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Research report

Mental imagery in bipolar affective disorder versus unipolar depression: Investigating cognitions at times of 'positive' mood

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ABSTRACT

Background: Compared to unipolar depression (UD), depressed mood in bipolar disorder (BD) has been associated with amplified negative mental imagery of the future ('flashforwards'). However, imagery characteristics during positive mood remain poorly explored. We hypothesise first, that unlike UD patients, the most significant positive images of BD patients will be 'flashforwards' (rather than past memories). Second, that BD patients will experience more frequent (and more 'powerful') positive imagery as compared to verbal thoughts and third, that behavioural activation scores will be predicted by imagery variables in the BD group.
Methods: BD ($n=26$) and UD ($n=26$) patients completed clinical and trait imagery measures followed by an Imagery Interview and a measure of behavioural activation.
Results: Compared to UD, BD patients reported more 'flashforwards' compared to past memories and rated their 'flashforwards' as more vivid, exciting and pleasurable. Only the BD group found positive imagery more 'powerful', (preoccupying, 'real' and compelling) as compared to verbal thoughts. Imagery-associated pleasure predicted levels of drive and reward responsiveness in the BD group.
Limitations: A limitation in the study was the retrospective design. Moreover pathological and non-pathological periods of "positive" mood were not distinguished in the BD sample.
Conclusions: This study reveals BD patients experience positive 'flashforward' imagery in positive mood, with more intense qualities than UD patients. This could contribute to the amplification of emotional states and goal directed behaviour leading into mania, and differentiate BD from UD.

1. Introduction

Bipolar disorder (BD) affects at least 1% of the population (Merikangas et al., 2011; Ten Have et al., 2002), with even higher community estimates (Kodesh et al., 2012; Lewinsohn et al., 2000). It is a leading cause of death due to suicide and associated chronic medical conditions (Merikangas et al., 2007). Despite the burden of the disease and the fact that mood disorders are on a continuum between unipolar and bipolar cases, progress in developing effective therapies for BD lags behind that for unipolar major depression (UD); this is particularly true for psychological interventions (Mansell and Pedley, 2008; Goodwin and Vieta, 2005). Thus, cognitive behavioural therapy (CBT) for BD has not achieved the success seen for UD (Lam et al., 2003, 2005; Scott et al., 2006; Hollon et al., 2005). We have suggested previously that traditional methods of delivering CBT, strongly based on verbal accounts of distorted verbal cognition, may be inappropriate to the distinct cognitive profile of BD (Holmes et al., 2008). We have sought an explanation for this in the growing evidence that clinical assessment and interventions should focus upon the unique role of mental imagery in BD (Holmes et al., 2011; Meyer et al., 2011; Bonsall et al., 2012; Deeprose et al., 2011; Di Simplicio et al., 2012).

Thus, thorough clinical assessment and treatment innovation require an understanding of idiosyncratic spontaneously occurring emotionally charged mental imagery, akin to the flashbacks of PTSD. Whereas the content of PTSD flashbacks is past traumas; we have called certain intrusive imagery in BD as 'flashforwards' because it tends to travel forward in time to prospective events. Negative mood states in BD have been associated with intrusive 'flashforward' mental images. Hales et al. (2011) interviewed depressed BD or UD individuals who, in line with earlier studies (Holmes et al., 2007b; Crane et al., 2012), described suicide-related

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images. Both groups reported greater preoccupation with such images than verbal thoughts, but BD individuals were more preoccupied with their imagery and found it more compelling than those with UD. Given that BD has the highest rate of suicide of all psychiatric disorders (Hawton et al., 2005), and imagery promotes action (Libby et al., 2007), we suggested that such compelling suicidal imagery might be highly relevant to clinical risk assessment (Hales et al., 2011; Holmes et al., 2007b).

The present study had three main aims around further understanding imagery in positive mood states in BD: first, to investigate the frequency of 'flashforwards' (as compared to past memories) in positive mood states in BD, and to assess the characteristics (e.g. vividness) of such imagery; second, to explore the relationship between behavioural activation levels and positive mental imagery in BD; and finally to contrast these findings with a UD group.

2. Methods

We recruited patients with a lifetime BD diagnosis or a lifetime UD diagnosis, from secondary care (outpatients) and the community (advertisements in local community centres and on local and national websites).

2.1. Participants

Inclusion criteria for both groups were age 18–65 years; ability to read and write English; and willingness to give written informed consent to participate in the study. Current mood was assessed using the Quick inventory for Depressive Symptomatology Self-Report (QIDS-SR; Rush et al., 2003) and the Young Mania Rating Scale (YMRS; Young et al., 1978).

