Research report

The bipolar recovery questionnaire: psychometric properties of a quantitative measure of recovery experiences in bipolar disorder

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ABSTRACT

Background: The importance of personal recovery in mental health is increasing widely recognised. However, there is no measure available to assess recovery experiences in individuals with a diagnosis of bipolar disorder. This paper reports on the development of the Bipolar Recovery Questionnaire (BRQ) to aid recovery informed developments in research and clinical practice.

Methods: A draft 45 item BRQ was developed based on prior literature review and qualitative research. In the current study a panel of clinicians, academics and consumers rated draft items on recovery relevance and comprehensibility leading to the 36 item questionnaire subjected to psychometric evaluation. 60 participants with bipolar disorder completed BRQ along with measures of mood, quality of life, functioning and personal growth.

Results: BRQ was internally consistent and reliable over a month long test–retest period. BRQ scores were significantly associated with lower depression and mania scores and with higher wellbeing. BRQ was also significantly associated with better functioning, better mental health quality of life and personal growth. Regression analysis indicated that depression, wellbeing and personal growth were all uniquely associated with BRQ.

Limitations: Sample size did not permit exploration of the factor structure of BRQ. The sample is drawn from the North West of England thus it is not clear how these findings might generalise beyond this group.

Conclusions: BRQ is designed to assess personal experiences of recovery in bipolar disorder. The present study indicates that it is reliable and valid, being associated with both symptomatic and functional outcomes consistent with established definitions of recovery.

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1. Introduction

Research into the longer term outcomes of pharmacological and psychological interventions for bipolar disorder has concentrated on symptom reduction and relapse prevention (Colom et al., 2009; Geddes, 2004; Lam et al., 2005; Lobban et al., 2010). However individuals with personal experience of severe mental illness including bipolar disorder, express disatisfaction with these as the primary targets of clinical practice arguing instead for the importance of personal recovery outcomes (Jones et al., 2010 Mead and Copeland, 2000; Pitt et al., 2007). A widely endorsed definition of recovery in relation to mental health is that it is "a

deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills and/or roles. It is a way of living a satisfying, hopeful, and contributing life even with limitations caused by the illness. Recovery involves the development of new meaning and purpose in one's life as one grows beyond the catastrophic effects of mental illness" (Anthony, 1993). Elsewhere patients have defined recovery as a journey in which the individual achieves increased hope, wider engagement in society and control over their care and their lives (Slade, 2009; South London and Maudsley NHS Foundation Trust, South West London and St George's Mental Health NHS Trust, 2010). Although clinical recovery contributes to this process the emphasis for many people is on social and functional recovery outcomes. Understanding and endorsement of this recovery perspective by clinical professionals can lead to significant benefits in terms of greater service user empowerment, enhanced use of collaborative care models

(including advanced directives) and tailoring of clinical interventions which together enhance social and functional outcomes (Berk et al., 2004; Flood et al., 2006; Henderson et al., 2004; Simon et al., 2009; South London and Maudsley NHS Foundation Trust, South West London and St George's Mental Health NHS Trust, 2010). The importance of the recovery perspective has been recognised at national levels in the UK with the publication of 'No Health Without Mental Health' (Department of Health, 2011) and in the USA by the President's, New Freedom Commission on Mental Health (2003) both reports proposing the integral role of consumer perspectives on recovery in improving mental health services and mental health outcomes.

