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APPRAISALS OF AND RESPONSES TO HYPOMANIC STATES IN BIPOLAR AFFECTIVE DISORDER

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Abstract

There has been an increased interest in the last decade in studying the cognitive processes that could explain the development and maintenance of bipolar affective disorder. Further research is needed to understand the interpretations people with bipolar affective disorder make about their energetic, positive moods and the mechanisms used to regulate their mood states. This study investigates the presence of extreme, personalised beliefs about internal states and cognitive strategies of positive mood regulation amongst remitted clinical participants with a diagnosis of bipolar affective disorder. The inter-relation between positive and negative appraisals of energetic, agitated states on one hand and enhancing as well down-regulating positive mood strategies on the other hand is also explored. Remitted bipolar participants (N= 30) were compared with healthy controls (N= 27) on measures of interpretations of hypomanic states (Hypomanic Attitudes and Positive Predictions Inventory, Mansell & Sadhani, 2007) and ruminative responses in regards to positive mood (Response to Positive Affect Questionnaire; Feldman, Joorman & Johnson, 2008). Levels of current mood at the time of data collection were assessed. Results indicated that people with a diagnosis of bipolar affective disorder, in a remitted phase, showed elevated levels of positive extreme beliefs about their hypomanic states as well as higher levels of catastrophic, self-and-other critical and loss of control beliefs than people with no history of mental health difficulties. It was found that remitted bipolar affective participants are ambivalent about positive mood states, engaging in both enhancing and down-regulating positive mood strategies. Tendency to dampen positive affect was positively correlated with catastrophic and self-and-other critical beliefs about activated states. A positive association was also found between self-activating beliefs and positive rumination strategies. The findings bring further evidence for

the theory driven cognitive model developed by Mansell, Morrison, Reid, Lowens & Tai, (2007), highlighting the importance of focusing in clinical practice on the interpretations people with bipolar affective disorder make about their internal states and the need to incorporate emotion regulation techniques in the treatment of this client group.

Appraisals of and Responses to Hypomanic States in Bipolar Affective Disorder

1.1. General Introduction

Bipolar affective disorder is an episodic, long-term mood disorder associated with significant difficulties in occupational, social and marital functioning. Co-morbid conditions such as anxiety disorders, substance abuse and personality disorders are common and impact negatively on treatment outcome and illness prognosis (Krishan, 2005). Psychological treatments such as cognitive-behavioral therapy, interpersonal and social rhythm therapy and family focused therapy have been offered to sufferers alongside pharmacological treatments but rates of relapse remain high and effectiveness data is inconsistent (Jones & Bentall, 2006, Lam et al, 2003; Perry, Tarrier, Morriss, McCarthy, & Limb, 1999; Scott et al., 2001, Scott et al., 2006; Tohen, Waternaux & Tsuang, 1990). This lack of progress in developing more effective psychological treatments for bipolar affective people might reflect the lack of theoretical integration of the psychological factors that are relevant in the development and maintenance of illness episodes (Mansell, Colom & Scott, 2005; Mansell et al., 2007).

An integrative cognitive model of bipolar disorder developed by Mansell et al. (2007) places at the heart of understanding hypomanic and depressive episodes a set of extreme, positive and negative personalized interpretations of hypomanic states. Evidence for the model has started to emerge, but it is argued that further research is needed to clarify the set of unique beliefs that might account for and contribute to hypomanic as well as depressive episodes.
The studies reviewed in this introduction bring evidence for the argument that mood fluctuations, a key feature of bipolar presentation have been insufficiently researched, despite support from neurobiological research suggesting that people with bipolar affective disorder show structural

and functional abnormalities in the neural regions involved in affect regulation (Blumberg et al., 2003; Dickstein et al., 2005).

The question of interest for the clinical practice of treating people with bipolar affective disorder is how people with bipolar affective disorder think and respond to their "high" and "low moods", given the frequent mood changes present in this client group, even when they are outside of an illness episode. Research has established a possible link between mania risk and responding to negative mood by engaging in distraction and risk-taking activities (Knowles, Tai, Christensen & Bentall, 2005; Morrison, Peyton & Nothard, 2003; Thomas & Bentall, 2002). Given that positive, elated mood is a key feature of hypomanic states, it is necessary to investigate beliefs and strategies in response to positive moods in order to increase our understanding of the cognitive processes involved in bipolar illness episodes. This process is essential in order to devise more targeted, effective psychological treatments for bipolar affective disorder.

The present study investigates whether people with bipolar affective disorder attach contradictory, positive and negative meaning to hypomanic states and whether they attempt to regulate their positive mood states using cognitive strategies of both amplifying and diminuating the intensity of their emotional experiences.

The introduction continues with a description of bipolar disorder, its mood episodes and illness course. An overview of current psychological treatments of bipolar affective disorder is presented followed by a description of the clinical presentation of mood fluctuations in bipolar affective disorder. A summary of the main findings to date in the area of affect regulation strategies is included, with focus on critically reviewing the strengths and limitations of the studies concerned with the regulation of positive and negative mood amongst people at risk of

developing bipolar affective disorder or with a diagnosis of bipolar affective disorder. Main theoretical models of bipolar affective disorder are briefly mentioned before describing the integrative cognitive model of mood swings and bipolar disorder developed by Mansell et al. (2007). The argument that the presence of self-critical, catastrophic beliefs about activated states needs to be further tested in clinical populations is proposed through a presentation of the research into the cognitive model since its publication. Finally, the study rationale is summarised, and the research questions set out.

1.2. Bipolar Disorder

1.2.1. Types of Bipolar Disorder, Frequency and Impact on Functioning. Bipolar disorder affects at least 1.9% of the UK population (Carr & McNulty, 2006) and has devastating effects on life chances, being associated with high risk of self-harm and suicide as well as with significant problems with employment, economic wellbeing, and marital stability (Angst, 1998; Carr & McNulty, 2006; Isometsa, 1993).

According to the Diagnostic and Statistical Manual (DSM-IV, 4th Edition, American Psychiatric Association, 1994) bipolar disorder is characterised as an episodic, long-term mood disorder. The DSM-IV Text Revision (2000) lists four specific subtypes of bipolar affective disorder: Bipolar I, Bipolar II, Cyclothymia, and Bipolar Disorder NOS (Not Otherwise Specified). Five types of mood episodes are defined: Major Depressive episodes, Periods of Remission or no symptomatology, Manic episodes, Hypomanic Episodes and Mixed Manic Depressive episodes.

Epidemiological studies have documented that at least 5% of the community would qualify for a diagnosis of bipolar spectrum disorder, which includes Bipolar I, Bipolar II, cyclothymia, and other types (Angst, 1998; Lewinsohn, Klein & Seeley, 1995). Bipolar II

Disorder appears to be more common amongst women but similar prevalence rates are reported amongst men and women in relation to Bipolar I disorder (Hilty, Brady & Hales, 1999). Co-morbidity with substance abuse, anxiety disorders and personality disorders is high (Carr & McNulty, 2006). The presence of co-morbid conditions amongst people with Bipolar Disorder appears to predict a more severe course and is associated with poorer treatment outcomes (Krishnan, 2005). Between 25% and 50% of sufferers make at least one suicide attempt and up to 19% of sufferers die from such attempts (Hawton, 1992; Isometsa, 1993). The characteristics of the specific subtypes of bipolar affective disorder are described further in the next section.

1.2.2. Characteristics of Mood Episodes. Typically, people with bipolar disorder experience periods of severe depression, mania or hypomania, in addition to periods of relatively stable mood in which mood swings and sub-clinical symptoms can still be present (Judd et al., 2003, Judd et al., 2002; Perugi, Toni, Travierso & Akiskal, 2003). During each phase, extreme disruptions to mood, behaviour and cognitive functioning occur, leading to a complex presentation of symptoms. The key defining feature of bipolar I disorder is mania, characterised by a wide range of symptoms from elevated, expansive or irritable mood to inflated self-esteem and grandiosity, pressure of speech, decreased need for sleep, thoughts racing, distractibility, and increased goal-directed activity (APA, 2000). Many patients experience also psychotic symptoms such as delusions, thought disorder and hallucinations (APA, 2000). Bipolar I Disorder is characterised by the occurrence of one or more manic episodes or mixed episodes (i.e. features of both mania and depression are present at the same time) and it affects 35%-40% of all patients (Angst, 1978). A Major Depressive or Hypomanic episode is not required for diagnosis. However, about 60%-65% of all patients experience depressive and hypomanic episodes in addition to manic ones (Angst, 1998). Individuals with Bipolar II experience

hypomania rather than mania. Hypomanic episodes are shorter in duration, do not include psychotic experiences and do not lead to clinically severe social impairment or hospitalization (APA, 2000). Because hypomanic episodes do not usually cause severe social or occupational impairment bipolar II can be more difficult to diagnose, as hypomanic episodes may simply appear as a period of “high productivity” and increased energy levels. A subgroup of patients with either Bipolar I or Bipolar II Disorder has been labelled "rapid cycling" as they display extreme alternating mood states, with brief or even nonexistent periods of healthy functioning (Akiskal, 1996).

In addition to Bipolar I and Bipolar II Disorder, a third mood disorder, Cyclothymic Disorder has been described. The distinction between cyclothymic and bipolar disorder is still unclear (Goodwin & Jamison, 1990). The main feature of cyclothymic disorder is that the depressive episodes do not meet the criteria for a Major Depressive Episode.

1.2.3. Course of Illness. Bipolar disorder is a recurrent mood difficulty. The majority of individuals diagnosed suffer further episodes, even with mood stabilising medication (Goodwin & Jamison, 1990).

Some studies report a rate of relapse of up to 40% within the first year and up to 90% over 4 years (Gitlin, Swendsen, Heller & Hammen, 1995; Tohen et al., 1990), although it is recognised that there is a wide variability between and within individuals.

Mood episodes vary also in length with an average length of manic episodes of three months. Depressive episodes tend to last between three and eight months (Krauthammer & Klerman, 1978). It is also known that as many as 35%-60% of patients diagnosed with a bipolar disorder remain chronically ill or have a poor outcome (Harrow, Goldberg, Grossman & Meltzer, 1990; O'Connel, Mayo, Faltow, Cuthberston & O'Brien, 1991).

1.2.4. Summary. Bipolar affective disorder is a severe illness with significant impact on individuals' functioning. A complex presentation of symptoms is required for a diagnosis of bipolar affective disorder. Sufferers have to cope with recurrent episodes of depression and mania and for many patients, additional co-morbid conditions are present, impacting on daily functioning and illness prognosis. A diagnosis of bipolar affective disorder can mask wide differences between individuals in regards to symptom presentation, impact on functioning and illness course.

1.3. Current Treatments of Bipolar Affective Disorder

Given the impact on individuals' functioning and well being and the cost for society, the development of efficient treatments for bipolar affective disorder has been a priority for researchers and health care providers in the last decades. Both pharmacological and psychological treatments are available to those affected by bipolar disorder.

1.3.1. Pharmacological Treatments. The discovery of the effects of lithium salts in the late 1960's and the development of biomedical approaches to bipolar affective disorders have led to an increase in the use of pharmacological interventions as a main form of treatment (Jones & Bentall, 2006). In the context of overwhelming evidence that bipolar affective disorder has a significant genetic component, medical treatments were considered the best way of treating what was perceived as a primarily biological disorder (Goodwin & Jamison, 1990; Scott, 1995). Meta-analysis studies support the idea that lithium is the main proven mood stabilizer in bipolar disorder (Baldessarini & Tondo, 2000; Goodwin, 2000), although carbamazepine and sodium valproate have proved to be effective too (Lam, Jones, Hayward & Bright, 1999).

Despite the proven efficacy of drug treatment of bipolar disorder, the pharmachotherapy of bipolar disorder has still a long way to go to achieve high success rates (Grunze, 2002).

Furthermore, many controlled trials focused only on Bipolar I patients leading to a neglect of the treatment of bipolar depression. Also, some studies identified that pharmacological treatment is of varying efficacy in different stages of the illness (Bowden et al., 2000; Calabrese et al., 1999) and non-response rates and non-compliance with medication are high in this client group (Jamison & Akiskal, 1983; Jamison, Gerner & Goodwin, 1979; Schou, 1997).

Overall, the above evidence suggests that the medical treatment of bipolar disorder continues to remain a challenge for the mental health professionals and sufferers. The variable outcome rates of medical treatments have led to increased attention to the role of psychosocial interventions as adjuncts to medical model treatments.

1.3.2. Psychosocial Treatments of Bipolar Affective Disorder. Despite the publication of several reviews on the role of psychological interventions in bipolar patients (Scott, 1995; Swartz & Frank, 2001) psychological treatments for this severe illness have developed slowly (Vieta, 2004).

There are several forms of structured psychological therapies in bipolar treatment for which there is scientific evidence: individual cognitive-behavioural therapy (CBT), group psychoeducation, interpersonal and social rhythm therapy and family focused intervention (British Psychological Society, Clinical Psychology Division, 2010; National Institute for Health and Clinical Excellence Guidelines, 2006). The overall aim of psychological therapies is to help individuals to develop strategies to manage illness episodes, identify prodromes and reduce future relapse. Although there are no comparative trials of the efficacy of different psychological therapies in bipolar affective disorder, models of effective therapies seem to share many characteristics in terms of style and content (Scott & Gutierrez, 2004). The most important component of any therapy for bipolar affective disorder appears to be psychoeducation, in

addition to developing skills for identifying illness prodromes and coping with depression and mania (Lam et al., 1999; Scott, Garland & Moorhead, 2001). However, there are recognisable difficulties in achieving these aims, given that prodromes of depression are especially hard to predict and many people attach personal significance to feeling energetic and elated in mood, making them less motivated to address problematic behaviours that exacerbate manic prodromes (Lam, Wong & Sham, 2001; Seal, Mansell & Mannion, 2008).

Family focused treatment (FFT) aims to improve communication, problem-solving and coping strategies, in addition to focusing on psychoeducation and relapse prevention (Goldstein & Miklowitz, 1997). A randomized controlled trial comparing FFT over 9 months with brief psychoeducation followed by crisis management found fewer depressive symptoms and lower probability of relapse in the treatment group (Micklowitz et al., 2000). This effect seemed particularly evident amongst families that showed high levels of expressed emotion. However, manic symptoms and relapse were not significantly affected by the intervention. Further studies are needed to investigate the role of psychosocial and interpersonal factors in the development of bipolar symptoms.

