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ORIGINAL RESEARCH ARTICLE

Clinical profiles of people with persecutory vs grandiose delusions who engage in psychological therapy during an acute inpatient admission

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Persecutory and grandiose delusions are the most commonly reported sub-types of delusion within inpatient populations. However, little is known about whether clinical profiles might differ between these sub-types within a sample of patients who agree to engage in a psychological therapy during an acute inpatient admission. We report data on 41 participants who took part in the amBITION study, a randomised controlled trial of a brief talking therapy for psychosis on inpatient wards. Participants with persecutory and grandiose delusions were compared on: (1) clinical and demographic profiles; (2) psychotic and affective symptoms; and (3) inpatient treatment received (both psychological and pharmacological). Average ratings of frequency of delusions and believability/conviction at the start of therapy were similar between those with persecutory and grandiose delusions. Number of therapy sessions completed, satisfaction with therapy, and medication received, was similar between both groups. Our findings indicate that people with persecutory or grandiose delusions may report distress associated with their experiences, and so be willing to engage in a psychological therapy.

Ethics: The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

Introduction

The majority of acute psychiatric admissions in the UK are for people experiencing psychotic symptoms (NHS Benchmarking Network 2017). The primary treatment is anti-psychotic medication and although psychological therapy is not readily available, patients often report wanting greater access to this within inpatient settings (The Schizophrenia Commission 2012; Csipke et al. 2014; Wood & Alsawy 2016). However, not all patients who are offered the opportunity to engage in a psychological therapy for psychosis during an acute admission will accept the offer (Mitchison et al. 2015; Reynolds et al. 2017). A better understanding of the profile of people who do agree to engage with a psychological therapy during an inpatient admission is therefore helpful to improve targeting of inpatient psychological therapies and adapting them appropriately to meet the needs of patients. Data from the amBITION trial (Jacobsen et al. 2016), a randomised-controlled trial of a brief talking therapy for psychosis on acute wards, showed that almost all participants who agreed to take part reported delusions (49/50; 98%), with about half of those additionally reporting voices (23/50; 46%). Recruiting this group of patients to a therapy trial afforded us the opportunity to describe and contrast those with persecutory and grandiose delusions, which are the two most commonly reported types within inpatient populations, both in the UK (Castle et al. 1994) and internationally (Appelbaum et al. 1999; Gutierrez-Lobos et al. 2001; Brakoulias & Starcevic 2008; Cannon & Kramer 2012; Kilicaslan et al. 2016). For the purposes of this paper, persecutory delusions were defined with reference to Freeman & Garety (2000), i.e. that the individual believes that a person or group is intentionally harming or going to harm them. Grandiose delusions were defined using DSM-IV-TR criteria (APA 2000), i.e. the individual believes they have inflated worth, power, knowledge, identity or a special relationship to a deity or famous person.

We had three main aims:

1. To describe the clinical and demographic profile of people with persecutory and grandiose delusions who engage in a psychological therapy during an acute admission.
2. To compare the symptom profiles of participants with persecutory and grandiose delusions at the start of therapy.
3. To describe psychological and pharmacological inpatient treatment received by participants with persecutory and grandiose delusions.

The following section briefly reviews the current literature on people with persecutory vs grandiose delusions with reference to: (1) clinical and demographic profiles; (2) symptom profiles, including both psychotic and affective symptoms; and (3) inpatient treatment received.

Clinical and demographic profiles

There is scant data on clinical and demographic profiles by delusion sub-type within UK inpatient populations. Within the international literature, a retrospective case-note review by Gutierrez-Lobos et al. (2001) identified all first-time inpatient admissions from 1971–1974 at an Austrian hospital who reported delusions (N = 639). They found that people with persecutory delusions tended to be older than people with grandiose delusions. They also found that a significantly greater proportion of women than men reported persecutory delusions (78.8% vs 64.9% respectively), and the reverse was true for grandiose delusions (2.5% vs 8.3%). Men with persecutory delusions were more likely to receive a diagnosis of schizophrenia than women (40.6% vs 25.8% respectively). Appelbaum et al. (1999) also report data on diagnosis by delusion sub-type from a US sample of people admitted to acute inpatient wards (N = 324). They found that similar proportions of people with persecutory and grandiose delusions had a diagnosis of schizophrenia (46% vs 47% respectively). However, a greater proportion of people with grandiose delusions had a diagnosis of bipolar disorder (30%) compared to those with persecutory delusions (20%).