However, there have been very few studies which have explored recovery experiences systematically in bipolar disorder. Some qualitative studies have explored how individuals with bipolar disorder stay well, focussing primarily on methods by which relapse is avoided, rather than on the subjective process of recovery, highlighting the importance of both medication and psychosocial support in the context of active condition management by the individual (Mansell et al., 2010; Russell and Browne, 2005). Although clinically helpful such reports define recovery in terms of symptom reduction and avoidance of relapse thus they miss the more idiosyncratic personal recovery experiences that are often most important to service users. They also do not incorporate research which indicates that trajectories of symptomatic and functional improvement are often different (Chengappa et al., 2005; Martinez-Aran et al., 2007) and that some individuals with significant residual symptoms can achieve high levels of functioning (Murray and Michalak, 2007). Furthermore, such approaches do not offer researchers or clinicians a time efficient tool to assess recovery in relation to new treatments or routine clinical practice. The Questionnaire about the Process of Recovery (QPR) has recently been developed, which explores intrapersonal and interpersonal aspects of recovery from psychosis as a process (Neil et al., 2009) and has already been adopted as the primary outcome measure for a cluster randomised controlled trial of a recovery focussed approach to community mental health team care (Slade et al., 2011). However, despite the promise of this measure it was not developed to capture the unique experiences of individuals with bipolar disorder, including its varied and fluctuating nature and the relative need for balance; for example, in people with bipolar disorder, there is a risk that high levels of optimism, involvement in meaningful activities and social interactions and self-confidence may actually be indicative of mental health problems in a way that is unlikely for people with psychosis. This paper, therefore, reports on the development of a new measure: The Bipolar Recovery Questionnaire (BRQ). Consistent with the intention of developing a measure to reflect consumer defined recovery experiences, item development for BRQ was informed by qualitative research in to the definition and experience of recovery of bipolar disorder reported in detail elsewhere (Jones et al., 2010) and to reflect the multifaceted experiences of recovery highlighted by Anthony (1993): therefore, to be valid it would expected that BRQ would be associated with symptoms, functioning and experiences of growth. Specifically, we wished to determine whether BRQ is (i) internally consistent and reliable; (ii) logically associated with measures of mental health symptoms (negative associations with depressive and manic mood symptoms, positive association with wellbeing); (iii) logically associated with measures of functioning and growth (positive associations with improved functioning and growth).

2. Methods

2.1. Item generation methods

Potential items for the new scale (the Bipolar Recovery Questionnaire; BRQ) were generated based on both a review of recovery literature in severe mental illness and specifically in bipolar disorder and from an earlier qualitative study of individuals with bipolar disorder using an interpretative framework approach to explore personal definitions, experiences and accounts of recovery (Jones et al., in press). Based on these sources 45 items were drafted by the authors intended to capture personal understanding of self and symptoms, the role of the individual and sense of personal agency in the process of recovery, developing meaning through active engagement in the social/occupational world and finally to identify recovery as a dynamic process rather than a static goal.

2.2. Item reduction methods

After initial generation, all candidate items were first reviewed by a service user reference group and item wordings amended where required on the basis of this review. No items were removed at this stage. Items were then further reviewed and scrutinised for content and face validity by clinicians, academics and service-user consultants involved in this project. Of the eighteen experts contacted, thirteen responded, rating each item on likert scales ranging from 1 (not at all) to 5 (a great deal), for relevance to recovery (*how relevant is the item to recovery in bipolar disorder?*), and comprehensibility (*how comprehensible is the item? Is it easy to understand?*). Any candidate items with an average rating of less than four for relevance to recovery were eliminated from the item pool ($n=11$). Items with an average rating of less than four for comprehensibility were considered for re-writing ($n=2$). After re-wording, these items were re-rated by one of the experts who offered original feedback. Both were rated as suitably comprehensible and relevant to recovery (i.e. >4) and so were included in the final item pool. The final item pool was then reviewed and approved by the service reference group for this project.

The final BRQ scale for psychometric investigation consisted of 36 items. The 36 item BRQ as used for this study is shown in Appendix 1. Each item is scored on a 100 mm visual analogue scale from 0 to 100 anchored by 'strongly disagree' (0), 'disagree' (25), 'agree' (75) and 'strongly agree' (100). Total BRQ score is calculated by summing individual scores across all items of which 12 are reverse scored (i.e. strongly disagree would indicate a score of 100, strongly agree, zero). Higher BRQ total scores indicate a higher degree of self rated recovery. The scale consists of a mixture of positively and negatively keyed items to guard against acquiescence responding biases in which the participant may tend towards repeatedly giving high or low ratings on items independent of item content (Jackson, 1967).