Cognitive-behavioural therapy trials in clients with bipolar affective disorder have generated conflicting results (Lam et al., 2003; Perry, Tarrier, Morriss, McCarthy & Limb, 1999; Scott et al., 2001, Scott et al., 2006). Some studies identified that brief CBT in conjunction with pharmacotherapy reduces significantly rates of relapse at one-year follow up and improves social functioning compared with treatment as usual (Colom et al., 2003; Lam et al., 2001; Lam et al., 2003; Miklowitz et al., 2000; Perry et al., 1999; Scott et al., 2001). However, other studies found no overall effect of CBT on relapse in bipolar disorder participants (Scott et al., 2006).

These contradictory results could be explained partially by the inclusion in the studies of different type of bipolar participants, with various symptoms severity levels and by the use of different outcome measures. For example, Lam et al. (2003) included only participants in an euthymic state whereas Scott et al. (2006) included also patients with symptoms of moderate to severe depression or in a hypomanic state.

Another possible explanation for such conflicting evidence in regards to the effectiveness of cognitive therapy in treating people with bipolar disorder is the limited understanding of the psychological factors involved in the development and maintenance of the illness episodes (Mansell, Colom & Scott, 2005; Mansell et al., 2007). This theoretical uncertainty might have been translated into the treatment arena, as current CBT treatments seem to remain vague in regards to the specific features of CBT for bipolar disorder in comparison to CBT for other psychiatric conditions (e.g. unipolar depression). Some authors highlight the importance of addressing in therapy self-stigmatising attitudes and feelings of loss associated with illness episodes (Lam et al., 1999; Newman et al., 2002). In addition, challenging dysfunctional assumptions around the importance of autonomy and success for one's sense of self-worth seems to be relevant when treating people with bipolar affective disorder (Lam et al., 1999; Newman et al., 2002). However, it can be argued that these treatment areas are also relevant when undertaking CBT for unipolar depression or other disorders.

1.3.3. Summary. In summary, in addition to pharmacology, bipolar affective disorder patients can benefit from psychological therapies to manage illness episodes and prevent future relapse. Despite evidence of efficacy for different therapies obtained through randomised controlled studies, it still remains unclear whether different therapies are also effective when applied to the realities of clinical practice, where often co-morbid conditions and sub syndromal

symptoms are the norm rather than the exception (Scott & Colom, 2008). Further research into the specific factors and processes that maintain illness episodes is needed in order to deliver theory driven treatments that are tailored to address the “specific” psychological vulnerabilities present in bipolar affective disorder patients.

1.4. Mood Fluctuations in Bipolar Affective Disorder

Given that mood instability is a hallmark of bipolar presentation, understanding patients’ experience of mood fluctuations and how they respond to them is an important question in order to develop an understanding of the psychological factors involved in the onset and the course of bipolar disorder. The next section will review the literature on mood regulation in people with bipolar affective disorder.

1.4.1. Clinical Presentation of Mood Instability in Bipolar Affective Disorder. Mood fluctuations are a key symptom across a variety of psychological disorders from anxiety disorders to borderline personality disorder and schizoaffective disorders (APA, 2000). However, mood fluctuations are rarely so intense and problematic as in individuals with a bipolar condition. Amongst individuals with a bipolar affective disorder, periods of elation and intense positive affect are often followed by severe dysphoric mood. In the manic phase of the disorder, features of elevated, expansive or irritable mood are present, sometimes simultaneously with symptoms of depression and dysphoria (Mansell & Pedley, 2008). Even outside episodes of clear mania and depression people with bipolar disorder experience significant fluctuations in their moods (Judd et al., 2002, 2003; Perugi et al., 2003). Significant variability of positive and negative affect across days and high levels of negative and positive affect have been also found in young adults with cyclothymia and in individuals with "hypomanic personality" (Hofman & Meyer, 2006; Lovejoy & Steuerwald, 1995).

Evidence for the presence of intense affect experienced by people with a bipolar presentation comes also from studies looking at personality dimensions in people with bipolar affective disorders. Bagdy et al. (1996) and Young et al. (1995) showed that euthymic bipolar patients can be characterised as more attentive to inner feelings and more likely to experience positive emotions than patients with remitted unipolar depression. Furthermore, euthymic bipolar disorder patients have been described as experiencing both positive and negative emotions more intensely and in a more differentiated fashion than unipolar patients (Bagdy et al., 1996).

In summary, the above evidence indicates that people on the bipolar spectrum experience intense positive and negative affect, a higher rate of daily mood fluctuations even during remission and a tendency to experience higher levels of emotional reactivity than people with no history of mental health difficulties.

Given the ubiquity of mood fluctuations in the lives of people with bipolar affective disorder, this illness has been often described as a severe mental disorder with a chronic inability to regulate mood in an appropriate manner (Hirchsfeld, 2002). This difficulty in affect regulation has neurological correlates. Several neuroimaging studies have consistently found structural and functional abnormalities of the neural regions involved in emotion regulation in individuals with bipolar disorder, in particular abnormalities in the grey and white matter of the orbitofrontal cortex, amygdala volumes, and in the lateral and dorsal prefrontal cortical regions (Blumberg et al., 2003; Dickstein et al., 2005; Phillips, Ladouceur, & Drevets, 2008).

Despite the emerging evidence that suggests that mood instability and intense affect are central to the experience of people with bipolar affective disorder, there has been little progress in understanding the psychological aspects of mood regulation amongst people with the disorder (Kring & Wegner, 2004). Mood regulation might be of particular relevance for treatment, as

learning to compensate for the neurological correlates of mood instability could be essential in managing illness episodes. A summary of the main findings in the area of emotion and mood regulation strategies in people with a bipolar affective disorder will be presented in the section below. Before presenting this summary, clarifications of the meanings ascribed in this thesis to terms such as "emotion", "affect" and "moods" will be made.

1.4.2. Emotion, Affect and Mood: Conceptual Definitions. The literature on emotion regulation is full of ambiguities in regards to defining concepts such as "emotion", "affect", and "moods". Whilst some authors use the term affect and emotion interchangeably (Davidson, 2003), others refer to affect only in relation to the experiential or behavioural components of the emotion (Buck, 1993; Kaplan & Sadock, 1991; MacLean, 1990).

Russell and Barrett (1999) understand affect as feeling states that are components of a prototypical emotion episode. An emotion episode occurs in response to internal or external events and comprises of cognitive, behavioural and physiological components. Moods are seen as lasting longer than emotions (Parkinson, Briner, Reynolds & Totterdell, 1996) and give rise to broad action tendencies such as approach or withdrawal (Lang, 1995). Moods are better thought of as general frames of mind that include a complex of cognitive and motivational tendencies, being associated with specific biases in interpretation of information, attention, motivation and action (Parrott, 1993).

Most of the studies investigating emotion regulation across different psychological disorders have defined emotion regulation as "the processes by which individuals influence which emotions they have, when they have them, and how they experience and express their emotions" (Gross, 1998, p. 275). For affect or mood regulation, authors such as Gross (1999); Parkinson et al. (1996) used a wider framework. They proposed that mood regulation could be

understood as a process of monitoring affective states. In this process, individuals take action either to maintain or to change (i.e. enhance or suppress) the intensity of their affect or to prolong or shorten affective episodes.

Throughout this thesis, I will use the terms affect and mood regulation interchangeably as a process of modulating the intensity of affective states.

1.4.3. Literature Review on the Psychological Factors Involved in Mood Regulation in Bipolar Affective Disorder. A literature review undertaken by the author identified several studies that investigated responses to positive and negative mood and affect regulation strategies in people with bipolar affective disorder or amongst people at risk of developing bipolar affective disorder.

The following databases were searched to identify relevant articles: PsychInfo (1860-2011), Medline (1865-2011), and Embase (1974-2011). Key search terms used were “mood*”; "regulation*"; "emotion*”, "positive” or “negative affect" ; these terms were combined individually with "hypomania"; "mania", “mania risk”, “mania* vulnerability”, "manic-depressive illness", “manic depression”; "bipolar"; "bipolar affective disorder". All searches were combined and duplicates removed.

The initial combined search elicited 470 papers. Only studies including subjects age 18 and older, written in English, were selected. Non-clinical studies were included if they involved subjects with hypomanic personality style, as there is significant evidence that this style is a risk factor for developing a disorder on the bipolar spectrum in the general population (Eckblad & Chapman, 1986). Due to the difficulties in terms of generalisability, single case studies were not included in this review. Studies that explored neurobiological correlates of bipolar affective disorder were excluded. Following the application of the above-mentioned inclusion and

exclusion criteria, 14 papers that addressed specifically the topic of affect regulation amongst people with bipolar affective disorder or at risk of bipolar affective disorder were selected. A summary of these studies including aim, methodology, design and main findings is presented in Appendix A. In this process, it was identified that ten studies published in the last four years have focused on the contribution of "appraisals" of hypomanic states to the hypomanic vulnerability, in relation to, or gathering evidence for the cognitive integrative model of mood swings developed by Mansell et al. (2007). A summary of these studies is presented in Appendix B. The next section will include a synthesis of the main research findings on the topic of mood regulation in people with bipolar affective disorder.

1.4.4. Affect Regulation Strategies in Bipolar Affective Disorder: Emotional Avoidance, Thought Control, Rumination and Worry. One of the main models of affect regulation applied to the field of bipolar affective disorder has been the emotion process model proposed by Gross (1999). Gross (1999) divides emotion regulation strategies into antecedent-focused and response focused strategies. Antecedent focused strategies usually occur before the emotion has been evoked (e.g. cognitive reappraisal, situation modification, attention deployment) whereas response-focused strategies occur after the emotion has been experienced. Both strategies are meant to contribute to the regulation of emotional experiences that are perceived by the individual as unhelpful or potentially dangerous for the individual's functioning.

Defined as attempts to down-regulate and ultimately avoid painful emotional experiences (Barlow, Allen & Choate, 2004), emotional avoidance is an affect regulation strategy that can be employed by some individuals in response to traumatic events. This strategy has been hypothesised to occur in people with a bipolar affective disorder, given that a history of early trauma is common amongst people with bipolar disorder (Alloy et al., 2005; Hammersley et al.,

2003; Mansell et al., 2007; Tzemou & Birchwood, 2007). In their study of negative intrusive memories in participants with Bipolar I disorder, Tzemou and Birchwood (2007) found that participants in a depressive or hypomanic episode experienced negative intrusive memories about past events that provoked distress and presented with an overgeneral, avoidant response style in response to them. The study findings are consistent with previous studies that found that remitted bipolar disorder people present with overgeneral memory in their recall of autobiographical memories, and thus endorse an avoidant style of cognitive processing (Mansell & Lam, 2004; Scott et al., 2000).

The above findings support the idea that overgeneral memory is part of a generalized affect regulation strategy that might be present during remission periods in people with bipolar affective disorder. During illness episodes this strategy might be employed more intensely. This overgeneral, avoidant response style could contribute to the development of future illness episodes because specific memories about how the individual coped with past situations are less accessible and thus past experience can not be utilised to cope effectively with current problems. On one hand, this style might reduce the stress associated with problematic life events, but also reduces awareness of emerging distressing affect, and this continuous effect might accelerate an illness relapse. However, lack of prospective studies makes it difficult to conclude on the significance of this affect regulation strategy in the bipolar disorder relapse. Furthermore, the findings applied equally to unipolar depressed and bipolar groups, suggesting that similar cognitive processes might be present in both bipolar and unipolar mood disorder patients.

Another convenient and common way of reducing emotional responsiveness in a variety of emotional disorders is thought suppression (Barlow et al., 2004).

Thought suppression is defined as an effort to "not think about' a particular unpleasant or unwanted thought (Wegner, Schneider, Carter & White, 1987), and can take different forms. Wells and Davies (1994) differentiated five types of conceptually distinct strategies people use to control their unwanted thoughts: distraction, social control, worry, punishment and reappraisal. Only one study has investigated thought control strategies in people with bipolar affective disorder but lack of published data makes it difficult to evaluate and interpret the significance of the results (Taylor, Morrison & Bentall, 2006 as cited by Mansell et al., 2007). The authors apparently found higher levels of unhelpful thought control strategies in bipolar depressed and bipolar manic when compared with healthy controls but no results were reported on whether they found any differences between remitted bipolar and healthy controls. These results seem to suggest that thought control strategies are more likely to characterise illness episodes but they might not be present between episodes. As there is no published data on the specific unhelpful strategies endorsed by the bipolar group or the sample characteristics it remains unclear whether specific thought control strategies were unique to bipolar disorder or whether they could have been explained by the presence of co-morbid anxiety or depressive symptoms. In a study that investigated "transdiagnostic" processes involved in emotion regulation (i.e. rumination, worry and negative automatic thoughts), no differences were found between euthymic bipolar I disorder participants and healthy controls when current symptoms of anxiety and depression were controlled for (Gruber, Eidelman & Harvey, 2008).

1.4.5. Summary. Overall, the above studies seem to suggest that affect regulation strategies in the form of thought control and avoidant processing style of negative intrusive memories might be latent during remitted periods and become activated during an hypomanic/manic or depressive episode. Once activated, it is likely that these affect regulation

strategies contribute to the maintenance of the illness episodes and indirectly contribute to further episodes as they block the processing of emotionally relevant material. The individual does not process their stressful experiences and thus cannot master more functional coping mechanisms for similar future situations.

However, given the few studies in this area, it is unclear whether these mechanisms are specific to bipolar affective disorder or whether they represent more trait-type, global cognitive processes that in combination with other factors might increase vulnerability to bipolar illness and whether they increase risk of relapse. Furthermore, it might be possible that affect regulation strategies of rumination, thought control, and worry are processes related to the co-morbid anxiety and depressive symptoms rather than being associated with bipolar psychopathology.

