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Imagery-focused cognitive therapy (ImCT) for mood instability and anxiety in a small sample of patients with bipolar disorder: a pilot clinical audit

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Abstract

Background—Despite the global impact of bipolar disorder (BD), treatment success is limited. Challenges include syndromal and subsyndromal mood instability, comorbid anxiety, and uncertainty around mechanisms to target. The Oxford Mood Action Psychology Programme (OxMAPP) offered a novel approach within a cognitive behavioural framework, via mental imagery-focused cognitive therapy (ImCT).

Aims—This clinical audit evaluated referral rates, clinical outcomes and patient satisfaction with the OxMAPP service.

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Conflict of interest

EAH held a Wellcome Trust Clinical Fellowship (WT088217) supporting SAH and KY. EAH and SEB were also supported by the Medical Research Council (United Kingdom) intramural programme (MC-A060-5PR50 to EAH) including a Medical Research Council Career Development Fellowship to MDS. JRG is a NIHR Senior Investigator. Biomedical Research Centre Programme. CGF holds a Principal Research Fellowship from the Wellcome Trust (046386). LI was supported by the National Institute for Health Research (NIHR-DRF-2011-04-076 to LI). GMG holds a grant from Wellcome Trust, holds shares in P1vital and has served as consultant, advisor or CME speaker for AstraZeneca, MSD, Eli Lilly, Lundbeck (/Otsuka or /Takeda), Medscape, P1vital, Pfizer, Servier. The remaining authors declare no conflict of interest.

Method—Eleven outpatients with BD received ImCT in addition to standard psychiatric care. Mood data were collected weekly from 6 months pre-treatment to 6 months post-treatment via routine mood monitoring. Anxiety was measured weekly from start of treatment until 1 month post-treatment. Patient feedback was provided via questionnaire.

Results—Referral and treatment uptake rates indicated acceptability to referrers and patients. From pre to post-treatment, there was (i) a significant reduction in the duration of depressive episode relapses, and (ii) a non-significant trend towards a reduction in the number of episodes, with small to medium effect size. There was a large effect size for the reduction in weekly anxiety symptoms from assessment to 1 month follow-up. Patient feedback indicated high levels of satisfaction with ImCT, and underscored the importance of the mental imagery-focus.

Conclusions—This clinical audit provides preliminary evidence that ImCT can help improve depressive and anxiety symptoms in BD as part of integrated clinical care, with high patient satisfaction and acceptability. Formal assessment designs are needed to further test the feasibility and efficacy of the new ImCT treatment on anxiety and mood instability.

Keywords

Bipolar disorder; mental imagery; anxiety; mood instability

Introduction

Bipolar disorder (BD)¹ is a chronic, recurrent illness characterized by periods of depression interspersed with periods of elevated mood known as (hypo)manic episodes. It affects at least 1% of the population (Merikangas et al., 2007) with community prevalence rates of 5% or more (Mansell & Pedley, 2008). BD accounts for up to 10% of the global health burden of mental health and substance misuse disorders (Whiteford et al., 2013), and has the highest risk of completed suicide amongst all psychiatric disorders (Hawton, Sutton, Haw, Sinclair, & Harriss, 2005). Despite the severity and impact of BD, treatment is inadequate at present, with both pharmacological and psychological approaches showing limited success. For example, review and meta-analysis data show that treatment with lithium (the gold standard intervention for overall relapse prevention in BD, see Miura et al. 2014) reduces the risk of relapse by only 34% (Severus et al., 2014), while individual psychological interventions (in addition to medication) for BD are associated with a 26% reduction in risk at follow-up (Oud et al., 2016). Accordingly, recent clinical guidelines for bipolar disorder call for improvements in psychological treatment, in particular for tackling symptoms of anxiety, as well as a focus on hitherto neglected cognitive features of the disorder such as emotional mental imagery (Goodwin, 2016)

BD is primarily treated pharmacologically (Goodwin, 2016). Lithium is the gold standard, but is satisfactory for only a minority of patients (Alda, 2015). Adding psychoeducation or psychotherapy to pharmacological treatment may improve clinical outcomes (Geddes &

¹We use terms such as ‘bipolar disorder’ and ‘illness’ as the work took place within a tertiary psychiatry-led service, which necessitated a diagnosis of bipolar disorder to access. The terms therefore reflect the treatment setting. However, we acknowledge that some individuals who would meet diagnostic criteria for bipolar disorder may reject these labels in relation to themselves (see e.g., BPS, 2015) and that there are many ways for individuals to describe the experiences and phenomena we have documented.

Miklowitz, 2013), and this is now recommended by the National Institute for Health and Care Excellence (National Institute for Health and Care Excellence [NICE], 2014) and the British Association for Psychopharmacology (Goodwin, 2016). Cognitive behavioural therapy (CBT) is a treatment of choice for unipolar depression and has been adapted for bipolar disorder (Lam, Hayward, Watkins, Wright, & Sham, 2005; Lam et al., 2003; Scott & Colom, 2008; Scott et al., 2006). However, the results of large-scale randomised controlled trials (RCTs) have proved disappointing (see Szentagotai & David, 2010 for a discussion) and the recommendation of CBT for bipolar disorder remains controversial (Jauhar, McKenna, & Laws, 2016). Recent-onset bipolar disorder may offer the most tractable target for psychological treatments and one recent pilot study has reported positive results versus treatment as usual, presenting one possible avenue for further research (Jones et al., 2015). There are few theory-driven intervention approaches to bipolar disorder and they are all still at an early stage. Developments are therefore welcome. First, the interpersonal and social rhythms therapy (IPSRT; Frank, Swartz, & Kupfer, 2000) posits that a key driver of psychopathology in bipolar disorder is the combined dysfunction in circadian social rhythms and interpersonal difficulties. However, despite great promise, a recent review suggested results of IPSRT to be inconclusive (Oud et al., 2016). Second, a novel cognitive therapy model, the integrative cognitive model for bipolar disorder (Palmier-Claus, Dodd, Tai, Emsley, & Mansell, 2016) proposes that extreme appraisals of changes in internal state and their impact on behaviour provide a core mechanism in maintaining and escalating bipolar symptoms (Searson, Mansell, Lowens, & Tai, 2012). A randomized controlled trial is currently in progress (Mansell et al., 2014). There is clearly a need for novel approaches to innovation in treatment for BD, and for symptoms of anxiety in particular (Stratford, Blackwell, Di Simplicio, Cooper, & Holmes, 2015).