2.3. Participants

Inclusion criteria for the present study were:

1. A diagnosis of Bipolar disorder I or II, confirmed using the Structured Clinical Interview for DSM-IV Disorders (SCID) (First et al., 1997).
2. Aged 18–65 years old.
3. Sufficiently fluent in English to be able to complete BRQ and other study measures.

Individuals were excluded if they were currently experiencing an acute episode of major depression or mania, or had experienced either in the month prior to assessment. This led to the exclusion of one potential participant.

2.4. Procedure

Participants were recruited via mental health services and service user groups across the North West of England. Ethical approval for the study was granted by a local NHS research ethics committee, which operated in accordance with the Declaration of Helsinki (World Medical Association, 1975). Depending on individual participant preference, assessments were either completed at the participants' homes or at local mental health services. Following a SCID interview to confirm diagnostic status and to confirm absence of a current acute mood episode, participants then completed the following measures together with the BRQ.

2.5. Symptom measures

2.5.1. Observer rated

Bech-Refaelson Mania Scale (MRS) (Bech et al., 1978) – The MRS is an observer rated measure of mania severity, scored over 11 items. The MRS is a widely validated scale and evidence exists for its internal consistency ($\alpha = .80–.90$) (Bech et al., 2001).

Hamilton Rating Scale for Depression (HDRS) (Hamilton, 1960) – The HDRS is an observer rated measure of depression severity, scored over 17 items. The HDRS has been shown to have a high degree of scale reliability and evidence exists for its concurrent and discriminant validity (Carroll et al., 1973; Knesevich et al., 1977).

2.5.2. Self report

Beck Depression Inventory—Second Edition (BDI-II) (Beck and Steer, 1987)—The BDI-II is a self-report inventory of depression severity, scored over 21 items. The scale has good psychometric properties, including test–retest reliability of .65–.85 in depressed adults over periods of one to three weeks (Beck et al., 1988).

Internal States Scale (ISS) (Bauer et al., 1991)—The ISS is a well-established self-report measure of bipolar symptomatology, scored across 4 subscales assessing activation (ISS-A), perceived conflict (ISS-PC), wellbeing (ISS-W) and depression (ISS-D). The ISS has been shown to have excellent psychometric properties across two studies (Bauer et al., 1991; Bauer et al., 2000).

2.6. Functioning and growth measures

2.6.1. Observer rated

Personal and Social Performance Scale (PSP) (Morosini et al., 2000)—The PSP is an observer rated measure of functioning, scored across 4 domains assessing socially useful activities, personal and social relationships, self-care and aggression. The internal consistency of the overall scale has been shown to be adequate ($\alpha = .76$) (Kawata and Revicki, 2008).

2.6.2. Self report

Medical Outcomes Study Short form Health Survey (MOS SF 12) (Ware et al., 1996)—The MOS SF is a self-report measure of mental and physical health function, scored over 12 items. The mental health and physical health summary components of the MOS SF demonstrate good psychometric properties, $\alpha = .88$ and $\alpha = .86$, respectively (Stewart et al., 1988).

Post Traumatic Growth Inventory (PTGI) (Tedeschi and Calhoun, 1996)–The PTGI is a 21 item self-report measure of positive outcomes following traumatic experiences. The psychometric properties of the PTGI total score are good ($\alpha = .90$) (Jaarsma et al., 2006; Tedeschi and Calhoun, 1996).