Symptom profiles

Psychotic symptoms. Delusional beliefs are commonly conceptualised as being multi-dimensional (Garety & Hemsley 1994), including distress, preoccupation/frequency, conviction and disruption to functioning. The Appelbaum et al. (1999) inpatient study reported multi-dimensional data using the MacArthur–Maudsley Delusion Assessment Schedule (a modified version of the Maudsley Assessment of Delusions Scale (MADS); Wessely et al. 1993). They found that ratings of preoccupation/frequency of belief were similar between persecutory and grandiose delusions. However, people with persecutory delusions reported greater associated negative affect of their beliefs compared to people with grandiose delusions. Conversely, people with grandiose delusions reported greater conviction in their beliefs.

Affective symptoms. Psychological models have been proposed for delusional beliefs in general (Garety et al.

2001) as well as specifically for persecutory (Bentall et al. 2001; Freeman et al. 2002) and grandiose delusions (Knowles et al. 2011). All models include some role for affective processes, including depression, anxiety and mania/elevated mood. There has been some debate in the literature as to whether delusional beliefs can be thought of as a kind of maladaptive emotional regulation strategy. Contrasting theories in this area are known as 'delusion as defence' (DAD; Bentall et al. 2001) or 'emotion-consistent' (EC; Smith et al. 2005). In summary, the delusional belief is seen as either arising from an attempt to avoid unwanted negative affect (DAD), or instead directly building on the individual's current emotional state (EC). According to the EC model, we would predict that people with persecutory beliefs would report more negative affective symptoms, including higher depression and anxiety scores, compared to people with grandiose beliefs. If there was little difference in affective symptoms according to delusion sub-type, this would be more consistent with the DAD model. Evidence from the Prevention of Relapse in Psychosis Trial (Garety et al. 2008) is more consistent with the EC model. Baseline data from participants (who had all experienced a relapse within the past three months and were still experiencing at least one positive psychotic symptom), showed an association between persecutory delusions and higher depression and anxiety, and a converse association between grandiose delusions and lower depression and anxiety (Smith et al. 2006; Garety et al. 2013). For the purposes of this study, we did not make specific hypotheses on group differences in affective symptoms due to the scant evidence in the literature specifically relating to acute inpatient populations.

Inpatient treatment

There is little data specifically on outcome of inpatient therapy by delusion sub-type. Appelbaum et al. (1999) suggested that, because people with grandiose delusions in their sample reported higher conviction in their beliefs, this might lead to a poorer outcome were they to be offered cognitive-behavioural therapy (p. 1942). Kilicaslan et al. (2016) reported that in a sample of inpatients from a Turkish psychiatric hospital (N = 116), people with specific sub-types of persecutory delusions (fear of being bewitched, and having an unknown persecutor) in fact had a poorer treatment outcome at discharge, in terms of higher symptom scores on the Positive and Negative Symptom Scales (PANSS; Kay et al. 1987). However, people with grandiose delusions had longer hospital admissions on average, compared to other delusion types. The treatment received is not specified in the paper, so it is not known whether this group of patients received only medication and nursing care, or whether psychological therapies were also offered.

Method

Ethical approval

Ethical approval for the study was given by the London-Camberwell St Giles Research Ethics Committee (REC reference number: 15/LO/1338, 29 September 2015). All participants in the study gave informed written consent.

Participants

Participants were recruited as part of the amBITION trial (Brief Talking Therapies on Wards; ISRCTN37625384) from four acute inpatient wards in an inner-city psychiatric hospital. All consecutive admissions to participating wards were screened for eligibility within the first 14 days of their admission. Participants were eligible if they reported at least one positive psychotic symptom in the context of a schizophrenia-spectrum (F20–29) or a mood-disorder (F30–39) diagnosis, and were interested in having a brief talking therapy during their admission. All participants had to have capacity to consent to take part in a research trial, including those detained under a section of the Mental Health Act (MHA). In addition to treatment as usual (TAU), participants were randomly allocated to receive up to five sessions of either mindfulness-based intervention or a control intervention, which involved doing enjoyable activities on the ward with the therapist. A complete description of the mindfulness therapy is outside the scope of this paper but is described in full in the trial protocol (Jacobsen et al. 2016). The therapy was described to potential participants as helping with coping skills and setting goals for the future.

This paper reports data from a subset of 41 participants from the total sample of 50, who reported either a persecutory or a grandiose delusion on admission. Of the nine participants not fitting this criterion, eight reported a miscellaneous category of delusion and one participant did not report any delusions. Two expert raters independently rated the delusions from a description of the belief given by the participant at the time of completing baseline measures for the study (using the definitions outlined in the introduction). Any discrepancies were resolved by discussion to reach a consensus. A typical example of a persecutory belief was 'People are trying to find my location and kidnap me'. A typical example of a grandiose belief was 'I am Elijah the prophet and have special powers'.