Some of the reasons that treatment success in BD is limited, and that treatment innovation remains a challenge, relate to particular features of the disorder: namely 1) syndromal and subsyndromal mood instability, 2) co-morbid anxiety symptoms and 3) identifying how to target key mechanisms that drive these features. The first of these, mood instability, refers to persistent fluctuations in depressive and manic symptoms over time at both syndromal and subsyndromal levels, and is a key problem that has a negative impact on functioning in BD (Marangell et al., 2009). Here we consider the duration and frequency of mood episodes pre and post-treatment using routinely captured data from a mood disorders clinic. Second, a key neglected factor that complicates the treatment of BD is the frequent lifetime comorbidity of anxiety disorders (up to 90%) (Merikangas et al., 2007) and anxiety symptoms in general (Stratford et al., 2015). Anxiety symptoms have been related to worse prognostic factors such as rapid mood cycles, higher illness severity, less euthymic days and higher suicidality (Simon, Hunkeler, Fireman, Lee, & Savarino, 2007), in addition to poorer functioning and worse treatment response (Goodwin, 2016). Recently, a new diagnostic specifier was introduced in the Diagnostic and Statistical Manual 5th Edition (DSM-5; American Psychiatric Association, 2013) described as an anxious distress specifier. This aims to identify patients with bipolar disorder with anxiety symptoms additional to the bipolar disorder criteria, which may include (though not exclusively) those who meet full criteria for an additional anxiety disorder. Third, to address mood instability and anxiety in bipolar disorder, treatments need to target key cognitive mechanisms (Bilderbeck et al.,

2016; Holmes et al., 2011; O'Garro-Moore, Adams, Abramson, & Alloy, 2015) that are hypothesized to drive these features.

The Oxford Mood Action Psychology Programme (OxMAPP) offered clinical psychology input for bipolar disorder within a tertiary psychiatry-led service (the Professorial Mood Disorders Clinic, Oxford Health NHS Foundation Trust). OxMAPP aimed to address the challenges to treatment in BD with three areas of innovation: 1) a fine-grained method of capturing treatment outcome, 2) focus on anxiety, and 3) use of techniques to target a key hypothesized cognitive mechanism in BD: mental imagery. First, we measured outcome over repeated time points (weekly) via a remote mood monitoring system "True Colours" (Miklowitz et al., 2012), rather than at single assessments pre and post-therapy. This allows a better characterization of illness course than that measured at a single time point (Judd et al., 2002; Malik, Goodwin, & Holmes, 2012). Second, our psychology input aimed to focus on anxiety symptoms, following emerging evidence that psychological treatments can address anxiety in bipolar disorder (Stratford et al., 2015).

Third, our treatment aimed to target mental imagery as a promising mechanism thought to drive both mood instability and anxiety in bipolar disorder. Mental imagery is the experience of a sensory stimulus in the absence of a percept ('seeing in the mind's eye') (Pearson, Naselaris, Holmes, & Kosslyn, 2015). Whilst mental imagery often involves a visual component, it can include any of the five senses. For example, an individual who has been in a road traffic accident might experience a vivid visual image of a car coming towards them, accompanied by the sound of screeching tyres and the smell of rubber burning. All of these modality components are forms of mental imagery. Emotional mental imagery is prevalent in bipolar disorder (Di Simplicio et al., 2016; Hales, Deeprose, Goodwin, & Holmes, 2011; Ng, Burnett Heyes, McManus, Kennerley, & Holmes, 2015). Imagery has been found to have a more powerful effect on emotion than verbal thought of the same content, and is implicated in the maintenance of anxiety disorders (see Hirsch & Holmes, 2007 for a review). We have hypothesized that imagery might act as an 'emotional amplifier' in BD, intensifying states of anxiety, depression and mania (Holmes, Geddes, Colom, & Goodwin, 2008; Malik, Goodwin, Hoppitt, & Holmes, 2014; Ng, Di Simplicio, & Holmes, 2016). Therefore targeting emotional mental images may reduce anxiety, depression and manic symptoms. Drawing on this theoretical model, we provided psychological treatment via imagery-focused cognitive therapy (ImCT) for people with BD (including non-visual modalities if appropriate). This targeted mental imagery using a variety of therapy techniques (see method), following the hypothesis that this would lead to reductions in anxiety and mood instability.

To evaluate the OxMAPP psychological treatment input we conducted an audit. Procedures were executed in compliance with relevant institutional guidelines; accordingly the audit was registered and approved by the Oxford Health NHS Foundation Trust Quality and Audit team (Oxford Health National Health Service [NHS] Foundation Trust, 2013) and did not require additional ethical approval from a committee. The audit had the following aims:

- To assess the number of patients referred and key presenting problems

- To assess change in mood in terms of weekly mania and depression scores (as measured by the local mood monitoring system – see footnote in outcome measures) before and after the psychological intervention
- To assess anxiety as a further patient outcome before and after the psychological intervention
- To collect indications of patient satisfaction

The outcomes of the audit were intended to refine our clinical treatment, with the aim of reaching a state from which a formal evaluation would be possible (Holmes et al., 2016).