2.6.3. Psychometric analysis

Internal consistency of BRQ was computed using Cronbach's alpha (α). External validity was assessed by analysing cross-sectional relationships between BRQ scores and the self-reported and observer rated measures described above. Power calculations revealed that 60 participants were sufficient to detect correlational relationships of. 4 or greater between BRQ and measures of interest with alpha set at .01 and beta at .8. This threshold was deemed sufficient to ensure that items of potential significance associated with BRQ were not missed. To more rigorously assess the unique associations between measures of symptoms and function and BRQ scores those measures which were significantly associated with BRQ were entered together into a series of regression analyses to explore the variance accounted for by each, one exploring the variance explained by symptom measures and a second, exploring the variance explained by measures of growth and functioning. Significant predictors from these initial analyses were then entered into a final regression analysis to explore the specific measures that uniquely predicted recovery. Kolmogorov-Smirnoff (KS) tests were used to assess the distributions of data for questionnaire totals and subscales. None of the scales deviated significantly from normality.

3. Results

3.1. Participants

Sixty participants were recruited comprised of twenty-six males (43%) and thirty-four females (57%) aged between 19 and 63 (mean age 42.37, SD 11.42). Fifty-two participants (87%) had a diagnosis of bipolar disorder I, the remainder bipolar disorder II (13%). Twenty eight participants completed BRQ for a second time four weeks later for reliability testing. The majority of participants were not in employment despite half the sample having completed tertiary education. Over half of participants had experienced 7 or more episodes of depression and/or mania. A full description of participant demographics is reported in Table 1.

3.2. Reliability

3.2.1. Internal consistency

Cronbach's alpha was calculated for the 36-item scale. Internal reliability analyses showed that the BRQ had a good to excellent consistency ($\alpha = .875$) (George et al., 2003), and in no case did deleting an item lead to a significant improvement in the internal reliability of the scale (change $\alpha > .02$). Across all the items, endorsement in the low range (0 − 10) ranged from 0% to 16.7%. In the moderate range (11–50) endorsements ranges from 3.3% to 51.7% and from 38.3% to 96.7% in the higher range (51–100). For total BRQ scores, skewness and kurtosis were acceptable, with values not substantially greater than zero, and within the limits of skewness < 2 and kurtosis < 7 (Curran et al., 1996; Tabachnick and Fidell, 2001).

3.2.2. Test–retest reliability

Test–retest reliability was computed by comparing initial BRQ scores (T1) with those completed 4 weeks later (T2) in 28 participants of the total sample (47%). The results yielded strong relationships between T1 and T2 BRQ scores, indicating excellent test–retest reliability ($r = .866$, $p < .001$).

3.3. Validity

3.3.1. Relationship between BRQ recovery score and symptom measures

BRQ and symptom scores are presented in Table 2. Relationships between total BRQ score and symptom measures are illustrated in Table 3. Bivariate correlations indicated that BRQ

Table 1
Demographic information for the sample.

	Total sample (n=60)
Age	
Mean (SD)	42.34 (11.42)
Range	19–63
Gender	
Male	26
Female	34
Ethnicity	
White	57
Asian	1
Black	1
Other	2
Marital Status	
Single	22
Married	18
Cohabiting	5
Divorced/ Separated	14
Widowed	1
Education Attainment	
Secondary Education	26
Further Education	12
Higher Education	22
Employment Status	
Full time, part time or voluntary	27
Disabled/ DLA	26
Student	5
Retired	1
Unemployed	1
Diagnosis	
Bipolar Disorder I	52
Bipolar Disorder II	8
No. previous episodes of hypo/mania	
0–6	27
7–11	10
12–29	10
>30	11
Unknown	2
No. previous episodes of depression	
0–6	20
7–11	13
12–29	13
>30	11
Unknown	3

Table 2
Descriptive statistics for all variables.