Measures

After giving written informed consent, participants completed several self-report questionnaires as part of a baseline research assessment. Additional demographic and clinical data were extracted from electronic health records. Measures reported in this paper were as follows.

Self-ratings of psychotic symptoms. This is a self-report scale that asks respondents to rate their psychotic symptoms (voices and/or distressing beliefs) on a scale of 1 7 (frequency) and 0 10 (distress and believability). These scales have previously been used in inpatient psychosis trials (Bach & Hayes 2002; Gaudiano & Herbert, 2006); they were found to be easy for participants to complete and showed sensitivity to change over time. The scale is reproduced in Appendix 1.

Depression, anxiety and stress scales (DASS-21). The DASS-21 is a short-form version of the original 42-item DASS comprising seven items on each of the three sub-scales for depression, anxiety and stress (Lovibond & Lovibond 1995). It is a self-report scale with respondents scoring each item on a four-point scale from 0 (never) to 3 (almost always). The DASS-21 is a well-validated measure, has been shown to have good internal consistency and convergent validity in an acute psychiatric population (Weiss et al. 2015) and is suitable for use with people experiencing psychotic symptoms (Samson & Mallindine 2014).

Medication

Prescribed medication was recorded: (1) on admission (from the standard medication reconciliation entry made by the ward pharmacist); and (2) on date of randomisation into the study (from the ward medication chart). There was, on average, a period of 11 days between admission and randomisation into the study, which in clinical terms meant that there had been adequate time for assessment and a subsequent treatment plan to be initiated.

Analysis plan

Data were analysed using SPSS for Windows 24.0. The alpha value for statistical significance was $p = 0.05$, and all hypothesis tests were two-tailed. The clinical sample was small, and these data comparing delusion sub-types were secondary to the primary aims of the trial (feasibility of recruitment and retention into the trial). We therefore planned to focus on mainly reporting descriptive statistics, limiting inferential statistics to comparisons of symptom profiles.

Results

Aim 1: To describe the clinical and demographic profile of people with persecutory and grandiose delusions who engage in a psychological therapy

Demographic and clinical characteristics by delusion sub-type are shown in Table 1. The mean age was around 30 for both groups, with most participants being male in both groups (probably an artefact arising from the study having recruited from one female and three male wards). Most

**Table 1.** Demographic and clinical characteristics by delusion sub-type

	Persecutory (N = 30)	Grandiose (N = 11)
Age		
Mean (range)	33 (19–65)	30 (24–54)
Gender		
Male	22 (73%)	6 (55%)
Female	8 (27%)	5 (45%)
Ethnicity		
White	9 (30%)	1 (9%)
Asian	3 (10%)	1 (9%)
Black	16 (53%)	5 (46%)
Mixed Race	2 (7%)	3 (27%)
Other	0 (0%)	1 (9%)
Employment status		
Working (full/part-time)	4 (13%)	2 (18%)
Studying	6 (20%)	0 (0%)
Retired	1 (3%)	0 (0%)
Unemployed	4 (13%)	2 (18%)
Disability benefits	15 (50%)	7 (64%)
Diagnosis		
F20-29 (Schizophrenia-spectrum)	23 (77%)	8 (73%)
F30-39 (Mood disorder)	7 (23%)	3 (27%)
Psychotic symptoms (self-report)		
Delusions only	13 (43%)	7 (64%)
Delusions + voices	17 (57%)	4 (36%)
Legal status on admission		
Informal	9 (30%)	2 (18%)
MHA Sec 2	16 (53%)	7 (64%)
MHA Sec 3	4 (13%)	2 (18%
MHA Sec 37	1 (3%)	0 (0%)
Open to secondary care services on admission		
Yes	17 (57%)	7 (64%)
No	13 (43%)	4 (36%)
Years known to services		
<1 year	7(23%)	1 (9%)
1–5 years	5 (17%)	2 (18%)
6–10 years	9 (30%)	2 (18%)
11–15 years	2 (7%)	1 (9%)
>15 years	7 (23%)	5 (46%)
Previous admissions		
Yes	17 (57%) (mean 2.6, range 0–11)	11 (100%) (mean 5.5, range 1–14)
No	13 (43%)	0 (0%)