Method

Participants

Patients were referred to OxMAPP via their psychiatrist in The Oxford Professorial Mood Disorders Clinic. Referral criteria were: a) 18 – 65 years old, b) *Diagnostic and Statistical Manual of Mental Disorders, Fourth edition, Text Revision* (American Psychiatric Association, 2000) diagnosis of Bipolar Disorder (I, II or NOS), assessed via the Structured Clinical Interview for DSM-IV-TR, c) adequate English language fluency to complete assessment measures and intervention, d) residing in the geographical area of the local NHS trust, and e) having ongoing clinical contact with a named psychiatrist for risk management and overall clinical care. Exclusion criteria were: a) learning difficulties, organic brain disease, severe neurological impairment, b) current severe substance or alcohol misuse, c) current manic episode, d) current active psychotic symptoms, e) high risk of suicide or self-harm, f) unwilling to engage actively in treatment or to use an imagery-focused approach, g) taking part in concurrent treatment studies for BD.

Outcome measures

Changes in mood (depression and mania)—Self-report measures of depression and mania, each rated over the past seven days, were: the Quick Inventory of Depressive Symptomatology, Self-Report (QIDS-SR; Rush et al., 2003), a widely used 16-item questionnaire assessing the nine DSM IV-TR (American Psychiatric Association, 2000) major depressive disorder symptoms; and the Altman Self-Rating Scale for Mania (ASRM; Altman, Hedeker, Peterson, & Davis, 1997), a commonly used five-item scale designed to assess the frequency and severity of manic symptoms. The QIDS-SR and ASRM were completed weekly (online or via text message) using the True Colours mood monitoring system² (Miklowitz et al., 2012), in which all patients were enrolled as part of routine clinical care in the Professorial Mood Disorders Clinic. Data were available for a period of 6 months prior to the start of OxMAPP input (hereon referred to as ‘baseline’ period), during OxMAPP assessment and treatment, and for 6 months after OxMAPP treatment completion (hereon referred to as ‘follow-up’ period). For each patient, we calculated for the baseline and follow-up period:

²True Colours is an online self-management system, allowing patients to monitor symptoms of depression and (hypo)mania using text, email and the internet managed by the True Colours Team, University of Oxford, Department of Psychiatry, Oxford, UK. <https://oxfordhealth.truecolours.nhs.uk/en/>

- a) As a simple indicator of mood instability, the duration and number of depression and (hypo)mania episodes. A depressive episode was defined by a QIDS-SR score ≥ 10 on two consecutive weekly ratings; a manic episode was defined by an ASRM score of ≥ 10 on a single weekly rating. Episode duration was scored in number of weeks.
- b) The severity of self-reported symptoms of depression and mania by pooling weekly scores on the QIDS and ASRM in each time period to obtain mean values.

Anxiety—Self-reported symptoms of anxiety were measured using the Beck Anxiety Inventory (BAI; Beck & Steer, 1993), a 21-item questionnaire assessing common symptoms of anxiety (such as numbness and tingling; fear of the worst happening) over the past week. The BAI was completed weekly via pen and paper from the first OxMAPP assessment session until one month after treatment completion. The severity of self-reported symptoms of anxiety was computed for each patient by pooling weekly BAI scores in each time period (assessment, treatment and 1 month after treatment completion) to obtain mean values.

Indications of patient satisfaction—Patient satisfaction was indicated using the OxMAPP Patient Experience Questionnaire, designed specifically for OxMAPP. The questionnaire consisted of 31 questions, each rated on a 5-point Likert scale, assessing 7 domains: (i) overall satisfaction with OxMAPP; (ii) satisfaction with the treatment programme as a whole (including assessment, treatment and follow-up), (iii) satisfaction with the clinical outcomes of treatment; (iv) satisfaction with the relationship with OxMAPP therapists; (v) the impact of OxMAPP post-treatment in terms of quality of life; (vi) the perceived importance of use of co-therapists and (vii) the perceived importance of the imagery-based focus of therapy. Scores of individual items in each domain were averaged into a single combined domain score. The questionnaire was either given to the patient in person by a psychology assistant or sent via post after the final follow-up session. Therapists were not present whilst the questionnaires were completed. Feedback interviews were also conducted with a subset of patients to gain further qualitative information on how the treatment was perceived (data not presented here).

OxMAPP procedure and treatment

Therapists—Five experienced clinical psychologists (EH, SH, SB, LI, KY) and one psychiatrist with post-qualification training in cognitive-behaviour therapy (MDS) conducted the treatment. All sessions were conducted with two therapists present (known as co-therapists), the combination of which varied throughout treatment. There were several benefits of this approach – it enabled new colleagues to be trained and supervised closely in the therapeutic procedure, and we hypothesized that using co-therapists enhanced a non-hierarchical, collaborative problem-solving relationship between the patient and therapists³.

³Whilst our clinical judgement was that the co-therapy model had significant benefits, and we enjoyed working in this way, it is unlikely to be an essential part of the intervention. Having two therapists would also likely be beyond the resources of most clinical settings. Nonetheless, our patients reported this model to be helpful (see results section).

Assessment—Patients completed a four-session structured assessment, which identified their priorities for treatment, the history and course of their bipolar disorder and other life events, prodromes of depressive/(hypomanic) episodes, and current positive coping strategies. As part of this, an imagery target was identified as a focus for the treatment. This could be a recurrent single image or small set of images, a paucity of positive imagery, or a problematic relationship with imagery (such as believing that having an image of an event makes it real). The target was selected on the following criteria: (i) it was distressing or had a significant impact on the patient in its own right, (ii) it was discrete, definable and judged by the therapists to be tractable in a brief intervention based on prior experience of working within a time-limited cognitive behavioural paradigm, and (iii) it held a plausible link with the patient's mood instability (Hales et al., 2015).

