for psychosis conference (now known as BeckFest) in Philadelphia in 1999, inviting clinicians and researchers from the UK and elsewhere, who had been involved in developing the treatments and exploring the development and maintenance of symptoms. The aim of this conference was largely to engage North America in extending the work and to expand European involvement. BeckFest has since been an annual conference and has greatly helped with global dissemination, facilitating teamwork and collaboration amongst people working towards a shared goal of improving the lives of people with psychosis by researching the effectiveness and implementation of this evidence-based talking therapy across multiple continents. Subsequently, variants of CBTp have been developed for specific populations, presenting problems or specific symptoms (including psychotic experiences and common mental health problems experienced by people with psychosis, such as anxiety and mood disorders), with many developments attributable to collaborations established at BeckFest.

Since then, a number of systematic reviews and meta-analyses have been conducted which led to recommendations in national guidelines that CBT should be offered to both adults and children and young people experiencing a first episode of psychosis as well as people with longer term, established psychosis, including those meeting criteria for a diagnosis of schizophrenia (National Institute for Health and Care Excellence, 2013; National Institute for Health and Care Excellence, 2014).

An initial step within treatment protocols for delivery of CBT for psychosis (CBTp), alongside assessment and engagement, is the collaborative identification of one or more current problems being experienced, and the subsequent establishment of at least one shared goal that is developed from the problem list (for example, Morrison, 2017). These protocols emphasise collaboration and allow service users to choose multiple problems and goals and prioritise whatever is most problematic for them, so this may include difficulties that are not directly related to psychosis (for example sleep, mood, anxiety or relationships); however, these non-psychosis-related problems may act as maintenance factors for psychotic experiences such as hallucinations and unusual beliefs.

The fact that the problem list is idiosyncratic and collaboratively developed means that there can be a wide variation in what is featured. There is considerable co-morbidity of other psychological difficulties experienced by people with psychosis, including high levels of sleep difficulties (Reeve *et al.*, 2015), dissociation (Pilton *et al.*, 2015), depression and suicidal thinking (Iqbal *et al.*, 2000), and anxiety disorders including social anxiety (Birchwood *et al.*, 2007), worry and post-traumatic stress disorder (Kessler *et al.*, 2017), as well as high levels of trauma history (Varese *et al.*, 2012) and loneliness, social isolation and exclusion (Lim *et al.*, 2018). Stigma and discrimination are also very common (Thornicroft *et al.*, 2009), with media portrayals of psychosis promoting stereotypes of dangerousness and unpredictability. Unsurprisingly, such challenging issues often feature on the problem lists generated by service users with psychosis, in addition to the symptoms more directly associated with psychotic diagnoses such as hallucinatory experiences, unusual distressing beliefs (such as persecutory ideas) and 'negative symptoms' including motivational difficulties. However, there is relatively little research examining the breadth of problems and how these are prioritised by people with psychosis. A narrative synthesis of research examining treatment preferences and priorities of people with psychosis found that desired treatment outcomes included improved social and functional ability and satisfaction, and reduced symptoms (Byrne *et al.*, 2010). A recent large survey of treatment preferences among 1809 patients with non-affective psychosis (Freeman *et al.*, 2019) found that treatment target preferences were: feeling happier (63.2%), worrying less (63.1%), increasing self-confidence (62.1%), increasing activities (59.6%), improving decision-making (56.5%), feeling safer (53.0%), sleeping better (52.3%), and coping with voices (45.3%). There is also a large body of research examining clinical versus service user-defined definitions of recovery; it is clear that clinicians often prioritise reduction in psychiatric symptoms, whereas service users prioritise more holistic aspects including connectedness, hope, identity, meaning and empowerment (Leamy *et al.*, 2011).