participants came from a Black or Minority Ethnic (BME) background (76%). The study was conducted in an ethnically diverse inner-city area, where 42% of the local population are from a BME background (Office for National Statistics, 2016). The finding that people from a BME background were over-represented in the current sample, compared to local population data, is consistent with previous findings at a national level that people from (BME) are over-represented within inpatient populations in general, particularly for those being treated under a section of the MHA (Bhui et al. 2003). Overall, participants experienced a high level of disability associated with their mental health difficulties, with the majority receiving
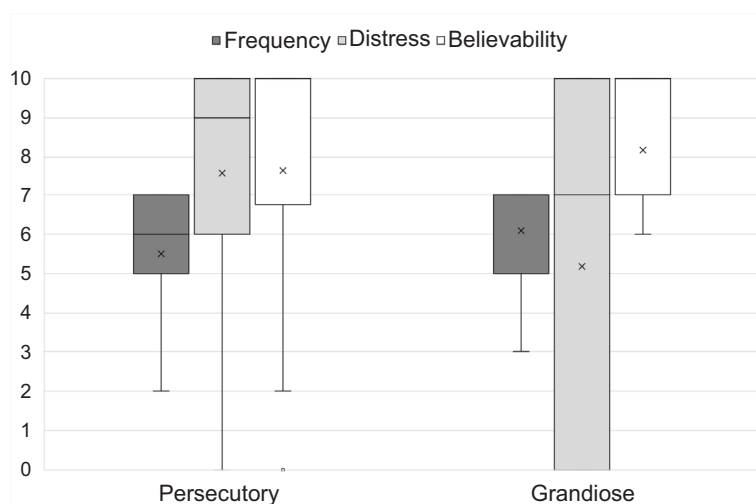
Mann–Whitney test: Frequency, U = 118.5, *p* = 0.154; Distress, U = 123.5, *p* = 0.204; Believability, U = 148.5, *p* = 0.591

Fig. 1. Box and whisker plot of psychotic symptom scores (delusions) by delusion sub-type at start of therapy (x represents mean value).
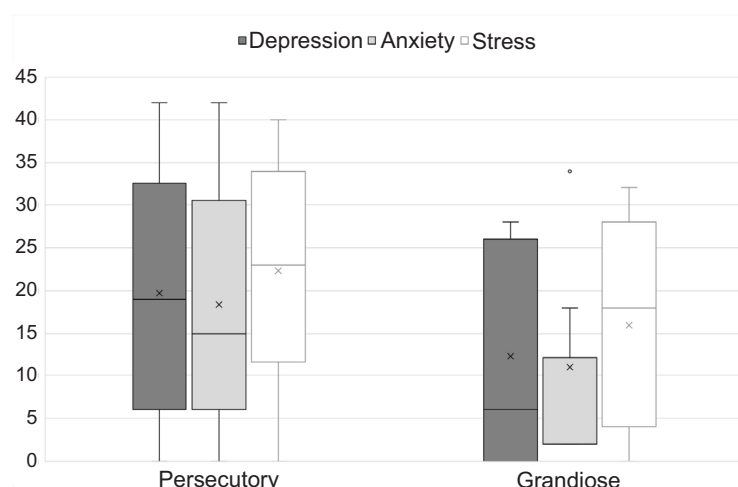
Mann–Whitney test: Depression, U = 98.5, *p* = 0.05; Anxiety, U = 112, *p* = 0.118; Stress, U = 110, *p* = 0.105

Fig. 2. Box and whisker plot of mood symptoms by delusion sub-type at start of therapy (x represents mean value).

disability benefits. However, a minority of people were working or studying prior to admission.

In terms of clinical characteristics, most participants in both groups had a diagnosis of a schizophrenia-spectrum disorder (ICD-10 codes F20 F29), with the proportion differing little between the persecutory and grandiose delusions groups (77% and 73% respectively). About a quarter of each group had a diagnosis of a mood disorder (23% persecutory delusions; 27% grandiose delusions). A

higher proportion of people with persecutory delusions also reported hearing voices (57%) compared to the grandiose delusions group (36%).

The majority of participants in both groups were admitted under a section of the MHA, most commonly for assessment under Section 2 (53% in the persecutory group vs 64% in the grandiose group). All the participants in the grandiose group had previous admissions, whereas only 57% of participants in the persecutory group had.