Treatment: Imagery-focused Cognitive Therapy (ImCT)—In the first treatment session, an imagery microformulation (Hales et al., 2015) was collaboratively completed with each patient, to describe the content, meaning, emotional impact, and behavioural response to the target imagery symptom. Imagery techniques were used alone or in combination, according to the individuals' formulation, and included (1) imagery rescripting, (2) positive imagery techniques, (3) imagery competing tasks, and (4) meta-cognitive imagery techniques. In imagery rescripting, distressing or maladaptive images are transformed into more functional, benign ones. Positive imagery strategies help the patient to form soothing or mood enhancing images and to increase access to these through practice. In imagery competing strategies, concurrent visuospatial tasks (such as a computer game or art activity) are used to dampen down problematic imagery. Metacognitive strategies demonstrate that images are simply mental representations ('an image is just an image') rather than possessing emotionally significant meaning.

Imagery techniques were used as the primary treatment intervention, supported by other over-arching cognitive-behavioural principles known to be particularly important for this population according to the research literature. These included 'scaffolding' of therapy, strategies to aid stabilization of mood ('blip management') and therapist promotion of a self-compassionate stance. Clear communication and liaison with other mental health professionals was integral to the approach.

The term 'scaffolding' refers to techniques designed to compensate for cognitive impairments present in bipolar disorder and to support the client to fully engage in the therapy. For instance, creating visual aids like postcards for key pieces of learning, or providing reminders of therapy sessions via letter or text message. Given that the key feature of bipolar disorder is chronic mood instability, management of problematic mood 'blips' was a key skill modelled over the course of the OxMAPP sessions. Examples of 'blip management' strategies include (re)instatement of behavioural routines that promote mood stability, and identification or strategies that have previously been effective in managing mood. Promotion of a compassionate stance aimed to compensate for self-criticism and low self-esteem, frequently documented in this population and a transdiagnostic risk factor for mental health problems. Traditional cognitive therapy techniques focusing on verbal cognitions, such as verbal thought records and verbal thought challenging, were not used.

Further description of all techniques used are detailed in the MAPP manual, available via the authors on request.

Treatment consisted of three to eight one-hour sessions completed weekly or fortnightly (number of sessions determined by clinical need, mean=6.27, SD=1.68). Average therapy duration was 31.6 weeks (SD=8.88), including both assessment and treatment sessions. Throughout treatment, the focus was on targeting identified distressing/problematic mental imagery, following our hypothesis that this would result in reduced anxiety and mood instability. At the end of treatment, two consolidation sessions were held during which patients prepared a video record of important parts of their learning, as a visual therapy 'blueprint'. Patients were given a DVD copy of the video for future reference. A case study of treatment anonymized in line with good practice guidelines (BPS, 2008) is presented in box 1 below for illustrative purposes (see also, Hales et al., 2015; Holmes, Hales, Di Simplicio, & Young, 2017, in preparation).

Follow-up—Patients were offered spaced follow-up sessions over a mean period of 17 months (SD=8.77), to further consolidate their learning (number of sessions determined by clinical need, mean=5.27, SD=3.95). In these sessions only previous strategies were revisited to allow generalisation to new situations where appropriate.

Data analysis

For changes in mood (indicators of mood instability), duration and number of relapse episodes for depression and mania were compared using nonparametric Wilcoxon related samples signed rank tests. For the analysis of the severity of repeated weekly self-reported symptoms of mood and anxiety, effect sizes of change of each individual case were calculated using Cohen's *d* (Cohen's *d* for each case = (Mean at baseline – Mean after treatment) / pooled group within subject SD for that case, where the pooled group within subject SD for that case = $[(SD^2 \text{ for that case at baseline} + SD^2 \text{ for that case after treatment})/2]$). A mean effect size was then calculated across all cases. For weekly data collected via True Colours (QIDS-SR and ASRM), the six months prior to assessment and six months post-treatment were used as “baseline” and “post-treatment”. For the BAI (completed from start of assessment to one-month post-treatment), the assessment period and one month post-treatment were used as “baseline” and “post-treatment”. For indication of patient satisfaction, descriptive statistics were computed for the domains of the Patient Experience Questionnaire.

Results

Participant characteristics

Twenty-two patients were referred to OxMAPP, of whom nineteen met referral criteria (see Methods) and were offered assessment. One declined to attend assessment due to work commitments and one failed to attend. Of the remaining seventeen who were assessed, five were not offered OxMAPP treatment for the following reasons: current manic episode (1), current suicidality (2), current severe depressive episode requiring hospitalisation (1), no obvious target for ImCT (1). Twelve patients started ImCT, but one dropped out after two

sessions citing work difficulties. Eleven patients (mean age=35.65 years, SD=12.01) completed treatment and follow-up sessions, and gave written consent for their data to be included in the audit. For demographic characteristics see Table 1.

Clinical characteristics, medication and presenting problems are detailed in Table 2: nine patients had a current co-morbid anxiety disorder and five were currently experiencing an episode of depression. Ten of the eleven patients were currently being treated with medication.

Clinical outcomes: change in mood

Out of 11 cases, 1 patient had stopped the mood monitoring via True Colours prior to starting treatment; therefore no baseline data for depression and mania were available. Final analysis was run on 10 patients. The average number of missing weekly data points was 2.3 (SD=3.7) during baseline and 2.1 (SD=2.9) during follow up. Given the few missing values, we conducted a complete case analysis based on the assumption that few missing data are missing completely at random (Everitt & Dunn, 1991).