These issues cause a number of challenges for treatment outcome research, including the selection of participations and operationalisation of inclusion criteria, selection of appropriate outcome measures and the content of treatment protocols. Criticism of CBTp often emphasises small effect sizes in symptom reduction and functioning, distress and quality of life, based on findings from meta-analyses that have not pre-registered their protocols (Jauhar *et al.*, 2014; Laws *et al.*, 2018), and are, therefore, open to sources of bias and manipulation. However, there may be a discrepancy between what is being measured to test the efficacy of CBTp (most commonly overall psychiatric symptom reduction), and what is actually being targeted in CBTp (service user's idiosyncratic problems and goals), which may disadvantage CBTp in clinical trials and lead to an under-estimation of effectiveness in achieving those goals. The development of more targeted approaches to delivery of CBTp, such as the Feeling Safe modularised approach developed and evaluated by Freeman and colleagues, may represent an improvement in the effectiveness of CBTp. This causal interventionist approach involves a collaborative choice regarding the priorities from six different factors involved in the development and maintenance of persecutory delusions, such as sleep, worry, safety-seeking behaviours and self-confidence. They certainly found a large effect size (Freeman *et al.*, 2021), which is impressive in the context of an overall effect size for CBTp in the small to moderate range. However, it is also possible that this was due to the more precise match between their sample selection (people with persecutory delusions), their treatment protocol (targeting mechanisms involved in the maintenance of persecutory delusions) and the primary outcome (conviction in persecutory delusions).

In order to inform consideration of these issues, we sought to conduct a categorical analysis to examine the types of problems that were collaboratively generated and recorded on problem lists within course of CBTp in the context of several CBTp trials conducted in Manchester. This will add to the literature on priorities and preferences of people with psychosis, which have focused on users of secondary mental health services in general, rather than those specifically receiving CBTp, and focuses on idiosyncratic user-identified problems rather than rating a pre-specified list.

Method

Participants

This sample included 110 participants who took part in the CBTp arms of the four CBTp trials conducted at the Psychosis Research Unit in Manchester between 2012 and 2020. These studies were COMPARE (Cognitive behavioural therapy Or Medication for Psychosis: a Randomised Evaluation) (Morrison *et al.*, 2018a), FOCUS (Focusing On Clozapine Unresponsive Symptoms: a randomised controlled trial) (Morrison *et al.*, 2018b), MAPS (Mapping Adolescent first episode Psychosis: a feasibility Study) (Morrison *et al.*, 2020) and RESPECT (REducing Self-stigma in Psychosis by Engagement in Cognitive Therapy) (Morrison *et al.*, 2016). All participants were recruited from services across Greater Manchester Mental Health NHS Foundation Trust and Pennine Care NHS Trust and had a schizophrenia spectrum diagnosis (ICD-10 F20-F29) and/ or were receiving care from an Early Intervention for Psychosis service. Detailed inclusion and exclusion criteria for each of these studies can be found in their respective publications. From these samples, participants were eligible for inclusion in the current study if they completed a problem and goals list in their CBTp sessions.

Measures and procedure

Demographic characteristics of participants (age, gender and referral service) were collected in each of the included studies, and trial therapists recorded the number of CBTp and booster sessions that each participant received. Problem list data for each participant was subsequently extracted from their trial-specific therapy notes by a clinical psychologist. As the problem list is a milestone in the therapy manual, each participant had a clearly identified, and ranked problem list. Each participant's initial problem and goals list was identified, and any reviewed additions or changes to this list were determined by going through the rest of the trial therapy notes. A subsequent categorical analysis of the problems was done by both a clinical psychologist (A.L.) and a service user researcher (H.P.). This analysis sought to identify categories of problems by pooling together items that appeared thematically related, resulting in the coding of each problem. This coding was performed in a data-driven, bottom-up process, rather than a top-down use of pre-specified categories. Where there were discrepancies in coding, these were brought to a clinical psychologist (A.P.M.) and resolved. The problems were categorised at the surface level based on the statements on the problem list; this was not informed by a case formulation, so it is possible that something coded as non-psychotic (e.g. fear of going out) could be directly related to psychotic experiences (e.g. voices threatening harm).

Data analysis

Data analysis was conducted using IBM SPSS version 27. An alpha level of 0.05 for statistical significance was used. Six participants were excluded from the analyses due to missing problem list data, resulting in a sample size of 104. Descriptive statistics were calculated for the sample characteristics. Each problem identified in participants' problem list was coded as one of the following: Anxiety, Coping, Diagnosis, Dissociation, Drug use, Emotion, Health concerns, Intrusive thoughts, Medications, Mood, Occupational, Practical concerns, Psychosis, Self-esteem, Self-harm, Sexuality, Sleep, Social, Stigma, Suicidality, Thinking, Trauma, or Understanding. Subsequently, each problem was coded into a binary variable: a problem was categorised as 'Psychosis' if it was initially coded as Psychosis, and 'Non-Psychosis' if it was coded as any other problem category. Additionally, a 'Yes'/'No' binary variable was created to indicate whether participants mentioned any psychosis-related problem (i.e. any problem coded as Psychosis) or whether Psychosis did not appear in their problem list. To create a binary variable for service type, Child and Adolescent Mental Health Services (CAMHS) and Early Intervention Teams (EIT) were categorised as Early Intervention (EI) Services, and every other