Aim 2: To compare the symptom profile of participants with persecutory and grandiose delusions at the start of therapy

Participants completed self-report measures of psychotic symptoms and mood at the start of therapy. As shown in Figure 1, both groups reported high frequency of delusions, rating this between a mean average of 5 (daily) and 6 (> once daily). This indicates that people were still experiencing intense symptoms at the start of therapy. Distress ratings were slightly higher on average in the persecutory group compared to the grandiose groups, but as can be seen in Figure 1, the inter-quartile range was large for the grandiose group, reflecting the small sample size and degree of skew in the data. Believability ratings were also high for both groups, with the mean average falling between 7 and 8 (with the ceiling of 10 indicating complete certainty).

Mood symptoms for depression, anxiety and stress are shown in Figure 2. In summary, the persecutory group scored on average one category of severity higher than the grandiose group on all mood sub-scales, according to severity ratings for the measure (Lovibond & Lovibond 1995). However, as can be seen in Figure 2, the inter-quartile ranges are wide in both the persecutory and grandiose groups, and there is considerable over-lap.

Visual inspection of the data indicated a significant degree of skew in the distribution of scores on all symptoms measures, in both groups. This was confirmed using the Shapiro–Wilk test, which also indicated a non-normal distribution ($p<0.05$ for all variables). We therefore decided to use the Mann–Whitney test as a non-parametric alternative to an independent samples t-test, to compare means between the persecutory and grandiose groups. The results indicated no statistically significant difference between groups on all symptoms variables (see Figs 1, 2).

Aim 3: To describe psychological and pharmacological inpatient treatment received by participants with persecutory and grandiose delusions

All participants were offered up to five sessions of individual therapy during their inpatient admission as part of the amBITION trial. The number of sessions was flexible to accommodate differing lengths of inpatient stay. Participants completed on average between two and three sessions, and there was no difference in the average number of sessions people completed between the persecutory and grandiose groups (Table 2). No-one dropped out of treatment, and everyone completed at least one session of therapy (defined as the minimum 'dose' of therapy). At the end of the trial, participants were also asked to rate their satisfaction with the therapy they received. Satisfaction rates were high in both groups, with the average satisfaction rating slightly higher in the grandiose compared to the

Table 2. Description of inpatient treatment by delusion sub-type

	Persecutory (N = 30)		Grandiose (N = 11)	
Number of therapy sessions (max. of 5) attended				
Mean (SD)	2.83 (1.44)		2.82 (1.47)	
Range	1–5		1–5	
Satisfaction with therapy 0 (not satisfied at all) – 10 (completely satisfied)				
Mean (SD)	8.29 (1.85)		9.5 (0.926)	
(95% CI)	(7.51–9.07)		(8.73–10)	
Psychiatric medication during admission	A	R	A	R
Prescribed at least one medication	21 (70%)	30 (100%)	10 (91%)	11 (100%)
Prescribed anti-psychotic	20 (67%)	29 (97%)	10 (91%)	11 (100%)
Prescribed an anti-depressant	5 (17%)	7 (23%)	1 (9%)	1 (9%)
Prescribed a mood-stabilizer	1 (3%)	1 (3%)	3 (27%)	3 (27%)
% BNF max anti-psychotic dose on admission				
Mean (SD)	39 (23)	44 (27)	48 (26)	54 (31)
Range	13–100	8–100	13–138[1]	8–100
Duration of inpatient admission (days)				
Mean (SD)	30 (18.2)		28 (23.6)	
Range	9–97[2]		4–93	
Admission ≤30 days	18 (60%)		9 (82%)	
Admission >30 days	12 (40%)		2 (18%)	

A, on date of admission; R, on date of randomisation into study; [1]Values above 100% indicate patient was prescribed above BNF limit dose; [2]One patient had an admission of 160 days, and so was excluded from descriptive statistics for this variable on the basis it was a clear outlier (more than 60 days longer than next longest admission).

persecutory group overall (9.5 vs 8.3 respectively) but with overlapping 95% confidence intervals.

As shown in Table 2, most people in both persecutory and grandiose groups were taking an anti-psychotic on admission. This was usually an oral atypical anti-psychotic, with only a minority being on a depot medication. By the time people were randomised into the study, 100% of participants were prescribed at least one type of psychiatric medication, this normally being an anti-psychotic (but not clozapine, as is common within acute settings; Gee et al. 2014, 2017). The average anti-psychotic dose, expressed as a % of the maximum dose according to the British National Formulary (BNF), rose by about 10% in both persecutory and grandiose delusions groups between admission and randomisation (which occurred on average 11 days later). The average anti-psychotic dose was similar between groups at both admission and randomisation.