Duration and number of depressive and manic episodes

Episode duration and mean number of episodes during baseline and follow-up are described in Table 3.

Comparing depressive episodes from baseline to follow-up, results showed a statistically significant reduction in the duration of episodes (nonparametric Wilcoxon related samples signed rank test: $T=2.37$, $p=.02$), and a non-significant trend towards a reduction in the number of episodes (nonparametric Wilcoxon related samples signed rank test: $T=1.73$, $p=.08$). In particular, out of 7 patients experiencing a depressive episode during the 6 month baseline, only 2 had a depressive relapse during follow-up and all relapses were of shorter duration (Figure 1). There were no statistically significant changes in the duration and number of manic episodes from baseline to follow-up (all p s > .1; see Table 3).

Severity of repeated weekly self-reported symptoms of depression and mania

Results showed a small reduction in depressive symptoms indexed by a small to medium effect size for change in QIDS-SR scores from baseline to follow-up ($d=0.38$), while for mania scores the effect size for change was negligible (ASRM $d=0.07$).

Clinical outcomes: anxiety

Results showed a large reduction in anxiety indexed by a large effect size for change on BAI scores ($d=2.82$) from assessment to 1 month follow-up after treatment completion (Figure 2).

Indications of patient satisfaction

Ten patients (nine females) filled in the OxMAPP Patient Experience Questionnaire. We were unable to contact the remaining patient due to discharge from the mood disorders clinic.

The mean overall level of satisfaction with OxMAPP was 4.80 (SD=0.63), where 5 is the highest rating possible. High levels of satisfaction were also reported for the treatment programme as a whole (mean=4.65, SD=0.53), and for its individual components: assessment (mean=4.80, SD=0.42), treatment (mean=4.60, SD=0.70) and follow-up (mean=4.60, SD=0.70).

In terms of clinical outcomes, patients expressed overall satisfaction (mean=4.29, SD=0.78), with OxMAPP, with high ratings of satisfaction (all means > 4.20) in particular for: “feeling more in control of my mood”, “helped me to cope in a crisis”, “helped me to treat my distressing imagery flashbacks and/or flashforwards”, “helped me to find positive/helpful ways of thinking”. Overall, patients rated OxMAPP as having a positive impact on their quality of life post-treatment (mean=4.00, SD=0.98).

Patient satisfaction in terms of their relationships with the OxMAPP therapists was high (mean=4.98, SD=0.53) and the use of co-therapists was also reported to be helpful (mean=4.5, SD=0.85). Patients rated the imagery focus of the therapy as important (mean=4.7, SD=0.68).

Discussion

We conducted a clinical audit of a novel clinical psychology input for bipolar disorder, the Oxford Mood Action Psychology Programme (OxMAPP), within a tertiary psychiatry-led service for bipolar disorders. OxMAPP delivered imagery-focused cognitive therapy (ImCT), a novel intervention based on our expertise in cognitive therapy utilising mental imagery (Holmes, Arntz, & Smucker, 2007; Holmes et al., 2016; Holmes et al., 2017, in preparation), to 11 patients with bipolar disorder. Referral and treatment uptake rates indicated acceptability to referrers and patients. From pre to post-treatment, there was (i) a significant reduction in the duration of depressive episode relapses, and (ii) a non-significant trend towards a reduction in the number of episodes, with small to medium effect size. There was a large effect size for the reduction in weekly anxiety symptoms from assessment to 1 month follow-up. Patient feedback indicated high levels of satisfaction with ImCT, and underscored the importance of the mental imagery-focus. Further detail is given below.

First, we examined referral rates. Of the patients referred for ImCT, a high proportion (19 out of 22) were considered suitable for assessment and 11 of 12 participants who were then offered treatment completed all sessions. This indicates that ImCT for BD was well-accepted by patients.

Second, we explored if ImCT would produce changes in mood both in terms of acute illness episodes and of continuous presence of symptoms measured weekly over time, as indicators of mood instability. Using the True Colours system (www.truecolours.nhs.uk) we measured our intervention against repeated symptom scores, rather than against single assessments pre and post therapy. Our data show a promising indication that ImCT could significantly reduce the duration of acute depressive episodes. A small effect was also found on the reduction of depressive symptoms - including subsyndromal ones - over six month follow-up compared

to six month baseline, consistent with previous imagery-based protocols in unipolar depression (Brewin et al., 2009).

Third, in terms of other patient outcomes, we explored the impact of ImCT on anxiety, as this remains a major problem for bipolar patients (Marangell et al., 2009; Otto et al., 2006) with as yet poor treatment options (Stratford et al., 2015). ImCT produced a large reduction in self-reported anxiety measured over repeated weekly assessments for one month after the end of treatment compared to during the initial assessment phase. These preliminary findings are in keeping with the literature on the association between mental imagery and anxiety (Hirsch & Holmes, 2007) and on imagery-based therapy approaches for anxiety (Arntz, Tiesema, & Kindt, 2007; Clark & Wells, 1995; Patel et al., 2007). Therefore, an imagery-focused approach in treating anxiety symptoms in the context of bipolar disorder should be further investigated.

Finally, we examined patient satisfaction. Overall, satisfaction with the OxMAPP input was high. In particular, high importance was attributed to the imagery focus in therapy and there was high appreciation for the treatment of imagery flashbacks and flashforwards. These evaluations support the idea that distressing intrusive mental imagery could contribute to maintaining mood instability and anxiety symptoms in BD, as suggested by previous findings (Holmes et al., 2011). Important clinical outcomes highlighted by patients included developing strategies to control mood and a positive impact on their daily quality of life. Therefore, ImCT could be further developed in particular to target persistent subsyndromal symptoms impacting on daily functioning (Strejilevich et al., 2013). Interestingly, satisfaction with usefulness of two co-therapists, rather than a single therapist, was rated highly. In addition, patient feedback indicated that the co-therapists had explained the treatment approach in such a way that it was very understandable. This collaborative approach and effort to enhance patient understanding of the techniques used may have aided the efficacy of the therapy. Further qualitative analysis of these unique aspects of treatment would prove helpful to better understand the factors contributing to patient satisfaction. Given the resource implications of the co-therapy model, future studies should also establish whether our two therapist approach is cost-effective compared to a single therapist.