Table 1. Participant demographics

	Mean	SD	Minimum–maximum
Age (n = 98)	31.48	14.58	14–72
Number of sessions (n = 101)	16.78	9.42	1–37
Number of booster sessions (n = 99)	0.74	1.41	0–6
		Frequency	Percentage
Gender (n = 102)			
Male		60	58.8%
Female		42	41.2%
Study (n = 104)			
COMPARE		28	26.9%
FOCUS		46	44.2%
MAPS		20	19.2%
RESPECT		10	9.6%
Service (n = 99)			
Assertive Outreach		1	1.0%
CAMHS		1	1.0%
CCTT		4	4.0%
CMHT		33	33.3%
EIT		50	50.5%
In-Patient Ward		4	4.0%
Recovery Team		5	5.1%
Review Team		1	1.0%

team (i.e. Assertive Outreach, Complex Care Treatment Team (CCTT), Community Mental Health Team (CMHT), Inpatient Ward, Recovery Team, and Review Team) was categorised as Other Services. Chi-square tests were used to identify significant differences between service types for psychosis priorities and psychosis mentions. As the RESPECT trial was specifically aimed at targeting stigma rather than general psychopathology, separate analyses were conducted for the 10 participants recruited from this study. To rule out the possibility that the RESPECT subsample may have skewed problem list results, *post-hoc* analyses were performed excluding these participants.

Results

Demographics

A summary of the demographic characteristics of participants is provided in Table 1. In total, 104 participants across four studies (26.9% from COMPARE, 44.2% from FOCUS, 19.2% from MAPS, and 9.6% from RESPECT) were included in the analyses.

Within the sample, 99 participants had data for service type. Most participants were referred from Early Intervention Teams (EIT; 50.5%) and Community Mental Health Teams (CMHT; 33.3%), with an additional 5.1% having been referred from Recovery Teams, 4.0% from In-Patient Wards, 4.0% from Complex Care Treatment Teams (CCTT), 1.0% from Assertive Outreach, 1.0% from Child and Adolescent Mental Health Services (CAMHS), and 1.0% from Review Teams.

The mean age for participants was 31.48, with a standard deviation (*SD*) of 14.58 years. Sixty participants (58.8%) were male and 42 (41.2%) were female. On average, participants received 16.78 CBTp sessions (*SD* = 9.42) and 0.74 booster sessions (*SD* = 1.41).

Problems listed

Each participant listed between one and seven problems in their problem list. In total, 421 problems were listed by 104 participants.

Participants listed 125 psychosis-related problems (29.69%) and 296 non-psychosis-related problems (70.31%). Frequencies for each problem type can be seen in Table 2.

Priority problems

All 104 participants included in the analyses listed at least one problem. From this total, 42 participants (40.38%) listed a psychosis-related problem as their priority, and 62 (59.62%) listed a non-psychosis-related priority problem.

In EI services, 20 participants (39.2%) listed a psychosis-related priority problem, and 31 (60.8%) did not. In other services, 20 participants (41.7%) listed a psychosis-related priority problem, and 28 (58.3%) did not. Table 3 shows the frequency of priority problem types for participants in each service.

A chi-square test was used to compare the frequency of participants listing psychosis-related priority problems between EI services and other services. No association was found between service type and psychosis-related CBTp priorities, χ^2 (1, $N = 99$) $= 0.06$, $p = .804$.

Psychosis-related problems

Within the total sample, 81 participants (77.88%) listed at least one psychosis-related problem and 23 participants (22.12%) listed none.

In EI services, 45 participants (88.2%) listed psychosis in their problem list and six (11.8%) did not. In other services, 32 participants (66.7%) listed psychosis in their problem list and 16 (33.3%) did not. EIT and CMHT were the only two service types in which a proportion of participants (12.0 and 48.5%, respectively) did not mention psychosis-related issues in their problem list. Table 4 shows the frequency of participants who did and did not list psychosis-related problems in each service.

A chi-square test was used to compare the frequency of participants who listed any psychosis-related problem between EI services and other services. There was a significant association between service type and listing psychosis as a problem (χ^2 (1, $N = 99$) $= 6.66$, $p = .010$), with people from Early Intervention Services more likely to list psychosis-related issues.