1.5. Beliefs about Affect Regulation amongst People with Bipolar Affective Disorder

In addition to the application of the process model of emotion regulation to understanding how people with bipolar affective disorder might respond to negative emotions, recent studies concentrated on the role of beliefs about emotional states (Morrison et al., 2006; Reid, 2005, as cited in Mansell et al., 2007). It is known that beliefs about affective states can decrease or increase levels of affect and impact on how affect is experienced and regulated (Leahy, 2006).

Several studies enquired on the nature of appraisals and beliefs about positive and negative mood and tested whether behavioural strategies in response to different moods could contribute to the development of a hypomanic, manic or depressive episode. A summary of these studies has been included in Appendix A, as previously mentioned.

1.5.1. Studies Investigating Regulation of Negative Affect in People with Bipolar Affective Disorder or at Risk of Developing a Bipolar Illness. One line of research has

investigated the strategies used in response to negative mood employed by people at risk of bipolar or with experience of a bipolar affective illness. This line of research has been informed by the "depression avoidance hypothesis" that argues that mania might arise from attempts to avoid a negative emotional state. An extensive body of evidence indicates depressogenic psychological processes associated with manic, hypomanic and euthymic states (Scott et al., 2000, Winters & Neale, 1985). To test the depression avoidance hypothesis, cognitive theories of the role of emotion regulation strategies in the maintenance of emotional disorders, in particular the Response Style Theory (RST) of emotion regulation (Nolen-Hoeksema, 1991) have been drawn upon.

Two main regulation strategies in response to depression are proposed in the RST: distraction and rumination. Rumination in response to negative affect is defined as the "behaviours and thoughts that focus one's attention on one's depressive symptoms and the implications of those symptoms" (Nolen-Hoeksema, 1991).When people engage in ruminative processing, they repetitively focus on the content, causes and consequences of their negative affective states, often recalling the specific chain of events that occurred. Consequently, their sad mood deepens and lasts longer.

Rumination in response to negative affect has been shown to predict the maintenance of negative affect and has been associated with the onset of depressive symptoms in major depression (Kuehner & Weber, 1999; Just & Alloy, 1997; Nolen-Hoeksema, 2000; Nolen-Hoeksema & Morrow, 1991; Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008).

Rumination is not the only strategy that people employ in response to negative mood. Sometimes people try to forget about their negative feelings by distracting themselves and

diverting their attention away from depressed mood, focusing instead on neutral or pleasant activities (Nolen-Hoeksema, 1991). Distraction leads to less intense and acute symptoms and a lowered likelihood of full-blown depression (Nolen-Hoeksema, 1991).

Considering that bipolar depression shares many similarities with unipolar depression and given the hypothesis that mania might arise from attempts to avoid negative emotional states, authors such as Knowles, Tai, Christensen & Bentall (2005) and Thomas & Bentall (2002) investigated how people at risk of mania respond to negative moods. They investigated the coping styles endorsed by people with hypomanic tendencies, testing the hypothesis that bipolar patients might employ a response style that initially reduces depressive symptoms but that carries the risk that a hypomanic or manic episode develops. They used non-clinical samples (i.e. undergraduate students) and the Response Styles to Depression Questionnaire (RSQ; Nolen-Hoeksema, 1991), a well-established self-report inventory of stable trait-like behaviours observed in response to feelings of depression. Both Knowles et al. (2005) and Thomas & Bentall (2002) found that hypomanic traits were associated with a distraction response style and with tendency to indulge in risk-taking activities (e.g. taking drugs, initiating relationships with strangers, etc.).

Morrison et al. (2003) obtained comparable results to those mentioned by Knowles et al. (2005), and Thomas & Bentall (2002). They also investigated the hypothesis that bipolar patients exhibit the manic defense as a result of unhelpful beliefs about the meaning of depression . In their study of 112 non-clinical participants, those with high vulnerability to mania scored significantly higher on measures of frequency of active coping than those of lowest vulnerability. In addition, those with high predisposition to mania made increased use of social coping in comparison to those with low predisposition to mania.

However, the results reported by Morrison et al. (2003) indicate that people with predisposition to mania respond to the experience of negative affect (i.e. feeling depressed) by engaging in active and social coping, although they do not seem to necessarily believe that these strategies might be useful. In their study, no significant correlation was found between self-reported beliefs about antidepressive behaviours and predisposition to mania.

Other studies investigated response style to negative emotions among clinical participants. Thomas, Knowles, Tai & Bentall, (2007) in a comparative study of bipolar patients in different phases of the disorder and healthy controls, found that manic patients reported greater use of active-coping and risk-taking compared to the depressed, remitted and healthy controls.

A study undertaken by Morrison et al. (2006; as cited in Mansell et al., 2007) found that "bipolar disorder participants in a depressed phase were more likely to believe that both distraction and active coping could prevent depression when compared to people with unipolar depression and non-patient participants" (Mansell et al., 2007, p. 526). However, lack of published data makes it difficult to draw a definitive conclusion in regards to which specific anti-depressive beliefs and behaviours might be associated with increased risk of developing mania and which attitudes about depression are present for patients with bipolar affective disorder across different stages of their illness.

In conclusion, all the aforementioned studies that investigated a possible link between risk of mania and specific responses to negative mood have found consistent results (Knowles et al., 2005; Morrison et al., 2003; Thomas & Bentall, 2002). Both distraction and engagement in dangerous activities were found to be associated with mania risk and predicted variance in hypomanic scores.

The above results suggest that people at risk of bipolar illness may try to avoid negative emotion by directing attention towards neutral, pleasant or even high-risk activities. Interestingly, the studies that looked at response styles in non-clinical populations (Knowles et al., 2005; Thomas & Bentall, 2002) found also an association between negative rumination and hypomania.

One possibility in regards to how hypomanic symptoms develop is that they might arise from a cyclical pattern encompassing rumination and risk taking. When individuals become dysphoric, they initially may ruminate about the negative causes and implications of their feelings. Gradually, this leads to a worsening of their depressive symptoms until it reaches a point where, in an impulsive attempt to restore some feelings of self-worth they engage in pleasurable but risky behaviours.

However, rumination in response to negative affect was not found to be present in individuals with bipolar in the depressed phase to a higher degree than in healthy controls (Thomas et al., 2007), probably due to the study having low power (i.e. a small number of people in the depressed bipolar group). Interestingly, in the study by Thomas et al. (2007) it was found that only remitted bipolar patients ruminated more than the control or the manic patients, whereas Van der Gucht, Morris, Lancaster, Kinderman & Bentall (2009) reported that bipolar patients in all episodes exhibited higher rumination than controls.

The above results taken together with the results obtained by Knowles et al. (2005); Thomas & Bentall (2002) might indicate that the mechanisms involved in regulation of negative mood in people with bipolar disorder are multiple, depending on the stage of the disorder and also interchangeable throughout the illness cycle. Thus rumination to negative affect might be present in a remitted phase but when the mood decreases slightly, risk taking and active coping

becomes predominant, leading to the development of a full blown hypomanic/manic episode. Alternatively, there might be times when the individual resorts to rumination as a main mechanism of coping, leading to the onset of a depressive episode. When manic, even when the individual experiences depressive affect (i.e. as in mixed affective bipolar states), the experiences of elation and thoughts racing make the individual disengage temporarily from rumination as possibly the experience of depressive affect is short-lived during a manic episode.

1.5.2. Summary. Evidence to date indicates that depressive rumination in response to negative mood is present in individuals with bipolar spectrum disorders. However, it is not clear yet if this association is largely attributable to higher levels of depressive symptoms among bipolar individuals. Furthermore, there appears to be an association between risk of mania and tendency to move attention away from depressive mood by using distraction. However the results in regards to the latter are inconsistent. The majority of the studies investigating these aspects used non-clinical subjects and was cross-sectional in nature making it difficult to draw definitive conclusions.

Overall, it remains unclear what mood regulation strategies in response to negative affect are used by bipolar people in different stages of the disorder. This question is important in understanding how people move from a remitted phase to a depressed or hypomanic/manic phase. The type of the mood regulatory strategies used (i.e. adaptive versus maladaptive) could determine whether an individual manages to return to normal functioning when experiencing prodromal symptoms. More ecologically valid longitudinal methods looking at the association between depressive rumination, distractive response style and prospective onset of mood episodes in individuals with bipolar affective disorders are necessary (Alloy et al., 2009; Thomas et al., 2007).

However, for people on the bipolar spectrum, regulation of positive affect is another relevant area of interest that could help us understand how states of elation, high mood and feelings of activation are responded to.

1.5.3. Studies Investigating Regulation of Positive Affect in People with Bipolar Affective Disorder or at Risk of Developing a Bipolar Illness. The hypothesis that regulation of positive emotions might be as central for our wellbeing as regulation of negative affect has been around for decades (Bryant, 1989; Bryant, 2003; Quoidbach, Berry, Hansenne & Mikolajczak, 2009). In an influential paper, Martin and Tesser (1996) identified that people that engage in positive forms of rumination, such a reminiscing and basking in the face of new challenges show increased confidence and self-esteem. Bryant and Veroff (2007) argued that in order to fully understand how people cope with distress in their lives, we need to understand the thoughts and behaviours people engage before, during and after positive experiences. They described the capacity to savour as the capacity to "attend to, enhance, and appreciate" positive experiences and the process underlying these capacities as savouring (Bryant & Veroff; 2007). Studies have showed that capacity to savour impacts on emotional and physical wellbeing (Quoidbach et al., 2010).

Not all people regulate positive affect in the same manner. Some people with low self-esteem might try to "dampen" positive moods because they might feel they do not deserve them (Parrott, 1993) whereas people with high self-esteem might use predominately strategies to increase and maintain their positive mood (Wood, Heimpel & Michela, 2003).

Despite the fact that one cardinal symptom of bipolar affective disorder is elevated mood, researchers have only recently started to investigate responses to positive moods amongst people with bipolar affective disorder. This interest has been sparked by some emerging evidence in the

unipolar depression field that suggests that the way people vulnerable to depression respond to positive affect might impact on depression onset as well as on the maintenance and recurrence of depressive episodes (Clark & Watson, 1991; Henriques & Davidson, 2000; Raes, Daems, Feldman, Johnson & Van Gucht, 2009).

The idea that manic symptoms may be triggered by responses to positive mood states has been indirectly supported by the publication of several studies that linked mania and manic vulnerability to increased responsivity to positive stimuli (Johnson, 2005).

Several authors found that people who are vulnerable to mania show psychophysiological reactivity to positive pictures, elevated confidence after receiving false success feedback in laboratory tasks, and manic symptoms after life events involving success (Johnson et al., 2000; Johnson, Ruggero, & Carver, 2005; Sutton & Johnson, 2002). Both people with bipolar affective disorder and those at risk for bipolar disorder experience more positive emotions in their daily life than people with no history of mental health difficulties (Lovejoy & Steuerwald, 1995). Also, people with bipolar disorder or with manic vulnerability show high levels of achievement motivation and high reactivity to rewards (Johnson, 2005). In a case report of 17 patients with a history of mania, Peven and Shulman (1983) noted, "…their goals are to achieve prominence and prestige, but these goals are inappropriately high" (p. 13). Ambition and social achievement are attitudes that are frequently endorsed by people with a history of mania (Akiskal, Hirschfeld & Yerevanian, 1983).

In an experimental design, Gruber, Harvey & Johnson (2009) found that people with bipolar affective disorder reported higher levels of positive affect after ruminating on a positive memory than healthy controls. This suggests not only that thinking about positive events could potentially intensify emotional experiences, but also that this mechanism seems to be more

accentuated amongst people with bipolar affective disorder. This possibility is sustained by observations from the clinical practice of working with bipolar affective clients. Many people with hypomanic experiences enjoy their hypomanic states and are reluctant to take medication especially when the medication is perceived as dampening their "true self". Thinking of enjoyable images of future events has been found to be associated with hypomanic states in clinical participants with bipolar affective disorder (Gregory, Brewin, Mansell & Donaldson, 2010).

Taken together, these studies show that positive mental imagery and rumination on positive affect might be linked to hypomanic or manic states. However, the lack of a control group (e.g.. in the study by Gregory et al., 2010) and the investigation of mental imagery and rumination predominantly in relation to memories of past events limit the conclusions of these studies. Further research into the field of positive affect regulation amongst people with bipolar affective disorder seems warranted.

The aforementioned studies highlight the possibility that bipolar affective episodes might be associated with deficits in the regulation of positive moods. This aspect of regulation of positive affect might be particularly relevant for understanding the development of mania and hypomanic symptoms.

Several studies looked at how people at risk of mania respond to positive moods (Carver & Johnson 2009; Dempsey, Gooding & Jones, 2011; Feldman, Joorman & Johnson, 2008; Johnson & Jones, 2009; Johnson, McKenzie & Murrick, 2008). These studies were informed by Gross' emotion regulation theory and tried to investigate whether cognitive and behavioural processes involved in regulation of positive affect are similar to those present in the processing

of negative emotions. Given that rumination intensifies one's negative affect, it is likely that similar mechanisms might be involved in intensifying positive affect.

Feldman et al. (2008) conceptualised positive rumination as the tendency to respond to positive affective states with recurrent thoughts about positive self-qualities, positive affective experience, and one's favourable life circumstances. The aim of positive rumination might be to enhance or at least maintain the positive mood by focusing on the affective sensations (emotion-focused) and/or focusing on the positive meaning of the event and the impact of that event on self confidence (self-focused strategies). In addition to attempts to increase positive affect, it is likely that people might also shift their attention and thoughts away from positive affect, especially when they want to maintain their negative self-view and when they endorse self-depreciatory beliefs. Dampening has been conceptualised as the tendency to respond to positive moods states with mental strategies to reduce the intensity and duration of the positive mood.

Carver & Johnson (2009), Dempsey et al. (2011), Feldman et al. (2008) established an association between manic vulnerability and tendency to endorse cognitive strategies that could potentially intensify (i.e. emotion and self-focused) as well as diminish the intensity of positive mood states (i.e. dampening). They used samples of undergraduate students that were asked to complete measures of hypomanic vulnerability, positive rumination and current symptoms of depression and hypomania.

The results obtained by the aforementioned authors are at first glance intriguing. The question of interest is why people with manic vulnerability have the tendency to engage in strategies that have the potential to both enhance as well as decrease positive moods?