Variable	N	M	SD
BRQ	60	2357.7	414.0
HDRS	59	6.5	6.1
MRS	59	1.9	2.6
BDI	59	14.5	11.8
ISS-PC	59	81.7	71.0
ISS-W	59	131.1	69.4
ISS-A	59	97.9	82.0
ISS-D	59	45.9	42.0
SF12-P	59	45.3	11.0
SF12-M	59	39.9	11.7
PSP	59	67.6	11.5

Bipolar Recovery Questionnaire (BRQ); Hamilton Depression Rating Scale (HDRS); Bech-Refaelson Mania Scale (MRS); Beck Depression Inventory (BDI); Internal States Scale (ISS); Interpretation of Depression Questionnaire (IDQ); Hypomanic Interpretations Questionnaire (HIQ); Medical Outcomes Study Short Form (SF12); Personal and Social Performance Scale (PSP).

total score correlated negatively with HDRS, BDI and ISS depression scores as well as ISS activation and perceived conflict. A significant positive association was identified between BRQ and ISS wellbeing. The bivariate association between BRQ and MRS was not significant ($p > .05$). Associations were also explored between BRQ total score and specific depression (HDRS) and elevated mood items (MRS-M) from HDRS and MRS respectively. BRQ was significantly negatively associated with both mood items.

3.3.2. Relationship between BRQ recovery score and measures of appraisals, growth and functioning

Appraisal, growth and functioning scale scores are presented in Table 2. Relationships between total BRQ score and functioning and growth measures are presented in Table 4. Bivariate correlations indicated that BRQ total score was significantly positively associated with PSP score, SF-mental health and PTGI. BRQ total score was also specifically associated with an index of positive

well being composed of two SF-12 items:i) calm and peaceful; and ii) energy.

Bivariate correlations were also conducted to assess the relationships between total BRQ score and individual items of PTGI to explore which elements of post-trauma growth were most related to recovery (see Table 5). There were significant associations with 15 of the 21 PTGI items with the highest associations ($ > .5$) with items 10 (I know better that I can handle difficulties), 12 (I am better able to accept the way things work out), 19 (I have discovered that I'm stronger that I thought I was), 2 (I have a greater appreciation of the value of my own life), 3 (I developed new interests); and 4 (I have a greater feeling of self-reliance).

3.3.3. Predictors of total BRQ recovery score

To explore more specifically which measures were uniquely associated with BRQ recovery score multiple regressions with blockwise entry were conducted. For all regressions, Durbin–Watson statistics were all $ > 1$ and < 3, confirming that the assumption of independent error was tenable. Based on the VIF and Tolerance statistics, there were no concerns about multicollinearity. Plots did not indicate any concerns about homoscedasticity, and standardised residuals were normal.

Firstly, each clinical symptom measure with a significant bivariate correlation with total BRQ score was entered into the first equation. The overall regression equation was significant ($F (6, 52)=10.613$, $p < .0001$). The regression equation indicated that BDI total score (standardised $B= -.503$, $t= -3.096$, $p < .01$) and ISS-W score (standardised $B=.423$, $t=3.234$, $p < .01$) contributed significantly to the variance in BRQ score. Both BDI and ISS-W score each contributed 8% to BRQ variance. In combination the two variables explained another 5% of variance in BRQ score, explaining 21% in total.

Secondly, each growth and functioning measure with a significant bivariate correlation with total BRQ score was entered into another regression equation. The overall regression equation was significant ($F (3, 55)=22.261$, $p < .0001$). The equation indicated that PTGI total score (standardised $B=.448$, $t=4.708$, $p < .001$), PSP score (standardised B=.221, t=2.028, $p < .047$) and mental health score of the MOS-SF (standardised $B=.310$, $t=2.805$, $p < .005$) contributed significantly to the variance in total BRQ score. PTGI score contributed 17% to BRQ variance, PSP 3% and MOS-SF contributed 7%. In combination the three variables

Table 3
Correlations between total BRQ score and symptom measures.