Collapsing persecutory and grandiose groups together, we noticed that more people who reported both delusions and voices (N = 21) were prescribed an anti-depressant during their admission than those who reported delusions only (N = 20), (8 vs 0 respectively; $\chi^2(1) = 9.47, p = 0.002$). We were interested in whether this might partly be explained by people who experienced both voices and delusions reporting higher depressive symptoms on admission, compared to those who reported delusions alone. As a secondary analysis, we therefore compared mean depression scores on admission between these two groups. We found the data did support this hypothesis, as the mean depression score on the DASS-21 on admission was higher for those reporting both delusions and voices (24.3) compared to those reporting delusions only (10.8), and this was a statistically significant difference (t(39) = –3.64, $p = 0.001$).

Discussion

The aim of this study was to describe the clinical and demographic profiles of people with persecutory and grandiose delusions who engaged in a psychological therapy during an acute admission, and to compare their symptom profiles and inpatient treatment received. We found that those with persecutory and grandiose delusions in our sample were broadly similar in terms of age, ethnicity, employment status, and diagnosis. This is consistent with previous findings that grandiose delusions are not exclusively associated with a diagnosis of bipolar disorder, rather than a schizophrenia-spectrum disorder, or the converse for persecutory delusions (Appelbaum et al. 1999). Previous findings on gender differences in delusion sub-types (Gutierrez-Lobos et al. 2001) indicated that women were more likely to report persecutory, and less likely to report grandiose delusions, compared to men. Our findings on gender and delusion sub-type were actually in the

opposite direction, with 79% of men in the sample reporting persecutory delusions compared to 62% of women. However, these findings should be interpreted with caution as men outnumbered women in our sample, due to recruitment for the study mainly coming from single-gender male wards.

Hearing voices in addition to delusional beliefs was reported in both groups but was slightly more commonly associated with persecutory delusions. The majority of people in both groups were admitted to hospital involuntarily under a section of the MHA, were already known to secondary mental health services on admission, and had a history of previous admissions. Data on receipt of previous psychological therapy indicated that people were interested in taking up the offer of a talking therapy in hospital, even if they had previously declined therapy in the community, or indeed had never been offered any.

Symptom measures completed at the start of therapy showed that both persecutory and grandiose delusions were rated on average as occurring at least once a day, with persecutory delusions rated as slightly more distressing on average than grandiose delusions. However, it is important to emphasise that grandiose delusions were still associated with significant distress, with average distress ratings above the mid-way mark on a 1–10 self-report scale. We also found that high levels of depression, anxiety and stress were reported in people with both persecutory and grandiose delusions. There was some indication that overall mood symptoms were more severe in the persecutory delusions group, and this is consistent with findings from previous studies (Smith et al. 2006; Garety et al. 2013). We also found that people who reported voices in addition to delusions reported higher depressive symptoms, compared to those reporting delusions alone. This fits with previous findings that voices are strongly associated with both depression and low self-esteem (Smith et al. 2006). This might indicate that people with persecutory delusions may particularly benefit from additional help with low mood, anxiety and stress during inpatient treatment, particularly if they also hear voices.

All of our participants could be considered to have insight in that they were willing to engage in psychological therapy; however, they simultaneously had high conviction that their delusions were 'real' rather than a symptom of mental illness, and most were admitted to hospital involuntarily. They therefore would not meet the *awareness* or *attribution* criteria according to the multi-dimensional model of psychiatric insight proposed by David (1990). These findings are consistent with evidence from qualitative studies that there is often a chasm between patient and psychiatrist concepts of insight (Galasinski & Opalinski, 2012) with patients commonly frustrated that being labelled as lacking insight is often used to invalidate complaints about coercive treatment

decisions (Nyttingnes et al. 2016). Furthermore, 18/41 (44%) participants in this study rated their conviction/believability as <10 (where 10 is completely certain) which is consistent with previous findings, that around 50% of people who engage in a psychological therapy are open to the possibility of being mistaken about their delusional belief (Garety et al. 2005).