One possible explanation might be that people with hypomanic experiences enjoy as well as fear their hypomanic states. In the early stages of their manic prodrome, people with bipolar

affective disorder might try to "calm themselves" by decreasing their arousal. They might be tempted to use this coping strategy as a way of avoiding a full blown manic episode, as for many people with bipolar affective disorder manic episodes lead to adverse consequences on their life and functioning.

Whilst the above hypothesis seems plausible, further research failed to replicate the findings obtained by Carver & Johnson (2009); Dempsey et al. (2011) and Feldman et al. (2008). Johnson and Jones (2009) investigated the link between hypomanic vulnerability and several measures of cognitive style in a convenience sample of students and university staff. Although they used a significantly larger sample size than previous studies, the authors did not find a significant association between risk of mania and tendency to engage in positive rumination strategies. Also, the association between mania risk and endorsement of dampening strategies was of small magnitude.

The only study that looked concomitantly at how people at risk of mania respond to both positive and negative affect was the study conducted by Johnson et al. (2008). The aim of their study was to examine how people with bipolar affective disorder respond to positive and negative mood, in comparison to those with major depressive disorder or healthy controls. The results indicated that compared with healthy participants, people with a history of bipolar affective disorder and major depressive disorder endorsed heightened rumination in response to negative affect. Those with a history of bipolar affective disorder, also showed elevated positive rumination in response to positive affect. No association was found between current hypomanic symptoms and dampening of positive affect or between history of mania and dampening or self-focused scale. Unfortunately, the sample characteristics (i.e. clinical population selected from a wider student population, with no current psychopathology) make it difficult to generalize the

findings to clinical populations, where co-morbid conditions and sub-syndromal symptoms of hypomania or depression are present.

1.5.4. Summary. There have been few studies looking into positive affect regulation strategies amongst people at risk of bipolar affective disorder, and the ones that were undertaken generated inconsistent results. Only one study (Johnson et al., 2008) looked at people with a diagnosis of bipolar affective disorder, though the sample was selected from a non-clinical population (i.e. students). Methodological limitations impact on the applicability of the results to clinical groups. All studies that investigated this topic used samples of highly functional undergraduates that scored in the low range of scores for both manic and depressive symptoms. This group is likely to respond differently from people with longer and more severe illness histories. Furthermore, there was inconsistency in separating the effects of possible confounding variables such as level of current depressive or hypomanic symptoms on the relationships investigated.

In conclusion, it remains to be clarified whether the experience of positive affect leads to the use of mental strategies that reduce or increase the positive mood states in people with bipolar affective disorder. The studies to date that have explored this aspect, presented above have generated conflicting results, focusing mainly on bipolar vulnerability. There is some evidence that in response to positive affect people at risk of mania or those with bipolar affective disorder history engage both in enhancing positive rumination strategies (e.g. emotion and self-focused) and in down-regulating ones (e.g. dampening of mood).

Further research is needed on how people with a history of bipolar illness respond to positive affect and whether the experience of several illness episodes intensifies the tendency to engage in some strategies over the others (e.g. positive rumination over dampening). The

question of whether during remitted phases, people with a history of mania or hypomania show trait-like positive affect regulation strategies is of relevance for understanding one of the factors that could potentially play a role in the development and maintenance of future illness episodes. It is also important to establish whether these cognitive strategies of processing positive affect are related or contribute in any way to current symptoms of depression or hypomania/mania.

Understanding positive mood regulation mechanisms amongst people with bipolar disorder might also be relevant for the mental health practitioners concerned with the delivery of efficient treatments for people affected by this illness. If future research findings indicate that certain strategies are more frequently used than others to manage positive moods, supporting the individuals to evaluate the impact of these strategies on their functioning and teaching them to expand their repertoire of strategies might be useful for improving treatment outcome.

Considering the above evidence, one area of this research will investigate the hypothesis that remitted individuals with bipolar disorder tend to engage in positive rumination in response to positive affect to a higher degree than normal controls. It is beyond the scope of this thesis to investigate the strategies used by people with a bipolar affective disorder in response to negative affect. The studies presented in section 1.5.1. have consistently identified that risk of mania is associated with both distraction and engagement in risky activities in response to negative moods. However, the role of rumination in response to negative affect across different stages of the bipolar disorder remains unclear.

1.6. Psychological Models of Bipolar Affective Disorder

There is now an increased consensus that several psychological processes associated with bipolar disorder are thought to contribute to the onset and development of bipolar symptoms (Mansell & Pedley, 2008). In addition to considering cognitive responses to emotional

experiences amongst people at risk of bipolar affective disorder, research has recently focused on the interpretations people with bipolar affective disorder make about their symptoms. The next section of this thesis will present a review of the main psychological models, with particular focus on the integrative cognitive model of bipolar disorder developed by Mansell et al. (2007).

The conclusion of this review will indicate that in addition to strategies of regulating positive affect, a wider range of multiple, positive and negative beliefs about internal states might be relevant to understanding the onset and maintenance of bipolar symptoms. These sets of beliefs are highlighted in the integrative cognitive model of mood swings and bipolar disorder proposed by Mansell et al. (2007).

Before explaining in more detail this model, I will briefly review the main theoretical accounts that have been used to explain bipolar affective disorder symptoms.

The main challenge of the psychological theories of bipolar affective disorder has always been to develop a comprehensive account for the development of the manic/ hypomanic episodes and most importantly to describe the mechanisms that make one individual move from remission to a manic state (Bentall, 2003; Mansell & Pedley, 2008). Three main psychological approaches, slightly overlapping each other, have attempted to explain why people develop bipolar disorder and what mechanisms sustain episode dysfunction (Mansell et al., 2007).

1.6.1. Behavioural Activation System Theory. One influential theory is the behavioural activation system (BAS) theory (Depue & Iacono, 1989). The BAS theory proposes that individuals vulnerable to bipolar disorder have more sensitive and reactive regulatory systems that are triggered by goal-attainment life events, resulting in manic symptoms (Depue & Iacono, 1989; Gray, 1994). Within this theory, hypomanic and manic states are reflections of an overly active BAS whereas depressive symptoms are associated with an inactive BAS (Depue, Kraus &

Spoont, 1987). According to the BAS model, BAS-relevant events may predict the course of bipolar disorder. For example, if someone with a dysregulated BAS experiences more frequent BAS activation relevant events he is likely to develop more hypomania/mania symptoms.

Evidence for this theory has been gathered from studies that showed an increase in manic symptoms following the achievement of an important life goal amongst people with bipolar history as well as from studies that showed high scores on the BAS activation questionnaire in people with a hypomanic personality (Johnson et al., 2000; Meyer, Johnson & Carver, 1999). Some longitudinal studies found that high BAS sensitivity predicts manic episodes and illness relapse over time (Alloy & Abramson, 2010; Abramson, Urosevic, Nusslock & Jager-Hayman, 2010).

1.6.2. Circadian Rhythms Theory. A second approach that tried to make sense of the onset and maintenance of bipolar affective disorder episodes has focused on the disruption of circadian rhythms, which leads to elevated arousal and psychomotor agitation. The disruption is thought to occur following stressful life events, although positive events have also been associated with mania risk (Meyer, Johnson & Winters, 2001; Wehr, Sack,Rosenthal, Duncan & Gillin, 1983).

Several studies were concerned in particular with explaining how the experience of instability of circadian or social rhythms might translate into the symptoms characteristic of bipolar disorder. Following the development of the multilevel model (Jones, 2001), the proposal that interpretation of physiological changes associated with social or circadian rhythm disruptions is key in understanding bipolar presentation has been investigated by Jones, Mansell & Waller (2006) and later by Jones & Day (2008).

Jones et al. (2006) tested the hypothesis that individuals with bipolar disorder make self-dispositional interpretations of physiological changes that occur following social or circadian rhythm disruptions (e.g. thinking that racing thoughts are a sign of intelligence, thinking that feeling "speeded up" is a sign that more activities can be undertaken). They hypothesised that such interpretations exacerbate initial mood changes and contribute to behaviours that maintain the cycle of manic symptoms. They found that people with a self-reported diagnosis of bipolar disorder made more positive self-dispositional appraisals for hypomanic-relevant experiences than healthy subjects, as measured by the Hypomania Interpretations Questionnaire.

Jones & Day (2008) posed a different question in their study, which was concerned with how people with hypomanic personality interpret depression-related experiences. This question might explain how individuals at risk of bipolar, with subsyndromal symptoms, make the transition to a depressive episode instead of a hypomanic one. The authors found that negative self-appraisals had a strong association with current depressive symptoms and a small positive correlation with hypomanic personality. However, negative self-appraisals for depression related experiences did not contribute to variance of self-reported hypomania vulnerability scores. In this study, negative self appraisals were defined as tendency to interpret depressive symptoms as reflective of inherent negative attributes (e.g. "If I had upsetting thoughts going though my mind I would think that I am a worthless person") rather than as transitory states. No other studies replicated their results and given that the study was conducted in an analogue sample, it is unclear whether a similar pattern might be observed in clinical participants.

In summary, the research on circadian rhythms theory has highlighted the role of symptoms' interpretation in understanding hypomanic personality and bipolar disorder.

1.6.3. Cognitive Theories of Bipolar Affective Disorder. Authors such as Bentall (2003) and Scott, Stanton, Garland & Ferrier (2000) have investigated cognitive styles and cognitive processing in people with bipolar disorder, using a cognitive paradigm. This body of research applied the cognitive model of unipolar depression to bipolar presentation (Scott & Pope, 2003; Thomas & Bentall, 2002; Wright, Lam & Newsom-Davis, 2005) whilst also trying to specify the cognitions present during manic and hypomanic states. A wide range of contradictory findings has been reported, making it difficult to have a coherent view of what are the specific cognitive features of bipolar affective disorder.

In a review of the studies looking at cognitive styles in bipolar depression, Mansell, Colom & Scott (2005) found that people with bipolar affective disorder who experience a depressed episode share many characteristics with people with unipolar depression. They seem to display high levels of dysfunctional attitudes, overgeneral memory and poor problem solving, similar to unipolar depressed individuals. However, bipolar depression seems to be associated with negative self-esteem and cognitive avoidance as well as the preference to be in the company of other people (Mansell et al., 2005). The specific cognitive style present during mania is also unclear. Given that individuals that experience a manic state often describe themselves in positive terms, this might reflect the presence of a positive self-concept, a view tested by some authors (Leahy & Beck, 1988). However, this hypothesis is not entirely supported by evidence. Some studies showed that individuals with mania and hypomania recall as many negative words in a memory task as depressed individuals (Lyon, Startup & Bentall, 1999). Also, on implicit attributional style measures, manic individuals attribute more negative events than positive events to themselves (Winters & Neale, 1985). Other authors argue that "specific" dysfunctional

attitudes such as anti-dependency and goal attainment beliefs are particularly elevated amongst bipolar affective patients (Lam, Wright & Smith, 2004).

Given the polarity of bipolar affective disorder, one question of interest has been whether people with bipolar affective disorder endorse specific cognitive features that are "trait-like" and make them vulnerable to further episodes. However, this question is also far from being answered. Available studies have yielded conflicting results concerning the ability of negative cognitive styles (e.g. dysfunctional attitudes, attributional styles) to predict manic and depressive episodes over time (Francis-Raniere, Alloy & Abramsom, 2006; Johnson & Fingerhut, 2004; Reilly-Harrington, Alloy, Fresco & Whitehouse, 1999).

1.6.4. Limitation of Existing Psychological Theories of Bipolar Disorder. Several criticisms of current psychological theories of bipolar affective disorder have been put forward. A lack of convergence between the BAS scales with behavioural and brain activity measures of BAS sensitivity in bipolar disorder patients has raised the question of whether the BAS theory is testable (Hayden et al., 2008). Another limitation of the Depue et al. (1987) theory is that it does not seem to explain the close association between depression and mania (Bentall, 2003). Furthermore, a study by Meyer, Johnson and Winters, (2001) that followed a group of 59 Bipolar I individuals over an average of 20 months found that the BAS (especially Reward Responsiveness) was predictive of increases in manic symptoms over time but was not predictive of changes in depression. In contrast, the Behavioural Inhibition Scale fluctuated with levels of depression but was not predictive of later levels of depression. The results of this study together with other inconsistent findings, question the relevance of the BIS/BAS approach to bipolar disorders and the construct validity of the BAS scales (Power, 2005).

Cognitive theories of bipolar affective disorder have concentrated separately on different aspects of what might constitute a "negative" or a “positive” cognitive pattern and have attempted unsuccessfully to integrate the range of factors that might be relevant for the course of bipolar illness. The inconsistent results cannot be attributable only to methodological inconsistencies or design limitations. They might also reflect that the phenomenology of manic and depressive episodes in bipolar affective disorder can not be accounted for by the presence of "dysfunctional attitudes" or fluctuating levels of self-esteem. Also, despite the clinical implications of the circadian rhythms theory it is unclear how circadian disruptions are translated into manic or depressive symptoms and to what extent these disruptions can account for all features of bipolar symptomatology.

Given the limits of current psychological models of bipolar affective disorder, it was acknowledged that comprehensive, testable theories on how mania and depression might emerge need to be developed (Mansell, 2006; Mansell & Pedley, 2008).