RESPECT trial

As the RESPECT trial focused on internalised stigma, it was also analysed separately. From the 10 participants recruited from the RESPECT trial, none listed psychosis as their priority problem. Additionally, stigma was mentioned by three of the RESPECT participants (30%), but was not a priority problem for any. Priority problems for these participants were: Anxiety ($n = 1$), Coping ($n = 1$), Diagnosis ($n = 2$), Mood ($n = 1$), Occupational ($n = 1$), Practical Issues ($n = 1$), Self-Esteem ($n = 2$), and Social ($n = 1$). Only one of the 10 participants (10%) mentioned psychosis in their problem list.

Post-hoc analyses were also conducted excluding the 10 RESPECT participants. From the remaining 94 participants, 42 (44.7%) listed a psychosis-related problem as their priority, and 52 (55.3%) listed a non-psychosis-related priority. Furthermore, 80 participants (85.1%) mentioned a psychosis-related problem in their problem list, and 14 (14.9%) did not.

Discussion

The present study aimed to expand on the limited literature around CBTp problem lists and explore the issues prioritised in therapy by people with psychosis. A sample of participants from four CBTp trials was used to ensure a large enough sample size, and each participant's therapy notes were screened to identify a completed problem and goals list. There was wide

Table 2. Frequency of problem types listed by participants

	Problem 1 (n = 104)	Problem 2 (n = 99)	Problem 3 (n = 85)	Problem 4 (n = 63)	Problem 5 (n = 39)	Problem 6 (n = 24)	Problem 7 (n = 8)	Total (n = 421)
Psychosis	42 (40.4%)	25 (25.3%)	27 (31.8%)	13 (20.6%)	9 (23.1%)	9 (37.5%)	0 (0%)	125 (29.7%)
Non-psychosis	62 (59.6%)	74 (74.7%)	58 (68.2%)	50 (79.4%)	30 (76.9%)	15 (62.5%)	8 (100%)	296 (70.3%)
Anxiety	16 (15.4%)	24 (24.2%)	13 (9.4%)	11 (17.5%)	9 (23.1%)	0	1 (12.5%)	74 (17.6%)
Coping	1 (1.0%)	0	0	0	0	0	0	1 (0.2%)
Diagnosis	3 (1.9%)	3 (3.0%)	0	0	0	0	0	6 (1.4%)
Dissociation	4 (3.8%)	2 (2.0%)	0	3 (4.8%)	2 (5.1%)	0	0	11 (2.6%)
Drug use	0	0	0	3 (4.8%)	0	0	1 (12.5%)	4 (1.0%)
Emotion	4 (3.8%)	1 (1.0%)	4 (4.7%)	4 (6.4%)	1 (2.6%)	2 (8.3%)	0	16 (3.8%)
Health concerns	1 (1.0%)	3 (3.0%)	3 (3.5%)	1 (1.6%)	3 (7.7%)	2 (8.3%)	1 (12.5%)	14 (3.3%)
Intrusive thoughts	2 (1.9%)	2 (2.0%)	2 (2.4%)	4 (6.4%)	0	0	1 (12.5%)	10 (2.4%)
Medications	1 (1.0%)	1 (1.0%)	1 (1.2%)	1 (1.6%)	1 (2.6%)	0	0	5 (1.2%)
Mood	5 (4.8%)	15 (15.2%)	6 (7.1%)	5 (7.9%)	2 (5.1%)	3 (12.5%)	1 (12.5%)	37 (8.8%)
Occupational	1 (1.0%)	0	2 (2.4%)	0	0	0	0	3 (0.7%)
Practical concerns	3 (2.9%)	6 (6.1%)	7 (8.2%)	4 (6.4%)	0	1 (4.2%)	0	21 (5.0%)
Self-esteem	2 (1.9%)	4 (4.0)	2 (2.4%)	2 (3.2%)	1 (2.6%)	0	1 (12.5%)	12 (2.9%)
Self-harm	2 (1.9%)	0	0	0	0	0	0	2 (0.5%)
Sexuality	0	0	0	1 (1.6%)	0	0	0	1 (0.2%)
Sleep	1 (1.0%)	2 (2.0%)	3 (3.5%)	0	3 (7.7%)	1 (4.2%)	0	10 (2.4%)
Social	10 (9.6%)	7 (7.1%)	7 (8.2%)	7 (11.1%)	4 (10.3%)	3 (12.5%)	1 (12.5%)	39 (9.3%)
Stigma	1 (1.0%)	1 (1.0%)	2 (2.4%)	2 (3.2%)	0	0	0	6 (1.4%)
Suicidality	1 (1.0%)	0	1 (1.2%)	0	0	2 (8.3%)	1 (12.5%)	5 (1.2%)
Thinking	4 (3.8%)	3 (3.0%)	1 (1.2%)	1 (1.6%)	2 (5.1%)	1 (4.2%)	0	12 (2.9%)
Trauma	0	0	3 (3.5%)	1 (1.6%)	2 (5.1%)	0	0	6 (1.4%)
Understanding	0	0	1 (1.2%)	0	0	0	0	1 (0.2%)