Variable	BRQ	HDRS	HDRS-D	MRS	MRS-M	BDI	ISS-PC	ISS-W	ISS-A	ISS-D
BRQ										
HDRS	−.495**									
HDRS-D	−.456**									
MRS	−.144	.434**								
MRS-M	−.304*	−.118	−.236	.519**						
BDI	−.665**	.752**	.685**	.373**	−.172					
ISS-PC	−.448**	.375**	.301*	.358**	−.155	.563**				
ISS-W	.525**	−.391**	−.415**	.013	.350**	−.398**	−.261*			
ISS-A	−.289*	.254	.171	.514**	.135	.390**	.548**	.160		
ISS-D	−.459**	.577**	.522**	.347**	−.074	.550**	.470**	−.620**	.171	
PTGI	.591**	−.104	−.179	.144	.364**	−.298*	−.126	.368**	.022	−.275*

Bipolar Recovery Questionnaire (BRQ); Hamilton Depression Rating Scale (HDRS); Bech-Refaelson Mania Scale (MRS); Beck Depression Inventory (BDI); Internal States Scale (ISS) ; Post Traumatic Growth Inventory (PTGI).

* $p < .05$.
** $p < .01$.

Table 4
Correlations between total BRQ score and measures of appraisals, growth and functioning.

Variable	BRQ	PTGI	SF12-P	SF12-M	SF12-WB
BRQ					
PTGI	.591**				
SF12-P	.058	−.238			
SF12-M	.561**	.290*	−.102		
SF 12-WB	.549**	.323*	.125	.728**	
PSP	.489**	.239	.344**	.548**	.481**

Bipolar Recovery Questionnaire (BRQ); Post Traumatic Growth Inventory (PTGI); Medical Outcomes Study Short Form – physical health (SF12-P); Medical Outcomes Study Short Form – mental health (SF12-M); Medical Outcomes Study Short Form—positive well-being (SF12-WB); Personal and Social Performance Scale (PSP)

* $p < .05$.
** $p < .01$.

Table 5
Correlations between total BRQ score and individual PTGI items.

	BRQ
PTGI1: 'I changed my priorities about what is important in life'	.061
PTGI2: 'I have a greater appreciation of the value of my own life'	.514**
PTGI3: 'I developed new interests'	.457**
PTGI4: ' I have a greater feeling of self-reliance'	.464**
PTGI5: ' I have a better understanding of spiritual matters'	.355**
PTGI6: 'I more clearly see that I can count on people in times of trouble'	.185
PTGI7: 'I established a new path for my life'	.401**
PTGI8: 'I have a greater sense of closeness with others'	.369**
PTGI9: 'I am more willing to express my emotions'	.083
PTGI10: ' I know better that I can handle difficulties'	.627**
PTGI11: 'I am able to do better things with my life'	.532**
PTGI12: ' I am better able to accept the way things work out'	.573**
PTGI13: ' I can better appreciate each day'	.454**
PTGI14: ' New opportunities are available which wouldn't have been otherwise'	.365**
PTGI15: ' I have more compassion for others'	.288*
PTGI16: ' I put more effort into my relationships'	.231
PTG17: ' I am more likely to try to change things which need changing'	.381**
PTGI18: ' I have a stronger religious faith'	.307*
PTGI19: ' I have discovered that I'm stronger that I thought I was'	.524**
PTGI20: ' I learned a great deal about how wonderful people are'	.096
PTGI21: ' I better accept needing others'	.101

explained another 27% of variance in BRQ score, explaining 54% in total.

Thirdly, using the significant predictors of BRQ total score from both clinical symptom measures (regression 1) and appraisals, growth and functioning measures (regression 2), a further regression equation with blockwise entry was conducted. The overall regression equation was significant ($F (5, 53)=20.457$, $p < .0001$). The regression equation indicated that PTGI total (standardised $B=.363$, $t=4.114$, $p < .001$), ISS-W (standardised $B=.199$, $t=2.173$, $p < .05$) and BDI total (standardised $B=−.401$, $t=−3.097$, $p < .001$)

contributed significantly to the variance in total BRQ score. PTGI contributed 11% to BRQ variance; ISS-W contributed 3% and BDI score contributed 6%. In combination the three variables explained another 9% of variance in BRQ score, explaining 29% in total.