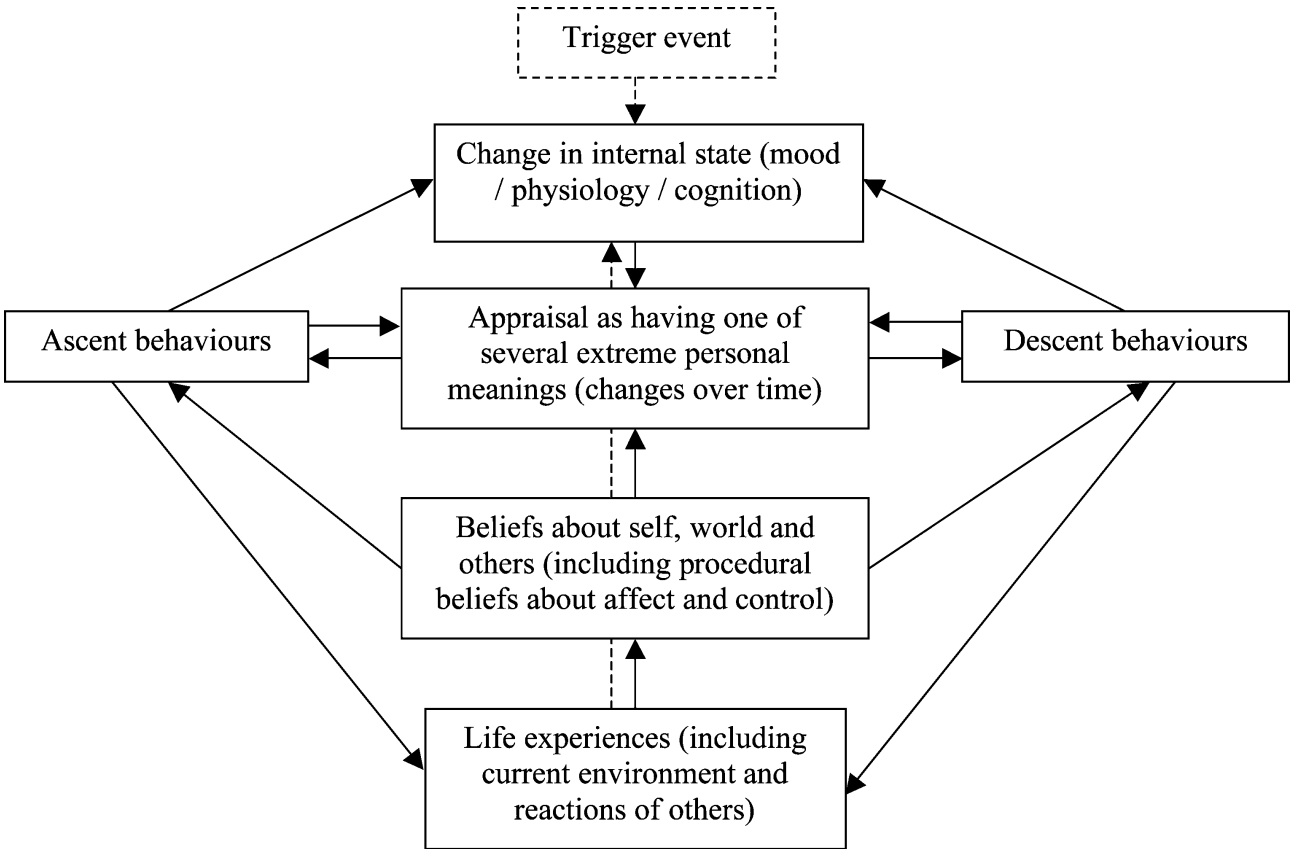
1.7. The Integrative Cognitive Model of Internal State Changes in Bipolar Affective Disorder proposed by Mansell et al., (2007).

The research studies presented in sections 1.4. and 1.5. of this thesis highlighted the potential role of affect beliefs and responses to positive and negative affect in understanding bipolar disorder episodes. In addition to this, the synopsis of the current psychological models used in explaining bipolar presentation presented in Section 1.6. identified the increased research focus on the “interpretation” of internal states in the development of bipolar symptoms. This focus might reflect the need to align research in the bipolar disorder field with the recent developments in the cognitive conceptualization of anxiety disorders and psychosis that argued

that what is problematic to the individuals is the interpretation of their symptoms, rather than the symptoms themselves.

Mansell et al. (2007) developed an integrative model of mood swings and bipolar disorder that tries to incorporate the key psychological factors and mechanisms that might be involved in the development of bipolar disorder episodes. Given that the model offers a cognitive behavioural framework of understanding the mechanisms involved in mood fluctuations, it has the potential of being applied to a wide range of disorders in which mood variations are present. The model places emphasis on the role of appraisals of internal changes in modulating the intensity of activation states via ascent or descent behaviours. A schematic representation of the model is presented in the Figure 1.

Figure 1. A cognitive model of mood swings and bipolar disorder, Mansell et al., 2007.



The model is described in more detail below, as explained in several publications, including case studies (Mansell et al., 2007; Mansell, 2007). Examples are provided as to how it might be relevant for understanding a person with experience of bipolar affective disorder:

- A trigger produces a change in either mood, level of physiological activation or cognition. The nature of the trigger can be varied but it is likely that the individual with bipolar affective disorder learns to pay attention to the quality of the internal state (e.g. bodily sensations, racing thoughts, etc). This preoccupation might be present even during minor mood fluctuations and can lead to the person engaging either in a hypomanic/manic cycle (left side of the model as presented in Figure 1) or in depressive cycle (right side of the model as presented in Figure 1). The engagement in either part of the cycle is mediated by the presence of a set of appraisals that are used to interpret the initial internal state change.
- The appraisals used to made sense of the triggers are hypothesised to be extreme, contradictory and self-relevant in nature. They are both positive and negative in relation to the implications of states of activation on the individual's functioning. For example, an individual with experience of hypomania might place great value on feelings of activation as they might lead to increased productivity but when the opposite is experienced (e.g. tiredness, fatigue) the person might exaggerate the implications of low activation states (e.g. "without the energy to do important things my life has no purpose"; Mansell et al., 2007).
- Positive (self-esteem enhancing) and negative (self-critical) appraisals are thought to impact on the selection of specific behavioural tendencies. These behaviours are called “ascent” and “descent” behaviours, and have the potential to increase and respectively decrease the initial activation levels, leading to maintenance cycles that maintain or sometimes even exacerbate the initial symptoms. For example, a person that interprets feelings of activation as evidence

of positive qualities (e.g. "I am witty, intelligent") and that attaches personal meaning to activation levels (e.g. "When I feel good I can achieve my goals) might engage in extra work and prolonged periods of extended wakefulness. These behaviours could increase the person's activation levels, potentially leading to the development of a manic episodes. Conversely, a person who attaches negative personal significance to states of low activation (e.g. “When I cannot sleep I am about to have a breakdown”) might be tempted to engage in rumination and withdrawal from social interaction in response to feeling tired, thus intensifying the initial (negative) activation state.

- In the model, the selection of on-line appraisals and the use of ascent or descent behaviours are influenced by underlying beliefs about self and others as well as by beliefs about affect regulation. These beliefs are formed as a result of early life experiences but also as a consequence of the individual's experience of illness episodes and the responses received from the persons' environment. Various beliefs might influence the onset of a "ascent" or "descent" behaviour cycle in response to high or low states of activation. For example, if someone places great emphasis on achieving personal success (i.e. goal attainment beliefs are prevalent amongst people with bipolar affective disorder), they might quickly respond to feelings of activation by engaging in ascent behaviours. At the same time, if the person associates positive affect with periods of ill-functioning and disruption, they might attempt to control or diminish their activation level.

The model proposed by Mansell et al. (2007) concentrates primarily on appraisals of hypomanic states (e.g. restlessness, agitation, elevated energy levels, feeling good). To explain the occurrence of depressive symptoms, the model stipulates that catastrophic appraisals of activated states are also present alongside positive, self-activating beliefs. Conditional beliefs of

self-acceptance are also thought to contribute to depressive symptoms (e.g."If I am not extremely famous than I am worthless as a person"). When activated, these "negative" appraisals could potentially contribute to the onset of a depressive cycle.

An initial focus of the research looking at the integrative cognitive model of mood swings has been on the development of a self-report scale that could reliably measure these appraisals during euthymic states and that could differentiate bipolar participants from healthy controls and other psychiatric groups (e.g. unipolar depression). The measure was called the Hypomanic Attitudes and Positive Predictions Inventory (HAPPI, Mansell, 2006) and several versions of it, containing different numbers of items have been developed. The scale includes overly positive as well as catastrophic appraisals of the self relating to feelings of activation, negative beliefs about others people's reactions during hypomanic states, and activating response style to feelings of activation (e.g. "If I notice something new when I am feeling good, I must make every effort to think about how it connects with everything else"). Individuals with bipolar disorder scored more highly on the overall HAPPI scale than a matched non-clinical control sample (Alatiq et al., 2009; Mansell, 2006; Mansell et al., 2010; Mansell & Jones, 2006).

Since the publication of the model, several studies have also investigated whether positive and negative appraisals of hypomanic experiences are related to current symptoms of depression and hypomania and whether these appraisals are able to predict symptoms over time (Dodd, Mansell, Bentall & Tai, 2010; Dodd, Mansell, Morrison & Tai, 2011; Mansell, 2006; Mansell et al., 2008; Mansell & Jones, 2006). A summary of these studies is presented in Appendix B. The majority of the studies found that the set of appraisals identified by the HAPPI was related to current symptoms of activation, depression and interpersonal conflict, suggesting that they might have a contribution to illness episodes (Dodd, Mansell, Sadhani, Morrison & Tai,

2010; Dodd et al., 2011; Mansell, 2006; Mansell et al., 2008). For example, current levels of depression were found to be positively associated with catastrophic beliefs but at the same time negatively associated with success activation beliefs whereas wellbeing was positively related to success activation beliefs but negatively related to catastrophic beliefs (Mansell et al., 2008). HAPPI total score was able to predict activation symptoms over three months (Dodd et al., 2010), and depression, activation and conflict symptoms over a four-day period (Dodd et al., 2011).

Using a shorter version of the HAPPI, Mansell and Jones (2006) found a positive correlation between the total HAPPI score and activation and conflict, but also between total HAPPI score and depression. No relationships between these variables were present in the non-clinical group.

Two more recent studies using the HAPPI 50 version tried to investigate whether the appraisals included in HAPPI were specific only to bipolar presentation (Alatiq et al., 2009; Mansell et al., 2010). Both Alatiq et al. (2009) and Mansell et al. (2010), used a psychiatric comparison group - people with unipolar depression, in remission. Both studies found that people with bipolar affective disorder in a remitted episode scored higher on the overall HAPPI than the non-clinical and the remitted depressed groups. Interestingly, in a more recent study, Mansell et al. (2010) found no difference on the total HAPPI between remitted individuals (that experienced an illness episode during the last two years) with a diagnosis of bipolar affective disorder and healthy controls that reported a history of hypomanic episodes. The results suggest that the appraisals included in the model might be present also in the general population in a milder form, in particular amongst people with "hypomanic" personality. Furthermore, the HAPPI scale managed to differentiate between unipolar depressed and healthy controls in the

study undertaken by Mansell et al. (2010) but not in the study by Alatiq et al. (2009). There is further need to investigate whether the contradictory beliefs about hypomanic states are part of a wider cognitive style that is present as a key vulnerability factor across the wide spectrum of mood disorders, including unipolar depression.

Despite the studies published so far, key themes of the model proposed by Mansell et al.(2007) still need to be tested. The initial versions of the HAPPI, containing 50 items, did not include self-critical beliefs and beliefs regarding personal aspirations for fame, which may be specific to bipolar disorder (Dodd et al., 2010). The HAPPI was expanded by 11 items by Dodd et al. (2010) to reflect all themes relevant to the model and to incorporate recent research findings in bipolar affective disorder but no study so far has tested the new HAPPI version (61 items) in a clinical population. In this HAPPI version, self-critical beliefs during activated states were added (Dodd et al., 2010). Self-critical beliefs about activated states might be of particular relevance given emerging evidence that high hypomanic participants made higher ratings than the low hypomanic participants on both positive (e.g. "energetic") or negative (e.g. "dominating") traits in a goal-directed interpersonal task (Taylor & Mansell, 2008). Furthermore, the original Self Activation items (Mansell, 2006) were reformulated by including desires for achieving extreme personal goals (e.g. “If I am not extremely famous then I am worthless as a person”; Dodd et al., 2010). This was considered important in order to incorporate the findings that individuals with a propensity to mania place much importance on personal aspirations for fame, political influence and wealth (Johnson & Carver, 2006). These goals have been highly endorsed by people with hypomanic personality.

The 61-item HAPPI version also incorporated items related to confusion during activated states (e.g. "The more excited I get the more confused I feel about what is real in the world").

Although bipolar individuals often cherish the experience of feeling "high" and "speeded up" they also report that the experience of states of extreme arousal can be confusing and overwhelming. It will be therefore relevant to investigate the complexity of these interpretations amongst clinical participants with a history of bipolar affective disorder.

1.8. Study rationale

Two main areas of investigation will be followed in this study.

The first area will explore whether the set of appraisals about internal state changes proposed by the model of Mansell et al. (2007), as measured by the HAPPI 61-item version, distinguishes between individuals with bipolar disorder and healthy controls. This will allow replication of previous findings and specific investigation on whether the self-critical beliefs included in the new version of the HAPPI scale are present alongside self-activating beliefs to a higher degree in a clinical population of patients with a history of bipolar affective disorder than in healthy controls. As the model proposed by Mansell et al. (2007) is presented as a model of understanding mood fluctuations as they occur both across different disorders and in the general population, the non-clinical participants responses to the HAPPI measure will be explored.

The sample will be heterogeneous in regards to age, diagnostic type (i.e. Bipolar I and Bipolar II), co-morbidity status and illness history and will therefore test the relevance of the model when applied to people with a bipolar history in a generic community sample.

The second area of this study aims to investigate the topic of mood regulation strategies amongst individuals with bipolar affective disorder, in particular whether they engage more often than normal controls in strategies that enhance (i.e. positive rumination strategies) or diminish (i.e. dampening) positive affect.

The review of research findings focusing on cognitive and behavioural strategies in response to positive and negative mood in people with bipolar or at risk of bipolar presented in section 1.4. and 1.5. identified that there is limited research on how bipolar patients regulate their moods. It was found that research in this field generally concentrated on how people with vulnerability to bipolar disorder respond to negative mood and it used mainly correlational designs and non-clinical subjects.