Addressing anxiety symptoms remains a crucial unmet need of this population (Goodwin, 2016; Stratford et al., 2015) that only one trial has recently attempted to target (Jones et al., 2013) with results forthcoming. Further work is therefore called for. Based on this so-far promising imagery based intervention, and consistent with experimental evidence on the association between biases in emotional mental imagery and anxiety in bipolar patients (Di Simplicio et al., 2016), further efforts at treatment innovation for anxiety in bipolar disorder could capitalize on targeting imagery as a maintenance mechanism.

Mania represents another challenge for psychological interventions in bipolar disorder, in particular in young people where pharmacological treatment is more problematic (Vallarino et al., 2015). While mental imagery might be associated with amplification of manic symptoms (Ng et al., 2017), the ImCT protocol did not target mania symptoms in this study. Accordingly no significant change in the number and duration of manic episode was observed; however experimental studies (O'Donnell, Di Simplicio, Brown, Holmes, &

Burnett Heyes, in press) suggest that positive imagery is involved in positive mood escalation and ImCT adaptations for mania could be explored.

While the clinical outcomes in the audit show promise for the ImCT treatment approach, collection of outcome data from clinical practice limits the conclusions that can be drawn about potential efficacy of the treatment investigated. For example, the design does not rule out the possibility that the improvements observed could be due to factors other than the specific treatment received, such as generic therapeutic effects including expectancy and the passage of time. It is also possible that other psychological interventions focusing on the anxiety symptoms or comorbid disorders, such as specific treatment protocol for social anxiety or PTSD, could have similar effects on reducing anxiety symptoms. We further note that the patients receiving the treatment described in the current paper had initially been assessed and seen within a psychiatry service, as will commonly be the case in bipolar disorder given that medication is the first-line treatment (Goodwin, 2016; National Institute for Health and Care Excellence [NICE], 2014). However some individuals who would meet diagnostic criteria for bipolar disorder may reject a psychiatric treatment context and the use of terms such as 'bipolar disorder' or 'illness' (as used in this article) in relation to themselves (see eg. British Psychological Society [BPS] Division of Clinical Psychology, 2015) and our audit does not provide information as to whether our psychological treatment can be generalised.

While bipolar treatment guidelines (National Institute for Health and Care Excellence [NICE], 2014) place emphasis extrapolate from data on depression, few psychological therapeutic approaches have attempted to address truly bipolar-specific processes with notable exceptions such as circadian /social rhythms(Frank, Swartz, & Boland, 2007). In this vein, ImCT, attempts to address imagery linked to anxiety and mood instability. In the future, therapeutic options for individuals with bipolar disorder could be further advanced by offering a modular combination of these elements tailored on their needs (circadian routine, anxious imagery etc.).

Conclusions

Our audit results show that an imagery-focused psychological intervention targeting mood and anxiety symptoms in BD was promising in terms of clinical symptom reduction, and was well accepted and rated as highly satisfactory by patients with BD. This brings us a step closer towards developing improved psychological interventions for BD that aim to address some of the challenges that are inherent in treatment innovation. Most notably, imagery provides a particular treatment target because of its apparently central role in some aspects of psychopathology. It also raises the challenge of how to meaningfully measure outcome in BD: mood instability cannot be captured using single assessments pre- and post-treatment. Based on these preliminary indications, further studies should formally evaluate the efficacy of ImCT in reducing mood episodes and instability and anxiety in patients with BD. As a step towards an efficacy trial of ImCT, and based on the positive outcome of the OxMAPP audit, we have developed a novel, more refined approach to measuring mood instability in bipolar patients, applying a time-series analysis to daily mood fluctuations (Bonsall, Geddes,

Goodwin, & Holmes, 2015; Holmes et al., 2016). A much shorter-term read out of treatment effects appears to us to be a critical step in streamlining innovation in bipolar treatment.

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Box 1**Case example of using ImCT**

Ben was a 44-year-old business executive and a married father of one. He had been diagnosed with bipolar I disorder at the age of 35 following a manic episode during which he had almost bankrupted his business. He had experienced periods of severe depression since he was a teenager, interspersed with times of “high energy” during which he slept for only three hours per night, started multiple creative projects and often quarrelled with colleagues. These were retrospectively identified as hypomanic episodes. At the time the OxMAPP sessions began Ben met criteria for generalised anxiety disorder (GAD) and his scores on a standardised measure of anxiety (the Beck Anxiety Inventory (BAI; Beck & Steer, 1993) were in the ‘severe’ range.

During our assessment Ben reported that he was highly anxious about his work and relationships with his work colleagues. It was identified that Ben frequently experienced intrusive imagery of an email inbox constantly being filled with new messages. This visual image was rated as very vivid and was accompanied by the sound of each new email ‘pinging’ into the inbox. The image would intrude when Ben went to bed at night and involuntarily began to ruminate over the events of his day at work. In response to the image, Ben would think, “I will never be able to keep up, it’s impossible”, “They [his colleagues] are deliberately trying to oust me”, and “I’m a failure”. Understandably, this made him feel anxious, angry and low. When the image intruded, Ben would not be able to disengage from it and frequently felt compelled to check his email account, sometimes writing inappropriately hasty email responses which he regretted the next day. Consequently, his sleep was severely disrupted and he would often need to write further emails to rectify his responses. This had a significant impact on his mood and perpetuated his anxiety.