Bipolar disorder group: Lifetime diagnosis of BD type I or II was based on assessment on the Structured Clinical Interview for Diagnostic and statistical manual of mental disorders, 4th Edition (SCID, DSM-IV; First et al., 2002). Exclusion criteria were current episode of mania or hypomania or current severe suicidal ideation, based on the questionnaires above. This resulted in 16 participants recruited with a lifetime history of BD I and 10 with BD II (total=26 BD).

Unipolar depression group: Lifetime diagnosis of major depressive episode or dysthymic disorder and no lifetime history of mania or hypomania were based on SCID for DSM-IV (First et al., 2002). Exclusion criteria were current severe suicidal ideation, based on the questionnaire above. This resulted in 23 participants with major depressive disorder and 3 with dysthymic disorder (total=26 UD).

2.2. Procedures

Ethical approval for the study was granted by the National Health Service Research Ethics Committee South Central – Oxford A. Written informed consent was obtained from all participants. Those eligible were invited to take part in the interview phase of the study. They completed the Imagery Interview (Holmes et al., 2007a), Beck Anxiety Inventory (Beck and Steer, 1993), Cognition Checklist for Mania – Revised (Beck et al., 2006), Altman Self-Rating Mania Scale (Altman et al., 1997), Impact of Future Events Scale (Deeprose and Holmes, 2010), Spontaneous Use of Imagery Scale (Reisberg et al., 2003) and Behavioural Inhibition/Behavioural Activation Scales (Carver and White, 1994). Participants received £20 for taking part.

2.3. Clinical measures and ratings of general imagery use

For detailed description of the measures see Supplementary material.

Quick Inventory of Depressive Symptomatology Self-Report (QIDS-SR; Rush et al., 2003) is a 16-item self-report multiple choice questionnaire measuring depressive depression over the previous seven days.

Altman Self Rating Mania scale (ASRM; Altman et al., 1997) is a 5-item self-report multiple choice questionnaire measuring manic symptoms severity over the previous seven days.

Spontaneous Use of Imagery Scale (SUIS; Reisberg et al., 2003) provides a trait measure of use of (nonemotional) mental imagery in everyday life, for example: "When I think about visiting a relative, I almost always have a clear mental picture of him or her".

Impact of Future Events Scale (IFES; Deeprose and Holmes, 2010) provides an index of the impact of intrusive imagery of future events over the past seven days.

2.4. Endpoint measures

2.4.1. Imagery interview

The Imagery Interview (based on Holmes et al. (2007a)) comprised a modified version of the 'The Suicidal Cognitions and Flashforwards Interview' used by Hales et al. (2011) (see also Crane et al., 2012; Day et al., 2004). First, the terms 'verbal thought' and 'mental image' were explained and the participant's comprehension checked. Participants were asked to remember and describe a particular point in time when their mood was last 'positive', i.e. defined as 'excited, energised or elevated'. In order to facilitate remembering, a 13-item checklist was used to ascertain the range of content of images and verbal thoughts for the last time of positive mood (Supplementary material, Table S1). The interview then included the following sections.

2.4.2. Most significant positive image

Participants were asked to choose from the checklist the image that they deemed to be the 'most significant' and describe it in detail ('image content', see Table 3 for BD group and Table S2 for UD group). Participants were asked to rate the characteristics of their selected most significant image including how vivid, exciting and pleasurable it was (from 1=not at all vivid/exciting/pleasurable to 9=extremely vivid/exciting/pleasurable).

2.4.3. Positive imagery versus positive verbal thoughts

Participants were asked to rate the frequency (from 1=not at all to 9=all the time), and 'powerfulness' of their imagery. This included preoccupation (from 1=not at all to 9=all the time), how real the images felt (from 1=not at all real to 9=as if it was reality) and how compelling they were (from 1=not at all compelling to 9=completely compelling), for all imagery occurring during the last period of positive mood previously identified. The same ratings were asked separately for all verbal thoughts occurring during the same last period of positive mood.

Table 1
Sociodemographic characteristics of the sample. Mean (SD – range).

Demographic characteristics	***Bipolar*** *(n=26)*	***Unipolar*** *(n=26)*
Age (years)	40.58 (9.91–44)	36.12 (13.06–37)
Female:Male	18:8	18:8
Ethnicity		
White British:Other	20:6	18:8
Years in education	14.58 (2.60–9)	14.54 (2.23–9)
Occupation		
Employed:not employed	16:10	21:5
Marital status		
Single:non-single	16:10	19:7