In terms of limitations to the study, all data were collected as part of a psychology therapy trial, and so would not necessarily be generalizable to inpatient populations in general. For example, all participants had to have capacity to consent to take part in a research study; however, this did include many participants admitted to hospital under a section of the MHA (30 out of 41 participants in the current sample). We do not know though whether these findings on clinical profiles would be representative of all people admitted to hospital with persecutory or grandiose delusions, including those without capacity to consent to take part in research studies. All symptoms measures used in the trial were self-report. It is possible that people may have over or under-reported difficulties either due to the demand characteristics of the trial, or the conflict between honest disclosure of symptoms and concern that this may delay discharge from hospital. Future studies could include both self-report and clinician-rated measures, such as the PANSS (Kay et al. 1987) to account for possible discrepancies between subjective and objective symptom measures. A further limitation is that we did not specifically assess manic symptoms, such as expansiveness of mood, euphoria or irritability. Therefore, it is possible that whilst both people with persecutory and grandiose delusions reported high levels of anxiety and depression, people with grandiose delusions might also report higher levels of manic mood symptoms. We also acknowledge that persecutory and grandiose delusions should not be seen as mutually exclusive; people may hold several different types of delusions beliefs at the same time (Jolley et al. 2006; Raune et al. 2006). However, for the purposes of the trial, people were asked to identify and rate their main concern on admission, and this was counted as the main presenting belief. The main constraint on interpretation of these data comparing people with persecutory and grandiose beliefs likely arises from the small sample size (N = 41) and unequal numbers of people with each delusion sub-type. However, this is consistent with previous inpatient studies which report that persecutory delusions are much more common than grandiose delusions (Appelbaum et al. 1999). A common challenge for any study of grandiose delusions is therefore recruitment of large enough numbers of eligible people from routine clinical populations. Future studies could also examine clinical outcomes for people with less common sub-types of delusions which do not fall into persecutory or grandiose

categories, to determine whether they constitute a group of people with differing needs to other presentations of delusional beliefs.

Conclusion

In conclusion, we would make some brief suggestions for clinical implications of these findings in terms of who should be offered psychological therapy during an acute inpatient admission. Our data is consistent with the policy set out in UK clinical guidelines for psychosis (NICE 2014), in that everyone should be offered the opportunity to access a psychological therapy, regardless of delusion sub-type or other symptom characteristics. In particular, people with grandiose delusions should be offered therapy on an equal basis with those with persecutory delusions, because grandiose beliefs can also cause distress for the individual. Furthermore, data from this study indicated that people with grandiose delusions completed the same average number of therapy sessions, and were equally satisfied with therapy, compared to those with persecutory delusions. Our data also indicate that being admitted to hospital involuntarily, or not previously being offered or receiving therapy, should not preclude people from being offered therapy during an inpatient admission. Clinicians are often concerned that an acute admission is not the right time to offer a psychological therapy, due to the need to wait for acute psychotic symptoms to abate. However, all our trial participants were still reporting frequent and distressing symptoms at the beginning of therapy, and one could argue that this might increase an individual's motivation to seek help, as difficult emotions and thoughts are more readily accessible. This is consistent with other recent UK inpatient trials, which have also shown that brief interventions are feasible and acceptable for people with acute psychotic symptoms (Sheaves et al. 2017; Wood et al. 2017).

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Appendix 1: Self-rating scales for psychotic symptoms (beliefs and voices)

Beliefs

Write down the belief you are rating in your own words:

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1) Frequency

On average, how often have you thought about this belief in the past week?

Please circle a number.

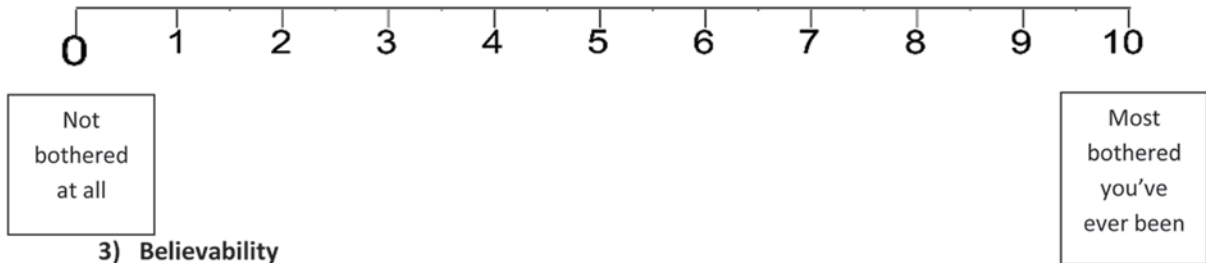| 1	2	3	4	5	6	7
Never	Less than once a week	About once a week	Several times a week	Daily	More than once a day	Almost constant
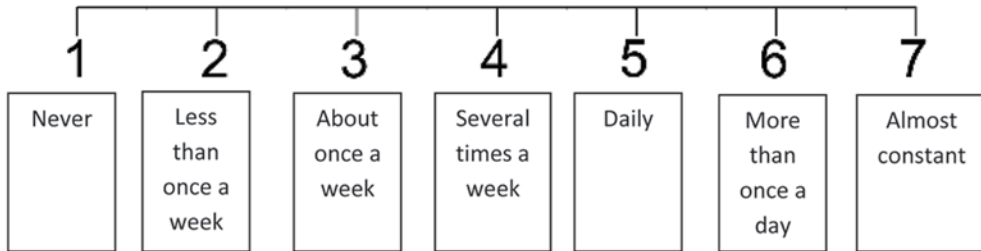
2) Distress

On a scale from 0 to 10, how bothered are you when you think about this belief?