Table 3. Frequency of participants listing psychosis and non-psychosis related priority problems by service type

Service	Psychosis	Percentage	Non-psychosis	Percentage
Early Intervention Services (*n* = 51)	20	39.2%	31	60.8%
CAMHS (*n* = 1)	1	100%	0	0%
EIT (*n* = 50)	19	38.0%	31	62.0%
Other services (*n* = 48)	20	41.7%	28	58.3%
Assertive Outreach (*n* = 1)	0	0%	1	100%
CCTT (*n* = 4)	3	75.0%	1	25.0%
CMHT (*n* = 33)	11	33.3%	22	66.7%
In-Patient Ward (*n* = 4)	4	100%	0	0%
Recovery Team (*n* = 5)	2	40.0%	3	60.0%
Review Team (*n* = 1)	0	0%	1	100%

Table 4. Frequency of participants listing psychosis-related problems per service type

Service	Psychosis listed	Percentage	Psychosis not listed	Percentage
Early Intervention Services	45	88.2%	6	11.8%
CAMHS	1	100%	0	0%
EIT	44	88.0%	6	12.0%
Other services	32	66.7%	16	33.3%
Assertive Outreach	1	100%	0	0%
CCTT	4	100%	0	0%
CMHT	17	51.5%	16	48.5%
In-Patient Ward	4	100%	0	0%
Recovery Team	5	100%	0	0%
Review Team	1	100%	0	0%

variation in the problems that featured in these lists, with 23 distinct categories arising from a categorical analysis. More than half of the participants included in the study listed a non-psychosis-related priority problem, and approximately one-fifth did not identify any psychosis-related goals within their problem list.

These findings suggest that symptom reduction may not be the main goal for most service users in CBTp. This builds on previous research on treatment outcome preferences (e.g. Byrne *et al.*, 2010; Freeman *et al.*, 2019) and recovery goals (Leamy *et al.*, 2011; Pitt *et al.*, 2007), which have shown that service users often favour holistic aspects of recovery over symptomatic improvement. Participants from EI services were more likely to identify psychosis-related goals than those from other teams, in particular CMHTs; this is consistent with service users wanting to eradicate symptoms after the initial onset, but with progression to managing a life with symptoms after persistence and/or recurrence of symptoms becomes evident.

These findings have implications for future research and for clinical practice. It is possible that the discrepancies between the problems identified and targeted within CBTp and the outcome measures employed within clinical trials may have led to a potential under-estimation of the effectiveness of CBTp. It has been argued that the use of broad symptom focused measures, such as the PANSS (Kay *et al.*, 1987), which was utilised in three of the four trials included in this study, reduces sensitivity to individualised outcomes often prioritised within CBTp (Thomas, 2015). Our findings highlight the breadth of potential difficulties that are experienced by people with psychosis, and the challenges of measuring the effectiveness of collaborative interventions that focus on the problems identified by the service users themselves. Using symptomatic improvement as the primary outcome may be a limited way to measure the achievement of service user-defined, idiosyncratic goals; even with psychosis-related problems, the goal in CBTp is often to reduce the distress or disability related to these experiences, rather than reduction of their frequency or intensity, which is often measured in clinical trials. It may be

appropriate to use goal-based outcomes (Law and Jacob, 2015) or user-defined recovery (Law *et al.*, 2014), which are utilised in NHS community mental health services in secondary care in England.

However, it is also important to note that access to CBTp is often limited due to a variety of factors, including a lack of trained therapists, limited access to high-quality supervision, and a lack of financial investment. Additionally, there are often stigmatising and discriminatory beliefs and behaviours on behalf of mental health professionals which inform the treatments options given to people with psychosis (or withheld).