A final regression was conducted to explore which of the PTGI items was uniquely associated with BRQ total score. All six PTGI items with a bivariate correlation of .5 or higher were entered into the regression. The overall regression equation was significant (F (6, 52)$=9.536$, $p < .0001$). One item contributed significantly to variance in BRQ score; 10 (I know better that I can handle difficulties) (standardised $B=.384$, $t=2.63$, $p < .01$) and a second showed a non-significant trend; 12 (I am better able to accept the way things work out) (standardised $B=.212$, $t=1.84$, $p < .1$). Item 10 alone explained 6% of variance in BRQ score, item 12 explained a further 3%. Total variance in BRQ score explained by all six items individually and in combination was 52%.

4. Discussion

Although the importance of personal recovery in mental health is increasingly widely recognised there has been little research into this area in relation to bipolar disorder. BRQ is the first self-report tool specifically designed to capture the subjective experience of recovery in individuals with bipolar disorder. In line with Anthony's (1993) proposal that recovery experiences are highly personal and multifaceted, the BRQ items were informed by prior qualitative research on the nature and experience of recovery in bipolar disorder (Jones et al., 2010). Item relevance and comprehensibility was also reviewed by clinical, research and consumer experts to refine the final version of BRQ. Current findings indicate that the questionnaire is internally consistent and reliable over time. Significant associations were observed with mood symptoms; as expected, recovery was associated with lower levels of manic and depressive symptoms and higher levels of wellbeing. The one mood measure that was not significantly associated with BRQ was the MRS which may be due to very low mania scores in the current sample. Additionally, when associations were explored between BRQ and MRS elevated mood item and HRDS depressed mood item, both correlations were significant consistent with the pattern of increased recovery being linked to lower mania and improved depression. Additionally BRQ was also associated with improvements in overall functioning, improved mental health, improved positive well being, experience of personal growth and improved overall functioning Recovery was associated with the majority of the items from the PTGI, with particularly strong associations with items concerned with a stronger sense of being able to cope with challenges and greater acceptance of how life can work out. Regression analysis indicated amongst the measures of mood that self-rated depression and wellbeing were unique associates of recovery. Conversely, amongst measures of functioning and growth, both personal growth, improved overall functioning and positive mental health were unique associates of recovery. When these variables were combined a final regression indicated that personal growth, wellbeing and self-reported depression contributed uniquely to explained variance in BRQ score. The results indicate the BRQ is not solely a measure of either functioning or mood symptoms but appears to capture a combination of these elements consistent with both personal reports of individuals with bipolar disorder and with Anthony's wider definition of recovery. Neil and colleagues (Neil et al., 2009) also found significant associations between their Questionnaire about the Process of Recovery and measures of health and quality of life in their sample of participants with psychosis. However their study did not look specifically at the relative contributions of symptoms and functioning to recovery experiences. A further regression analysis of the relationships between specific PTGI items and BRQ indicated that only one item (I know better that I can handle my difficulties) was a unique associate suggesting the potential importance of confidence in one's own resources in recovery in this group.

The current findings suggest that BRQ has potential as a method for economically evaluating recovery outcomes in research studies and clinical practice for people with bipolar disorder. Indeed, BRQ is currently being employed by our research team as an outcome measure for a randomised controlled trial of recovery informed CBT for bipolar disorder alongside more traditional measures of symptom and relapse outcomes (Jones et al., in press). Employing both types of measure in such studies offers important opportunities to understand more about which treatments are beneficial for clinical and personal recovery respectively with a view to developing treatment programmes which offer an optimal balance between these elements.

There are limitations to the current study. Firstly, the size of the sample meant that principal components analysis was not appropriate. In future research it would be appropriate to explore the factor structure of the BRQ in a larger sample to understand more about whether it contains subscales with particular relationships to symptoms or functioning. Secondly, although the BRQ was reliable over a period of one month in the current sample it would be helpful to again replicate this finding in a larger sample than that available in the current study. Thirdly, although the sample was drawn from across the North West of England and from a range of different services it is not yet established how generaliseable the current findings are to the wider UK or international groups of people with bipolar disorder.