The above image was micro-formulated carefully during the extended assessment phase. During treatment, a combination of meta-cognitive and imagery rescripting techniques were used to modify the image and reduce its impact. Meta-cognitive strategies were initially used to illustrate to Ben that “an image is just an image” rather than imbued with significant meaning. Ben experimented with changing the image of the email inbox by imagining it shrinking in size, being placed inside a balloon and the balloon subsequently ‘popped’. This resulted in a reduction in the emotional impact of the image. Following this, an imagery rescripting technique was used to change the original image into a more benign one. Ben practiced imagined himself shutting down the email inbox, swiping the image away, and replacing it with a multi-sensory image of having dinner with his close family and friends in a beautiful garden. This rescripted image was associated with the cognitions, “My family love me, I am doing ok” and “I am more than just my working life”, which promoted feelings of calm and contentment. A week after the imagery rescripting procedure, Ben reported that the original image was intruding only once per day, and he could easily dismiss it. He ceased checking his email in the night and reported sleeping better. His score on the BAI also fell to within the ‘low’ range.

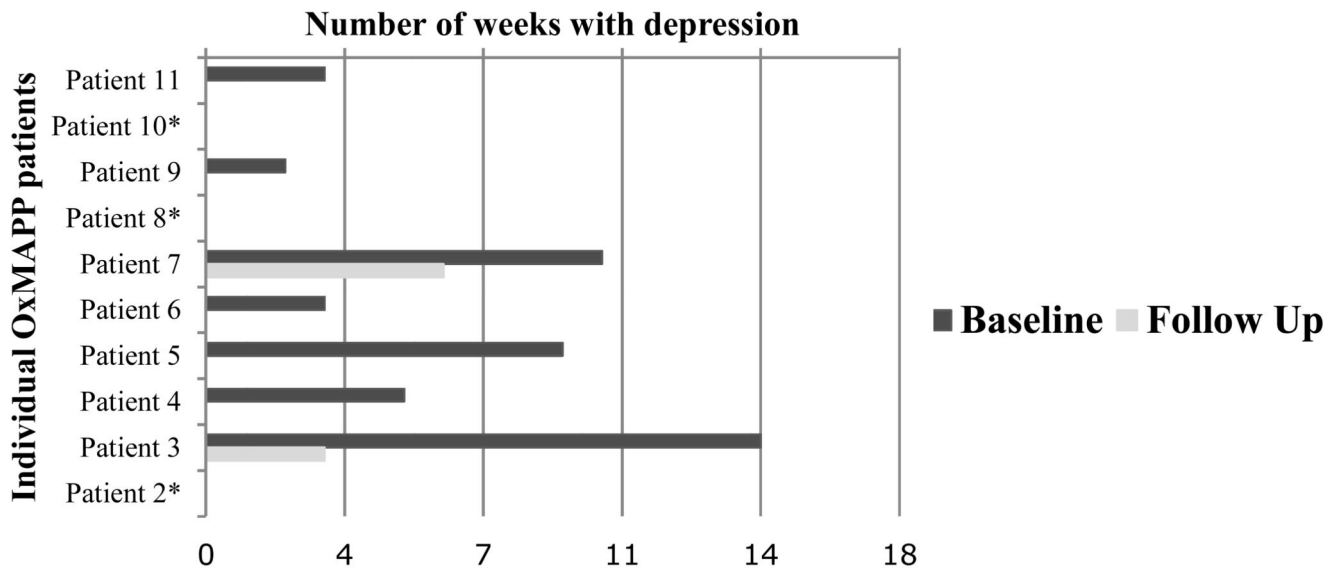


Figure 1. Mean duration of depressive episodes during 6 months of baseline period and 6 months of follow-up period after OxMAPP treatment completion per each patient with Bipolar Disorder. Data from 1 patient (Patient 1) were not available due to discharge from the clinic. Patients 2*, 8* and 10* had no depressive episode during baseline or follow-up.