This question is important in understanding the role of beliefs about affect and the importance of affect regulation mechanisms in the selection of the on-line appraisals specified in the Mansell et al. (2007) model. Given the conflicting nature of the self-appraisals specified in the model, it is likely that the strategies around the regulation of positive affect have the same contradictory nature, being both conducive to, and inhibiting of, actions that might lead to the maintenance and the potential escalation of positive affect states. These positive affect responses can thus influence the specific on-line appraisals as well as the ascent and the descent behaviours. For example, tendency to decrease the intensity of positive affective states might be associated with negative, catastrophic appraisals of activated internal states, leading to an increase in depressive symptoms and a drop in activation levels. The individual could potentially enter a vicious cycle that includes descent behaviours which could led to a depressive episode. It is predicted that endorsement of the beliefs included in the HAPPI activation subscale will be associated with positive rumination strategies, whereas catastrophic and self-critical beliefs would be related to tendency to dampen positive affect. This study is the first to look concomitantly at these two aspects of cognitive processes (i.e. appraisals of hypomanic experiences and strategies of response to positive mood) in a clinical population of participants with bipolar affective disorder.

Understanding positive mood regulation mechanisms and testing the relevance of the model proposed by Mansell et al. (2007) model in a clinical population is potentially relevant for the mental health practitioners concerned with the delivery of efficient treatments for people with bipolar affective disorder. If this research study's results indicate that specific beliefs and cognitive strategies are employed in interpreting and managing positive moods and fluctuating internal states, supporting the individuals with bipolar affective disorder to evaluate the impact of these strategies and beliefs on their functioning and teaching them to expand their repertoire of coping strategies might be useful for improving treatment outcome.

1.9. Research Questions

1. Individuals with bipolar affective disorder in a remitted phase will endorse significantly higher levels of extreme and conflicting appraisals of internal state changes than a healthy control group.
2. There will be significant differences between people with bipolar affective disorder in a remitted state and healthy controls on all the subscales of the extended version of the HAPPI (e.g. Self-Activation, Catastrophic, Loss of Control, Extreme Appraisals of Agitation, Self and Others Critical and beliefs of Extreme Social Approval), with the clinical group scoring higher than the non-clinical group.
3. Individuals with bipolar affective disorder in a remitted phase will respond to positive moods by enhancing as well as diminishing the intensity of their positive affect to a higher degree than a control group.
4. There will be a positive association between catastrophic beliefs about activated states, self-and-other critical beliefs and tendency to dampen positive affect amongst participants with bipolar affective disorder.

5. Amongst people with bipolar affective disorder in a remitted phase, there will be a positive association between tendency to engage in mood-enhancing cognitive strategies and positive self-activation beliefs.

Method

2.1. Design

To investigate the primary study hypotheses, a non-equivalent comparison group design with a remitted bipolar group and a healthy control group was employed. The groups were compared on measures of appraisals of internal states, current mood symptoms and responses to positive affect. All data were collected at a single time point.

To investigate the secondary research question correlational analyses on the data collected in the clinical sample was undertaken.

To reduce the impact of potentially confounding variables, data about the participants' age, sex and educational level were collected. To allow the characterisation of the sample and indicate the population to which the results might be generalised, data on age of illness onset and number of past depressive and manic episodes were also gathered.

2.2. Participants

2.2.1. Inclusion and Exclusion Criteria. Participants were included in the clinical group if they had a primary diagnosis of bipolar affective Disorder Type I or II according to DSM-IV (APA, 1994) or ICD-10 confirmed by a consultant psychiatrist. Participants were included if they were between the ages of 18 and 65 and were able to give valid consent. Only participants reported to be in a stable, euthymic phase of their disorder, were asked to participate in the study.

Patients with co-morbid conditions such as personality disorders, substance abuse or panic disorders were included in the study if they met the criteria of being outside of a depressive

or manic episode. As these comorbid conditions are common amongst people with bipolar affective disorders excluding these participants would have influenced the recruitment strategy. It was also considered that these patients should be included so the results of this study could be generalised to a wide range of bipolar presentations.

To reduce the possibility of any differences being attributable to comprehension difficulties, participants were excluded if there was evidence of learning difficulty or a lack of English proficiency. Those with unclear diagnosis or waiting confirmation of diagnosis were excluded.

Participants in the control group were included only if they reported no past or current history of mental health difficulties.

2.2.2. Recruitment. Connections were made with the following groups and services and attempts were made to recruit clinical participants through each of them:

- Community Mental Health Teams across Suffolk Mental Health Partnership (Bury St Edmunds, Ipswich, Stowmarket and Newmarket).
- Voluntary organizations specialised in supporting people with mental health difficulties (Suffolk Mind).
- Five support groups for people affected by bipolar disorder (The Bipolar Organisation - Bury St Edmunds, Norwich, Southend, Chelmsford and Bedfordshire branches) were also contacted and asked to advertise information about the research via facilitators of self-help groups.

The control group was recruited from the following sources:

- One Community Centre and one local business, Ipswich. An information leaflet was used to advertise the research to participants, a copy of which is presented in Appendix C, as approved by the Ethics Committee.

The inclusion criteria for the control group were: age between 18 and 65 years old and no past or current history of mental health difficulties.

2.2.3. Sample size. Sample sizes for the between group comparisons on the main variables (e.g. positive mood regulatory strategies and internal states appraisals) were calculated using G* Power 3 (Faul, Erdfelder, Lang & Buchner, 2007). Given that some of the measures used (i.e. RPA) have not been previously administered to clinical subjects with bipolar affective disorders, data from analogue student samples were included in the power analysis. Using these data, a power of 80%, and an alpha level of .05:

- A sample size of 20 per group was calculated for the scores on the beliefs about internal states (HAPPI 61) based on the results obtained by Alatiq et al., (2009) who reported a mean total score on the HAPPI for the clinical group of M = 41.6 (S.D. = 18.4) and for the healthy controls of M = 26.4 (S.D. = 10.00).
- Previous research did not investigate the difference in positive rumination and dampening in clinical subjects with bipolar affective disorders. One study (Johnson, McKenzie & McMurrich, 2008) has reported differences between a group of students that met the criteria for bipolar disorder on the SCID and healthy controls on the Emotion Focus scale of the RPA. Using the means reported (M = 2.94, S.D. = 0.86 for the bipolar group and M = 2.36, S.D. = 0.58 for the healthy controls), an alpha level of 0.5, one tailed, and a desired power of 80%, a sample size of 29 participants per group was calculated (using a conservative estimate of the S.D. when calculating the effect

size). As no prior study looked at the association between positive and negative appraisals of hypomanic states and cognitive strategies, it was considered that a medium size correlation coefficient (r = 0.30) would be meaningful to be identified. Using the G*Power 3, one-tailed, medium effect size and a power of 0.80, a sample size of 64 was calculated.

2.3. Measures

2.3.1. Overview of the Measures. Participants were assessed at one point in time using three self-report measures, described below.

2.3.2. Internal State Scale. The Internal State Scale (ISS, Bauer et al., 1991) is a self-report instrument designed to assess recent (24-hour) symptoms of bipolar disorder. It contains sixteen 100 mm visual analogue items. The participant rates each item with respect to how they have been for the preceding 24 hours using anchor descriptions of “Not at all/rarely” at one extreme and “Very much so/Much of the time” at the other. The scale is divided into four subscales: Activation (e.g. "Today I feel impulsive"), Depression (e.g. "Today it seems like nothing will ever work out for me"), Perceived Conflict (e.g. "Today I feel as if the world is against me") and Wellbeing (e.g. "Today I feel like a capable person"). The ISS allows for the simultaneous assessment of current manic and depressive symptoms and has the ability to discriminate individuals with manic, mixed, depressed and euthymic episodes (Bauer, Vojta, Kinosian, Altshuler & Glick, 2000). Internal consistencies for all ISS subscales are reported to be adequate, with Cronbach’s alpha coefficients ranging from .81 to .92 (Bauer et al., 1991). The construct validity of the scale was supported by significant relationships between activation scores and physicians' ratings of mania. Scott and Pope (2003) reported correlation between activation scores and the Young Mania Rating Scale (an established interview measure of

severity of manic symptoms; Young, Biggs, Ziegler & Meyer, 1978) of r = .55, *p* = . 03. The depression subscale correlated significant with the Hamilton Depression Rating Scale (Hamilton, 1960). The correlation coefficient between these scales was r = .84, *p* < .001 (Brown, Bauer, Suppes, Khaun, & Carmody, 2000). In test-retest evaluations ISS was found to be sensitive to affective states changes (Bauer et al., 1991).

2.3.3. The Hypomanic Attitudes and Positive Predictions Inventory. The Hypomanic Attitudes and Positive Predictions Inventory (HAPPI, Mansell & Sadhnani, 2007) is a self-report questionnaire that aims to identify the multiple, conflicting, both positive and negative extreme beliefs about internal states that are thought to be associated with the development of mood swings and the broad range of symptoms of bipolar disorder (Mansell, 2006). To investigate the research questions, the 61-item version of the HAPPI was used.

The measure allows the identification of self-critical beliefs during activated states (e.g.“When I get agitated and restless, I must be hard on myself to cope”), of positive appraisals of hypomanic states, and of confusing and overwhelming feelings during activated states (e.g. “The more excited I get the more confused I feel about what is real in the world”). The measure also includes beliefs about importance of achieving extreme personal goals, beliefs that are considered to be unique to bipolar disorder.

The questionnaire is headed with the following paragraph:" Please read each of the statements below and make a rating in the right hand column to indicate how much you believe each one. Make your rating by intersecting the line between 0% (do not believe this at all) to 100% (believe this completely). For example 50% means that the statement is 50:50, equally likely to be true or false for you. Try not to think too much about each item. There are no right or wrong answers to this questionnaire and only your opinion counts". Each item is printed

alongside a line with 11 divisions and marked with 0 and 100 at the extremes. The items are easy to understand and the questionnaire can be completed in 20-25 minutes. A total mean HAPPI score is computed by adding all the 61 item responses and dividing the total by 61.

Principal component analysis of the HAPPI using Varimax rotation indicated six dominant factors: Self-Activation, Self-and-Others Critical beliefs, Catastrophic beliefs, Extreme Appraisals of Agitation, Appraisals of Extreme Social Approval, and Loss of Control (Dodd et al., 2010). The internal consistency coefficient Cronbach's alpha for all subscales is higher then .82 and overall internal consistency is high (Cronbach's alpha = .97). The construct and predictive validity of the scale was assessed in a student sample (Dodd et al., 2010). The HAPPI was related to greater hypomania, as measured by the Hypomanic Personality Scale (HYP; Eckblad & Chapman, 1986) (r = . 53 Dodd et al., 2010), depression (r = .33; Dodd et al., 2010), and reduced psychological wellbeing (measured by ISS Wellbeing) after 3 months. The HAPPI was able to independently predict ISS Activation (Dodd et al., 2010) after 3 months, when controlling for age, gender, baseline symptoms and measures of hypomanic personality, dysfunctional attitudes and behavioural activation.

2.3.4. The Responses to Positive Affect Questionnaire (RPA). The RPA is a 17-item questionnaire that investigates cognitive responses to positive affect (Feldman et al., 2008). The RPA was constructed as a counterpart to Nolen-Hoeksema's Ruminative Response Scale (Nolen-Hoeksema & Marrow, 1991).

The instructions for the items are:" People think and do many different things when they feel happy. Please read each of the following items and indicate whether you never, sometimes, often or always think or do each one when you feel happy, excited, or enthused. Please indicate what you generally do, not what you think you should do". Participants are asked to rate their

responses on a scale of 1 (Almost never) to 4 (Almost always). The retention of 17 items followed a process of exploratory principal factor analyses undertaken on a sample of 403 students (Feldman et al., 2008). The initial pool of 54 items was modeled after the Response-Style Questionnaire (Nolen-Hoeksema & Morrow, 1991) and all items were chosen to reflect cognitive processes that would potentially amplify or dampen positive affect. Two studies consistently identified a three factors structure following factor analyses: Factor I *Emotion-focus*, Factor II*: Dampening* and Factor III*: Self-focus* (Feldman et al., 2008; Raes et al., 2009). Items on both the Emotion-focused Positive Rumination Scale and the Self-focused Positive Rumination Scale capture responses that are expected to intensify positive feelings whereas items on the Dampening Scale illustrate responses expected to diminish positive feelings. The internal consistency of all three subscales was acceptable both in the validation study and in a later study (alpha reliability higher than .73; Feldman et al., 2008; Johnson et al., 2008) and the three subscales demonstrated small correlation with each other (absolute $r < .20$ for all pairs of factors, Johnson et al., 2008).

2.3.5. Demographic Information. Age, gender, educational level, number of previous illness episodes and age of illness onset were collected for clinical participants. For the control group age, gender, and educational level were collected.

2.4. Ethical Approval

Potential ethical issues arising from conducting research with this client group have been considered in light of the National Research Ethics Service and Medical Research Council guidelines. Ethical approval was obtained from the Norfolk Research Ethics Committee (Ethics reference number: 10/H0310/35), and research governance approval was obtained from the

Suffolk Mental Health Partnership NHS Trust (reference number 115/2010). Copies of these letters are presented in Appendix D.

2.4.1. Consent and coercion. Participant Information Sheets (PIS) were distributed to all participants before consent was sought. Written consent was obtained after the researcher ensured that the participants had read the PIS and understood what the research involved. The participants (clinical and non-clinical) were offered the opportunity to ask questions about the study before giving consent and during the assessment procedure. All participants were informed that they had the right to withdraw from the study at any point, without giving a reason, and that this would not affect any treatment they might receive at the time of the study or in the future. No financial incentives were offered to participants.

2.4.2. Managing Risk and Distress. It was envisaged that the completion of the questionnaires was unlikely to produce any significant distress. However, the participants were informed that should they experience any discomfort during the completion of the questionnaires they could contact the researcher. Although none of the questionnaires assessed suicide risk or risk of harm to self and others, participants were informed that if such information arose during the period when they were part of the research, the researcher had the duty to inform relevant agencies. This was planned to occur only after the participant in question would have been informed about this. None of the participants raised any concerns around risk of harm to self and others for the duration of the study. None of the participants experienced any distress during the completion of the questionnaires.

2.4.3. Confidentiality and Anonymity. Mental health professionals that were in contact with potential clinical participants informed them about the research, in order to maintain confidentiality. Participants who agreed to take part were asked to sign a consent form that was

separated from the questionnaires. No personal data were recorded on the questionnaires. Raw data, including questionnaires and consent forms were kept in a locked cupboard at UEA.