There is, therefore, a need to improve the evidence base and increase effect sizes for CBTp. This may be achieved via a focus on targeting mechanisms and exploring the effectiveness of different treatment components, as well as improving identification of what works for each person. The effect sizes across and within clinical trials hide variations in individual response, with some people responding incredibly well and quickly to CBTp, some getting little to no benefit, and others somewhere in the middle. It is, therefore, important to improve earlier prediction of treatment responses and treatment failures to identify who will benefit from specific interventions, which may help with targeting limited resources. Additionally, comparative research examining relative effectiveness of CBTp and anti-psychotic medication and the combination of the two will be important in enabling increased informed choices for people with psychosis, and increased access to the treatments that they want to engage with, which may necessitate increasing and improving the workforce in terms of the numbers of therapists and the skills of therapists.

Another consideration for trial design is whether to specify more strictly defined treatment targets and treatment protocols. In our psychosis-focused trials, the majority of prioritised problems were not related to psychosis, and in our stigma-focused trial, the majority of prioritised problems were not related to stigma; therefore, should we consider less open-ended choice? Perhaps trials should aim for a more selective, specific correspondence between the participants recruited, the interventions being offered, the mechanisms being targeted, and the outcomes being assessed. For example, if a person with psychosis wants to prioritise something like stigma or PTSD, it would make sense to recruit them into trials specific to those goals. There are already several examples of such trials (Birchwood *et al.*, 2014; Freeman *et al.*, 2021; Peters *et al.*, 2022).

Furthermore, offering a choice between a fixed range of modules targeting maintenance factors related to a primary target (for example, persecutory ideas in the Feeling Safe trial) ensures that the interventions are relevant to the outcome measure. It is also possible that targeting psychosis allows for improvements in more idiosyncratic goals such as social relationships, in the same way that targeting maintenance factors such as sleep and worry lead to improvements in psychotic symptoms (Freeman *et al.*, 2021). It is possible that targeted treatments such as this are genuinely more effective than a more generic and flexible CBTp, but it is also possible that the larger effect size is a result of the congruence between outcome and interventions.

The finding that people with psychosis within CBTp trials are prioritising difficulties that are not psychotic symptoms has a number of implications. Despite NICE guidelines recommending evidence-based treatment guidelines for presenting problems in people with psychosis are followed, many people with psychosis are excluded from services such as IAPT on the basis of their diagnosis; our findings suggest that many people would prioritise the treatment of their non-psychotic mental health problems, and as such, should be able to access evidence based interventions for anxiety disorders, including PTSD, depression and other common mental health problems. This finding may also help explain the common finding that people with a diagnosis of schizophrenia often discontinue their anti-psychotic medication (Lacro *et al.*, 2002), as it is not targeting the issues that they are most concerned with. When combined with significant, often distressing, side-effects, this may explain the reluctance to commence or continue with such medication.

There are some methodological limitations that should be considered when interpreting the findings of this study. The cognitive behavioural case formulations associated with the identified problems were not studied as part of this research; therefore, it is possible some problems classified as not psychosis related, may have been affected by psychosis (for example, loneliness may be affected by voices telling person not to leave their house, or threatening voices may be contributing to anxiety). A further study could be conducted to examine the individual formulations developed in the therapy sessions. It is possible that some participants did not prioritise psychosis-related problems because they were already benefiting from the effects of anti-psychotic medication; however, it is important to note that two of the trials included allocation to CBTp alone, without anti-psychotics. The number of participants included in our analyses is relatively small, and these analyses could be replicated in a much larger sample if data from additional clinical trials were to be collected. A larger study would have more statistical power to identify possible group differences related to participant characteristics, including type and severity of symptoms.

Author contributions. **Anthony Morrison:** Conceptualization (equal), Investigation (equal), Methodology (equal), Project administration (lead), Supervision (lead), Writing – original draft (equal), Writing – review & editing (equal); **Cláudia Gonçalves:** Formal analysis (lead), Writing – original draft (equal), Writing – review & editing (equal); **Heather Peel:** Data curation (equal), Investigation (equal), Methodology (equal); **Amanda Larkin:** Conceptualization (equal), Data curation (lead), Investigation (equal), Methodology (equal), Writing – review & editing (equal); **Samantha Bowe:** Conceptualization (equal), Data curation (equal), Investigation (equal), Methodology (equal), Writing – review & editing (equal).

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