Please circle a number.

(0 means not bothered at all and 10 means the most bothered you've ever been)

0   1   2   3   4   5   6   7   8   9   10

Not bothered at all
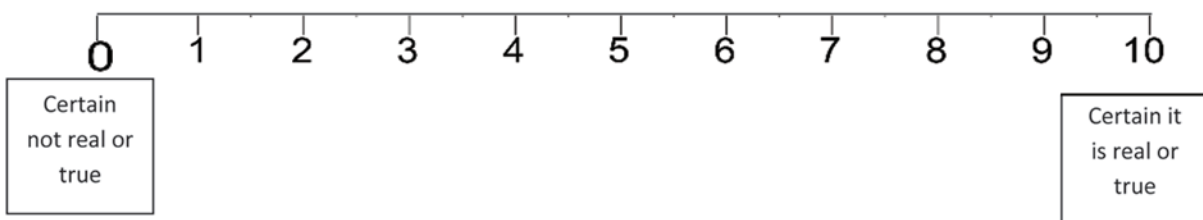
Most bothered you've ever been

3) Believability

On a scale from 0 to 10, when you think about this belief, how much do you believe that it is real, or true?

Please circle a number.

(0 means that you are certain it is not real or true, and 10 means you are absolutely certain that it is real or true?)
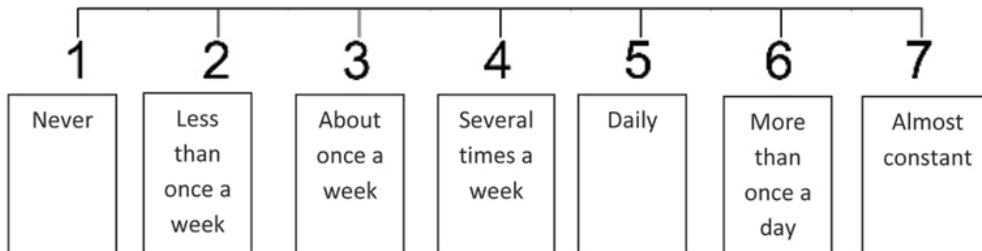
0   1   2   3   4   5   6   7   8   9   10

Certain not real or true

Certain it is real or true

Voices

1) Frequency

On average, how often have you heard voices in the past week?

Please circle a number.

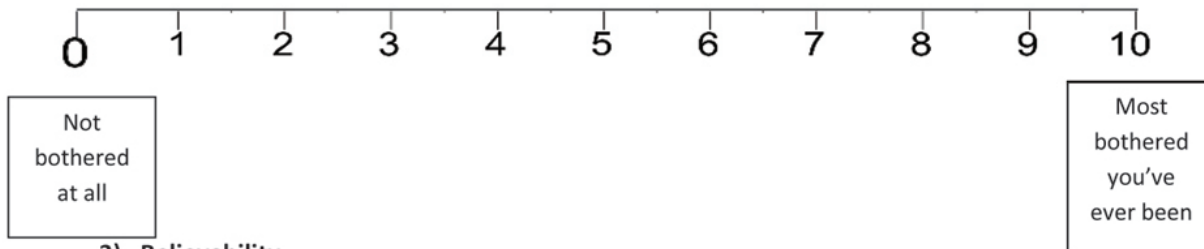| 1	2	3	4	5	6	7
Never	Less than once a week	About once a week	Several times a week	Daily	More than once a day	Almost constant

2) Distress

On a scale from 0 to 10, how bothered are you when you hear the voices?

Please circle a number.

(0 means not bothered at all and 10 means the most bothered you've ever been)

0　1　2　3　4　5　6　7　8　9　10

Not bothered at all

Most bothered you've ever been

3) Believability

On a scale from 0 to 10, how much do you believe that when you hear voices that they are real, or true?

Please circle a number.

(0 means that you are certain it is not real or true, and 10 means you are absolutely certain that it is real or true?)

0　1　2　3　4　5　6　7　8　9　10

Certain not real or true

Certain it is real or true