It is also recognised that BRQ is a self report tool and therefore captures the subjective experiences of individuals. This is a strength in terms of definitions of recovery which highlight its individualised, personal and subjective nature. Although more objective observer rated tools are available for the assessment of clinical recovery it is unclear whether this is possible for personal recovery. The current findings indicate that personal recovery and clinical recovery are linked but not synonymous for individuals with bipolar disorder.

In conclusion, BRQ was developed with extensive input from individuals with personal experience of bipolar disorder in recognition of the importance of identifying personally defined recovery experience. The resulting questionnaire appears to be a reliable and valid measure of recovery in bipolar disorder. Although further research is indicated to finalise BRQ's factor structure, it has promise as a tool for research and clinical practice and is currently being evaluated as an outcome measure in an RCT of new psychological intervention for bipolar disorder.

Conflict of interest

None.

Appendix 1. The Bipolar Recovery Questionnaire (BRQ)

The Bipolar Recovery Questionnaire has been developed in order to understand more about recovery in bipolar disorder;

what recovery is and what can help or hinder recovery. The questionnaire has been developed by interviewing individuals with a diagnosis of bipolar disorder about their experiences of recovery. It is acknowledged that everybody is different and may have different experiences and views about recovery. Therefore not all of the statements on the questionnaire may apply to you.

When filling in the questionnaire, please consider how things have been for you in the last week in relation to your mental health and recovery. Please respond to the following statements by marking an "X" at the point on the line that best describes how much you agree with each statement (for an example, see below).
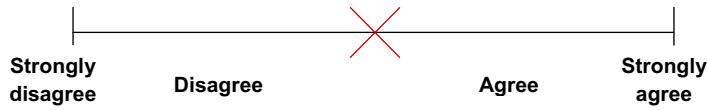
Strongly disagree	Disagree		Agree	Strongly agree

1. I struggle to make sense of the experiences I have had

2. I have the resources to effectively manage my health

3. I am content with who I am as a person

4. I have little control over my mood

5. I avoid taking on challenges in life that matter to me

6. I see recovery as a life-long process

7. I think differently about some of my experiences now compared with when they first occurred

8. I can access the help I need in order to stay well

9. My experiences have made me the person I am today

10. I recognise when I am in situations that aren't good for my wellbeing

11. I am able to engage in a range of activities that are personally meaningful to me

12. Recovery means forgetting about my mental health problems

13. I am unsure about the reasons behind some of the experiences I have had

	Strongly disagree	**Disagree**	**Agree**	**Strongly agree**

14. I feel in control of the things that happen in my life

15. I am productive in the things in life I engage in

16. I depend on others to maintain my own well being

17. I feel confident enough to get involved in the things in life that interest me

18. I can have mood experiences and still get on with my life

19. I can see where certain experiences I have had have come from

20. I am able to decide when I need support from others in order to maintain my wellbeing

21. I get little personal satisfaction out of the things in life I am involved in

22. I have the knowledge to make informed decisions concerning treatment for my mental health

23. I am unhappy with the person I have become

24. I sometimes let my mood fluctuate if I have important tasks to do

25. The high standards I set myself are unrelated to fluctuations in my mood

26. I play a central role in maintaining my own well being

27. I have the ability to achieve my goals in life

28. My ability to make informed choices about treatment is supported by my friends and family

29. I find it hard to engage in a range of activities that are valuable to me

30. I can still be in recovery even if I experience mood episodes in the future

	Strongly disagree	Disagree	Agree	Strongly agree

31. Understanding where my mood experiences come from helps me manage them

32. I have little control over the important decisions in my life

33. I am able to engage in a range of activities that are valuable to wider society

34. The knowledge I have gained enables me to look after myself

35. The activities I do make a difference to others

36. Being in recovery means that everything has to be going well in every aspect of my life

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