2.5. Procedure

2.5.1. Recruitment Procedure. As described earlier, clinical participants were recruited through four different routes.

The researcher presented an overview of the research to community mental health teams and offered Participant Information Sheets and Consent to be Contacted forms to clinicians for distribution to those interested. Examples of the participant information sheet, information letter, and consent to be contacted forms for both clinical and non-clinical groups are included in Appendix E. Information about the research was presented via post and e-mail to facilitators of voluntary support groups. Stamped self-addressed envelopes were provided for the participants to return the Consent to be Contacted forms.

Potential participants who returned the signed Consent to be Contacted form were contacted by telephone to arrange a venue and one hour slot to complete the assessment. Those who wanted to take part in the research but were unable to meet with the researcher were offered the possibility to have the questionnaires sent to their home address with a stamped addressed envelope. All clinical participants were asked to give consent for the researcher to confirm their diagnosis with their psychiatrist or their GP. This was considered important to ensure that participants recruited via voluntary groups had a confirmed diagnosis of bipolar affective disorder.

For the non-clinical participants, the advertisement contained contact details. After the initial contact, the recruitment strategy was similar to the recruitment of the clinical group.

2.5.2. Assessment procedure. After obtaining written consent all participants were asked to complete a demographic sheet and three self-report measures (HAPPI, ISS, RPA). Examples of the measures used are presented in Appendix F.

The criteria used for identifying patients in an euthymic state involved a score of less than 155 on the Activation Subscale and greater than 125 on the Wellbeing subscale of the Internal State Scale (Bauer, 1999; Bauer et al., 2000). This cut-off score has been chosen to minimise the number of false-negative errors, specifically the number of manic/hypomanic persons classified as depressed or euthymic. Participants in the control group had to meet the same criteria on the Internal State Scale.

Scores over or equal to155 on Activation (ISS Activation) and over or equal to125 on Wellbeing (ISS wellbeing) were considered indicative of hypomania/mania. Mixed states were indicated by scores over or equal to155 on Activation and less than 125 on Wellbeing. Depression was indicated by scores less than 155 on Activation and less than 125 on Wellbeing.

After the collection of the data, the researcher computed the ISS scores. If the scores on the Internal State Scale indicated that the clinical participants were experiencing a manic or depressive episode they were advised to contact their GP or a mental health professional. Both clinical and non clinical participants were informed that the ISS scale was not a diagnostic tool and that it only had informative value.

2.6. Plan of analysis

The data collected was planned to be analysed by undertaking between groups t-test comparisons between the remitted bipolar group and the healthy controls on the variables measured by the HAPPI and RPA, after checking the data met normality assumptions. To control for the influence of current mood symptoms, the participants' scores on the ISS were computed

before allocating participants to the groups. To explore the relationship between catastrophic, self-activating and self and other critical beliefs as measured by HAPPI and emotion and focused positive mood regulation strategies as measured by the RPA, correlations coefficients were planned to be computed.

Results

3.1. Overview

This section will include information about the recruitment process, samples' characteristics, and reliability analyses. Descriptive statistics on the raw data for the main variables will be presented alongside a summary of the results in relation to each research question. The analysis was carried out using the computerized statistics package PASW Statistics, Release Version, 18.0.0 (SPSS, Inc., 2009, Chicago). All data were examined for normality assumptions, using means and standard deviations, Q-Q plots and comparisons of the value of the skewness with the standard error of the skewness for each sample and each variable investigated. Elimination of the outliners or the use of transformations did not make a substantial difference to the data set and therefore equivalent non-parametric tests were carried out when appropriate.

3.2. Recruitment Data

The number of people in the clinical group contacted with the view of participating in the study is difficult to estimate, given that the initial contact was made by Community Mental Health clinicians and co-ordinators of self help groups. Similarly, it is difficult to estimate the number of non-clinical participants that might have read the advertisement. However, feedback from the clinicians involved showed that the majority of the clients from Community Mental Health teams that were approached to take part agreed to be contacted by the researcher. After

obtaining agreement from the members of the self-help Bipolar Organisation support groups, the researcher visited two bipolar support groups and presented the research to 10 participants. Approximately 94 people that attended or were in contact with the Bipolar Organisation self help groups were informed of the research by their group co-ordinators.

Table 1 shows details of where the study's clinical participants were recruited from.

Table 1

Number of Clinical Participants Recruited via CMHTs and Self Help Groups

Recruited through	Number of participants
Suffolk Mind	1
Community Mental Health Teams	26
The Bipolar Organisation	20

3.3. Samples' Characteristics

3.3.1. Mood Ratings of All Participants. All participants completed the ISS (Bauer et al., 1991) as a measure of their mood state at the time of completing the questionnaires. The scores on the Activation and Wellbeing Subscales of the ISS were used to classify the mood state of the participants using the algorithm proposed by Bauer et al., (2000). Data on the number of participants classified as experiencing a hypomanic, remitted/euthymic, depressive or mixed state at the time of the assessment are presented in Table 2.

Table 2

Number of Participants per Mood State in the Clinical and Non-Clinical Group

Internal State Scale Status	Clinical group (N=47)	Non-clinical group (N=39)
Euthymic state	30 (64[a])	27 (69[a])
Hypomanic/manic state	10 (21[a])	7 (13[a])
Depressive state	6 (13[a])	5 (18[a])
Mixed episode	1 (2[a])	0

[a] = percentage relative to the group total

The results indicate that 30 (64%) participants with a diagnosis of bipolar affective disorder within the clinical sample experienced a remitted state. More than a third of the clinical sample (17) was classified as having a depressive, mixed or hypomanic state at the time of the assessment. Overall, a relatively similar proportion of participants across both groups (36 per cent in the clinical group and 31 percent in the non-clinical group) were experiencing a symptomatic mood state at the time of the assessment (e.g., hypomanic/manic, depressed or mixed). Although the study aimed to recruit euthymic bipolar participants and healthy controls, there were participants in both groups who showed evidence of depressive and hypomaniac states. In the remainder of this results section, I will focus on participants in both groups who met the criteria for remission.

3.3.2. Mood Ratings of the Clinical Participants. The relevant descriptive statistics for the scores of the ISS obtained by the remitted clinical and non-clinical participants are presented in Table 3, Table 4 and Table 5. A statistical comparison on the ISS is presented on page 66.

Table 3

Scores on the Activation and Wellbeing Scales for the Participants with Bipolar Affective Disorder

Internal State Subscale Clinical (N=30)	Mean	Standard Deviation	Median	Range	Min-Max
Activation (ISSA)	42.67	43.86	25.00	130.00	0-130
Well being (ISSWB)	198.67	49.32	200.00	170.00	130-300

Table 4

Scores on the Activation and Wellbeing Scales for the Non-Clinical Participants

Internal State Subscale Non-Clinical (N=27)	Mean	Standard Deviation	Median	Range	Min-Max
Activation (ISSA)	53.33	44.38	50.00	150.00	0-150
Well being (ISSWB)	199.63	40.71	190.00	180.00	110-290

The scores on the Wellbeing scale were normally distributed across the clinical group (skewness = 0.23, standard error =0.43) and the non-clinical group (skewness =0.35, standard error = 0.45). Appendix G shows the results of tests that compares the scores of the sample on the ISS sub scales to a normally distributed set of scores. The Kolmogorov-Smirnov tests were statistically significant, indicating the ISSA scores were not normally distributed in both groups.

Table 5

Scores on the Depression and Perceived Conflict Scales for Both Groups

	ISSD Clinical (N=30)	ISSD Non-Clinical (N=26)	ISSPC Clinical (N=30)	ISSPC Non-clinical (N=27)
25th percentile	0	0	0	20.00
50th percentile	0	0	10	30.00
75th percentile	20.00	20.00	62.50	50.00
Skewness	2.77	.89	1.52	1.24
Standard error of skewness	.43	.46	.43	.45

The scores on the Depression Scale of the ISS and on the Perceived Conflict Scale were asymmetrically distributed in the clinical group. The scores on the Depression Scale of the ISS appeared normally distributed in the non-clinical group, when looking at the skewness values. However the results of the normality test, D (26) = .353, $p < .001$(see Appendix G) showed that data on the depression subscale in both groups was different from a normal distribution.

3.3.3. Demographic Characteristics of the Clinical and Non-Clinical Participants. The following table shows the demographic details of the participants in both clinical and non-clinical groups.

Table 6

Age and Gender Values for Both Clinical and Non-Clinical Groups

Euthymic participants	Age (M and S.D.)	Gender Ratio Male	Female
Clinical group (N=29)	49.86 (10.11)	10	19
Non-clinical group (N=27)	40.33 (10.51)	7	20

There was a significant difference in age between groups, with the euthymic clinical participants being significantly older than the euthymic non-clinical participants (U = 200.50, p = .002 ; two-tailed). There was no significant difference between groups in regards to gender, χ^2 (1, N= 56) = 0.48, p = .49. The number of females in the clinical group was not statistically higher than the number of male, χ^2 (1, N = 29) = 2.79, p = .09.

3.3.3.1.Educational level of bipolar affective disorder participants and healthy controls. Table 7 shows the educational level of the participants across both groups.

Table 7

Educational Level of Bipolar Affective Disorder Participants and Non-Clinical Participants

	Clinical Group Euthymic (N=29)	Non-clinical Group Euthymic (N=27)
Primary school	0	0
Some secondary school	7	0
Completed high school	0	1

Additional training	12	6
Undergraduate university	3	9
Postgraduate university	7	11

Table 7 shows that more non clinical participants obtained degrees or higher degrees (20) than non-clinical participants (10), possibly due to the recruitment strategy.

3.3.3.2. Experience of bipolar affective disorder and age of illness onset. Table 8 shows the raw self-report data obtained from individuals with bipolar disorder about the number of bipolar mood episodes experienced.

Table 8

Number of Bipolar Illness Episodes in the Clinical Euthymic Group, including percentages

Clinical participants (N= 30)	Depressive episodes	Hypomanic/manic episodes
No episodes	2	N/A
One episode	0	2
Two or three episodes	11	8
Four or five episodes	5	7
More than five episodes	11	12
Missing values	1	1

Eleven participants reported more than five episodes of depression with a small

percentage reporting no episodes of depression. More than half of the participants (65 per cent) reported at least four hypomanic/manic episodes and 55 percent reported at least four depressive episodes. This self-report data may be subject to respondent bias. Some of the participants interviewed claimed that they could not remember exactly how many episodes they had. However, those who reported more than five episodes of either hypomania/mania or depression thoughout their illness history were relatively certain in their answers. Six participants (20 percent) reported they had experienced more than five episodes of depression *as well as* more than five episodes of hypomania/mania. There were no significant gender differences in the number of past hypomanic or depressive episodes ($U = 64.00$, $p = .134$; for depressive episodes and $U = 91.00$, $p = .847$ for hypomanic/manic episodes). Table 9 shows the age of illness onset in the bipolar affective disorder group.

Table 9

Age of Illness Onset in the Euthymic Bipolar Affective Group

Age of onset	Number of participants (N=30)
Before the age of 20	10
Between the ages of 21 and 30	10
Over 31	9
Missing values	1

A similar proportion of participants with a diagnosis of bipolar affective disorder reported they had an onset of their illness in their teens and their twenties.

3.4. Reliability Analyses

3.4.1. Internal State Subscales. Reliability analyses on the Activation subscales (ISS A); Depression subscale (ISS D); Perceived Conflict subscale (ISS PC) and the Wellbeing subscale (ISS WB) of the Internal State were conducted. Analyses were conducted separately for the clinical and non-clinical group, using the individual items of each subscale as reported by Bauer et al., (1991; 2000). The results are presented in Table 10.

Table 10

Cronbach's Alpha Values for the ISS subscales, per Group

	Clinical (N=30)	Non-clinical (N=27)
ISS Activation	.68	.42
ISS Depression	.78	.26
ISS Perceived Conflict	.76	.53
ISS Wellbeing	.55	.69

The results indicate poor levels of internal consistency for the Depression, Perceived Conflict and Activation subscale of the ISS, in the non-clinical group. This might be due to the restricted range of scores, at the lower range of the scale, registered in the non-clinical group. The sample size and the small number of items included in each of the subscales might have influenced the values. The reliability values for the ISS subscales in the clinical group were adequate, with the exception of the Wellbeing Scale.

3.4.2. Hypomanic Attitudes and Positive Predictions Inventory. Reliability analyses were conducted on all subscales of the HAPPI for both groups, using the factor loadings of the

HAPPI reported by Dodd et al., (2010). The analyses were conducted for the overall Total (HAPPI T), Self-Activation (HAPPI SA), Self and Others Critical beliefs (HAPPI SO); Catastrophic beliefs (HAPPI C); Extreme Appraisals of Agitation (HAPPI EA), Loss of Control beliefs (HAPPI LC), and Extreme Social Approval beliefs (HAPPI SOC).

Table 11

Cronbach's Alpha Values for the HAPPI subscales, for Both Groups

	Clinical (N=30)	Non-clinical (N=27)
HAPPI T	.97	.95
HAPPI SA	.91	.91
HAPPI C	.86	.65
HAPPI SO	.86	.72
HAPPI EA	.74	.44
HAPPI LC	.86	.65
HAPPI SOC	.67	.59

All subscales showed good levels of internal consistency, with the exception of the Extreme Appraisals of Agitation subscale that scored under 0.50 in the non-clinical group, showing a poor level of reliability (George & Mallery, 2003). Given the small number of items included in this scale and the small sample size, it is possible that individual scores had a significant influence on the overall inter-items correlations.

3.4.3. Response to Positive Affect Scale. Table 12 shows the Cronbach's alpha reliability values for the Emotion-focused (RPA E), Self-focused (RPA S) and Dampening Subscales (RPA D) of the Response to Positive Affect Scale, for both groups.

Table 12

Cronbach's Alpha Values for the Emotion, Self-Focus and Dampening subscales of the RPA for Both Groups

	Clinical (N=30)	Non-Clinical (N=27)
Emotion-focused	.87	.56
Self-focused	.76	.67
Dampening	.65	.60

All subscales of the RPA showed acceptable levels of internal consistency with the exception of the Emotion-focused subscale, when used in the non-clinical population.