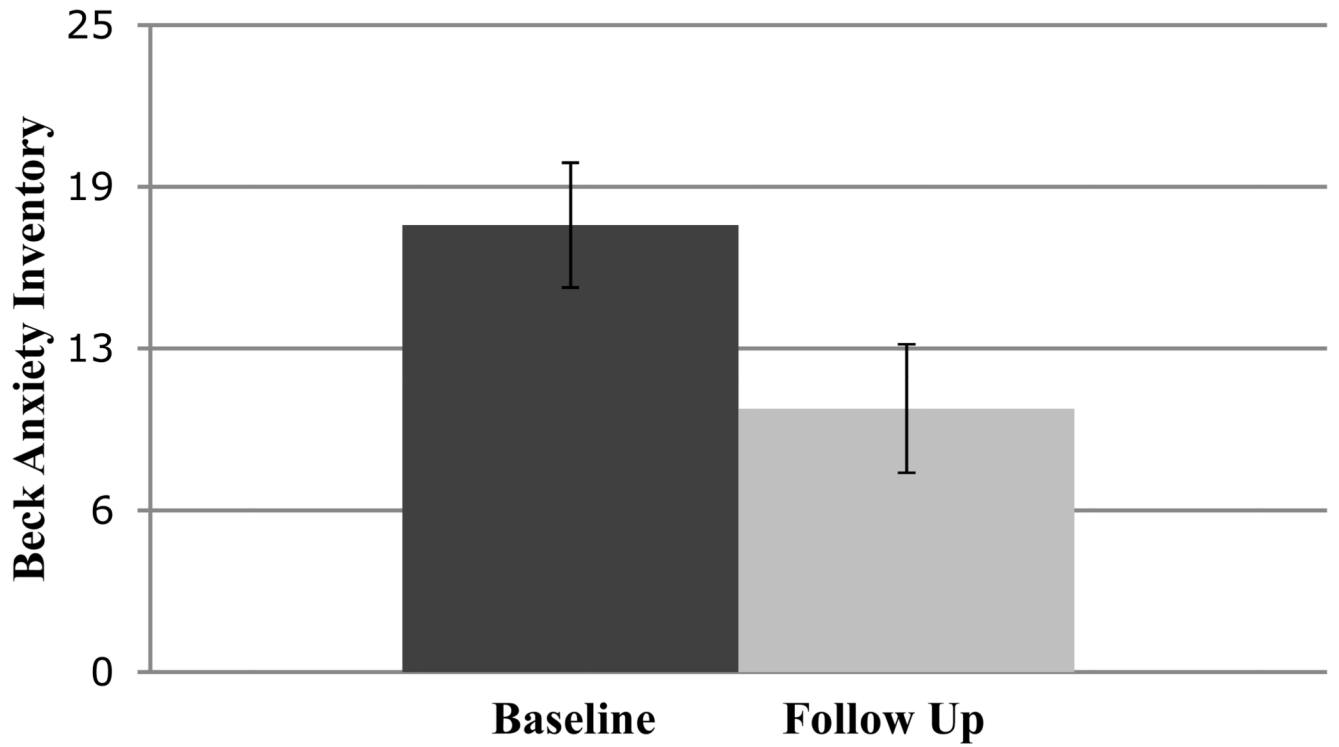


Figure 2.
Mean scores on anxiety measure (BAI) collected weekly during 1 month assessment period and 1 month follow-up period after OxMAPP treatment completion in 11 patients with Bipolar Disorder.

Table 1Demographic characteristics of the study cohort ($N=11$)

Category	<i>n</i> (%) / mean (SD)
Age at study intake, years, mean (SD)	35.65 (12.01)
Gender, <i>n</i> (%)	
Female	10 (90.9)
Male	1 (9.1)
Ethnicity, <i>n</i> (%)	
Asian	1 (9.1)
White British	7 (63.6)
White Irish	1 (9.1)
White American	2 (18.2)
Employment status, <i>n</i> (%)	
Employed (paid or unpaid)	4 (36.4)
Student	6 (54.6)
Homemaker	1 (9.1)
Marital Status, <i>n</i> (%)	
Single	5 (45.5)
Married or cohabiting	5 (45.5)
Separated or divorced	1 (9.1)

Table 2Presenting clinical problems of the study cohort ($N = 11$)

Category	n (%) / mean (SD)
Bipolar disorder, n (%)	
Type 1	5 (45.5)
Type 2	6 (55.5)
Comorbidity and clinical course, n (%)	
History of Psychosis	3 (27.3)
Current Depressive Episode	5 (45.5)
Current Comorbid Anxiety Disorder	9 (81.8)
Past Comorbid Anxiety Disorder	2 (18.2)
Other Current Comorbid Axis I Disorder	1 (9.1)
History of other Axis I Disorders	6 (55.5)
Bipolar disorder variables, mean (SD)	
Age at onset, years	19.18 (7.17); range: 13 – 35
Number of episodes depression (past 6 months)	0.45 (0.52); range: 0 – 1
Duration of episodes depression (past 6 months) in weeks	6.40 (5.18); range: 2 – 12
Number of episodes (hypo)mania (past 6 months)	0.27 (0.47); range: 0 – 1
Duration of episodes (hypo)mania (past 6 months) in weeks	1.67 (0.58); range 1 – 2
Number of suicide attempt (lifetime)	0.27 (0.47); range: 0 – 1
Number of hospitalizations (lifetime)	0.73 (0.77); range: 0 – 2
Number of episodes depression (lifetime), n (%)	
0 – 4 episodes:	4 (36.4)
5 – 9 episodes:	2 (18.2)
10 or more episodes:	5 (45.5)
Medication at Screening, n (%)	
Lithium	4 (36.4)
Anticonvulsants	4 (36.4)
Antipsychotics	7 (63.6)
Antidepressants	1 (9.1)
Current Comorbid Anxiety Disorder, n (%)	
Posttraumatic stress disorder	3 (27.3)
Generalized anxiety disorder	3 (27.3)
Obsessive compulsive disorder	1 (9.1)
Specific phobia	1 (9.1)
Social anxiety	4 (36.4)
Panic disorder	1 (9.1)
Other Current Axis I Disorder, n (%)	
Substance dependence	1 (9.1)
Past Comorbid Anxiety Disorder, n (%)	
Social anxiety	1 (9.1)
Panic disorder	1 (9.1)

Category	<i>n</i> (%) / mean (SD)
History of other Axis I Disorder, <i>n</i> (%)	
Alcohol dependence	1 (9.1)
Bulimia	1 (9.1)
Anorexia	3 (27.3)
Eating disorder NOS	2 (18.2)

Table 3

Duration and number of depressive and manic episodes during 6 month baseline and 6 month follow-up in 10 patients with Bipolar Disorder.

	Baseline			Follow-Up			<i>T</i>	<i>Sig. (p)</i>
	Mean	SD	Min-Max	Mean	SD	Min-Max		
Duration of depressive episodes (weeks)	4.6	4.86	0-14	0.85	1.89	0-6	2.37	*0.02
No. of depressive episodes	0.9	0.74	0-2	0.3	0.68	0-2	1.73	0.08
Duration of manic episodes (weeks)	0.3	0.48	0-1	0.65	0.72	0-3	1.28	0.19
No. of manic of episodes	0.4	0.70	0-2	0.6	0.69	0-2	0.48	0.70

*
p<.05