3.5. Between-Groups Comparisons on the Dependent Variables Investigated

This section presents the comparisons made between the clinical and non-clinical euthymic participants in regards to the current mood symptoms (ISS sub scales scores), level of global hypomanic attitudes and positive rumination and dampening strategies. Between group comparisons on individual Self-Activation, Catastrophic, Extreme Appraisals of Agitation, Appraisals of Extreme Social Approval, Self and Others Critical and Loss of Control beliefs are also presented.

3.5.1. Comparisons on the Internal State Subscales between the euthymic clinical and non-clinical participants. The scores on the Wellbeing scale were normally distributed

across both the clinical and the non-clinical group. Therefore a *t*- test was conducted to compare the scores between the clinical and non-clinical groups on this subscale with the view of identifying whether the groups differed in the level of psychological wellbeing. The results of these comparisons are presented in Table 13.

Table 13

The Mean, Standard Deviations, Skewness and Independent Samples t –test Values for the Between-Groups Comparisons on the Wellbeing Subscale

	Mean (S.D.)	Skewness	t	df	Sig. (2-tailed)
ISS WB Clinical (N=30)	198.67(49.32)	.23[a]	.080	55	.937
Non-Clinical (N=27)	199.63(40.71)	.35[b]			

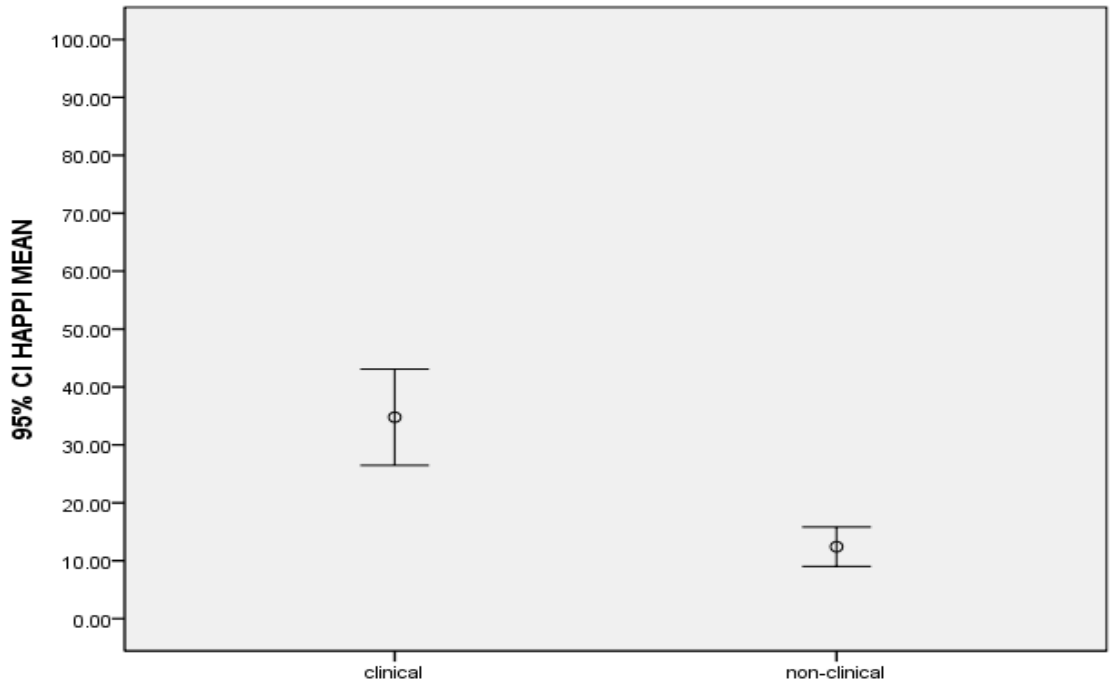
[a] standard error of skewness =0 .43; [b] standard error of skewness =0 .45

No significant difference was obtained between groups on levels of wellbeing.

The Mann-Whitney test was employed as the distribution of the scores on the ISS D and ISS PC were positively skewed in the clinical euthymic group. The scores on the ISS PC were positively skewed in the non-clinical group (skewness = 1.24, standard error = 0.45). No difference was obtained in regards to levels of depressive and perceived conflict symptoms between the clinical and the non-clinical euthymic group (U = 365.50, p =. 648 and U = 302.50, p = .096 respectively, both two-tailed). No difference between groups was obtained on the ISS A (U = 329.00, p = .221). In conclusion the two groups were equivalent on all the mood state variables identified by the Internal State Scale.

3.5.2. Research Question 1: Individuals with bipolar affective disorder in a remitted phase will endorse significantly higher levels of extreme and conflicting appraisals of internal state changes than a healthy control group. The distribution of the HAPPI scores in the non-clinical group was positively skewed (skewness = 1.52, standard error of the skewness = 0.46). Figure 2 shows the mean HAPPI scores across the groups.

Figure 2. Mean HAPPI scores across the Groups



Note. Error bars show 95% confidence intervals

Table 14 shows the quartile values for the clinical and the non-clinical group on the mean Total HAPPI score.

Table 14

Quartile Values for Both Groups on HAPPI mean Total

HAPPI Total Score	Clinical group (N=29)	Non-Clinical group (N=26)
25th percentile	19.63	6.79
50th percentile	37.54	9.92
75th percentile	41.23	16.02

The Mann-Whitney test was used to identify whether the groups were different on the Total HAPPI score. A significant difference was obtained in regards to levels of extreme appraisals of internal states between the clinical and the non-clinical euthymic group on the HAPPI Total ($U = 139.00$, $p < .001$; two-tailed). The results indicate that the people with bipolar affective disorder endorse higher levels of extreme, conflicting beliefs about their hypomanic experiences than healthy controls. Within the clinical group, the scores on each of the six sets of appraisals evaluated by the HAPPI correlated positively with each other (Appendix H).

3.5.3. Research Question 2: There will be significant differences between people with bipolar affective disorder in a remitted state and healthy controls on all the subscales of the extended version of the HAPPI (e.g., Self-Activation, Catastrophic, Loss of Control, Extreme Appraisals of Agitation, Self and Others Critical and Appraisals of Extreme Social Approval), with the clinical group scoring higher than the non-clinical group. To answer this research question, comparisons on the HAPPI subscales were carried out between the clinical and the non-clinical euthymic participants. A summary overview of the main descriptive statistics across the groups is presented in Table 15 and Table 16. Detailed descriptive statistics are presented in Appendix I.

Table 15

Means, Medians and Standard Deviation Values on HAPPI subscales in Non-Clinical Group

	HAPPI SA	HAPPISO	HAPPI C	HAPPISOC	HAPPI EA	HAPPILC
N Non-clinical	27	27	26	27	27	27
Mean	22.96	4.97	6.04	8.61	11.87	15.80
Median	16.92	3.00	4.81	5.00	10.00	15.00
Std. Deviation	15.62	5.56	7.10	10.78	11.01	12.77

Table 16

Means, Medians and Standard Deviation Values on HAPPI subscales in Clinical Group

	HAPPISA	HAPPISO	HAPPIC	HAPPISOC	HAPPIEA	HAPPILC
N Clinical	30	30	29	30	30	30
Mean	44.97	26.90	29.93	26.30	35.66	42.87
Median	51.15	28.00	26.87	25.83	32.50	32.50
Std. Deviation	24.69	21.27	23.61	21.32	25.35	29.78

Table 17 summarizes the results of the normality checks on each of the subscales, per group, with the exception of the HAPPI Catastrophic subscale.

Table 17

Values of Skewness and Standard Error on HAPPI SA, HAPPI SO, HAPPI SOC, HAPPI EA and HAPPI LC Subscales for the Clinical (N=30) and the Non-Clinical Group (N=27)

	HAPPISA	HAPPISO	HAPPISOC	HAPPIEA	HAPILC
Clinical - Skewness	-.22[a]	.40[a]	.63[a]	.80[a]	.32[a]
Non clinical - Skewness	1.39[b]	1.33[b]	1.64[b]	.85[b]	.34[b]

[a] standard error of skewness clinical =0.43; [b] standard error of skewness non-clinical = 0.45

The Skewness value for the HAPPI C was 0.80, for the clinical group, with standard error of 0.43 whereas for the non-clinical groups the skewness value was 1.68, with standard error of 0.46 (N= 29 in the clinical and N= 26 in the non-clinical group). Figure 3 shows a graphical representation of the lower quartile, median and upper quartile values for the HAPPI SA. Graphical representations for the other sub-scales are presented in Appendix J.

Figure 3 Box plot of the HAPPI SA values for clinical and non-clinical group

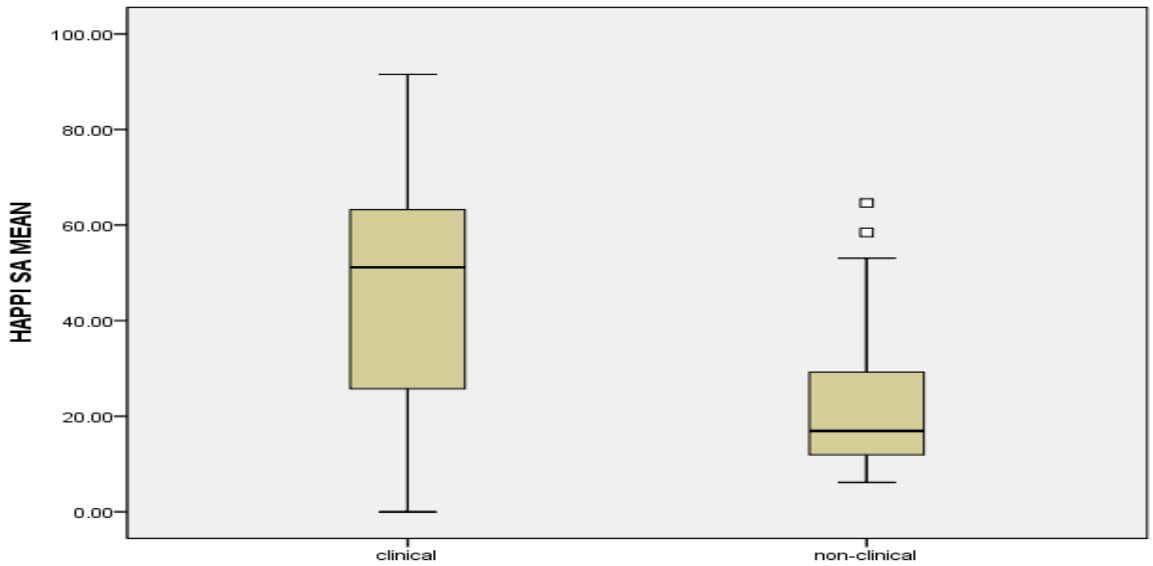


Table 18, 19 and 20 show quartile values for HAPPI SO, HAPPI C and HAPPI SOC for both groups.

Table 18

The Quartile Values for the Self and Others Critical Subscale for Both Groups

HAPPI SO	Clinical group (N=30)	Non-Clinical group (N=27)
25th percentile	10.25	1.00
50th percentile	28.00	3.00
75th percentile	41.75	8.00

Table 19

The Quartile Values for the Catastrophic Subscale for Both Groups

HAPPI C	Clinical group (N=30)	Non-Clinical group (N=27)
25th percentile	13.12	.00
50th percentile	26.87	4.81
75th percentile	38.44	9.37

Table 20

The Quartile Values for the Extreme Social Approval Subscale, for Both Groups

HAPPI SOC	Clinical group(N=30)	Non-Clinical group (N=27)
25th percentile	7.50	1.67
50th percentile	25.83	5.00
75th percentile	38.33	13.33

For the extreme Appraisals of Agitation and Loss of Control subscales, the Kolmogorov-Smirnov test was used in addition to interpreting the skewness and the standard error of the skewness values. This was considered necessary given the close values of the standard deviation and the mean (see Appendix I). The results of the Kolmogorov-Smirnov test presented in Table 21 indicate that a non-parametric t test is appropriate for comparing the scores obtained by the two groups on HAPPI EA and HAPPI LC.

Table 21

Kolmogorov-Smirnov Values for both Groups on the HAPPI EA and HAPPI LC

		Statistic	df	Sig.
HAPPI EA	Clinical	.194	30	.006
	Non-clinical	.144	27	.159
HAPPI LC	Clinical	.171	30	.025
	Non-clinical	.144	27	.161

Significant differences on both subscales were obtained $U = 150.00$, $p < .001$, $r = 0.54$, on the HAPPI EA and $U = 186.00$, $p < .001$, $r = 0.46$, on the HAPPI LC. The results indicated

that participants with bipolar affective disorder scored higher on degree of beliefs about loss of control over activated states and appraisals of agitation than healthy controls.

The results of the non-parametric Mann-Whitney tests for between groups comparisons on the Self-Activation, Self-and-Other Critical, Catastrophic and Appraisals of Extreme Social Approval scores are presented below.

Table 22

Non-parametric Tests Results Between Groups on HAPPI SA, HAPPI SO, HAPPI C and HAPPI SOC

	HAPPI SA	HAPPI SO	HAPPI C	HAPPI SOC
Mann-Whitney U	196.00	158.50	125.50	208.00
Sig (two-tailed)	.001	.001	.001	.002

Significant differences between the clinical and non-clinical group were found on the Self- Activation, Self-and-Others Critical, Catastrophic and Appraisals of Social Approval beliefs scales, with the clinical participants endorsing the unhelpful beliefs to a higher degree than healthy participants. The associated effect size for between groups comparisons on all the HAPPI subscales were all in the 0.40 region, indicating a medium effect size (Appendix K). Post-hoc analyses on the HAPPI subscales using the conservative Bonferroni adjustment continued to generate significant results (i.e. the significance levels were less than the adjusted alpha level of 0.007 per comparison).

3.5.4. Research Question 3: Individuals with bipolar affective disorder in a remitted phase will respond to positive moods by enhancing as well as diminishing the intensity of their positive affect to a higher degree than a control group. To answer this question, the data

obtained on the RPA subscales of Emotion-focused (RPAE) and Dampening (RPAD) were first checked for normality across both groups.

Table 23

Means, Standard Deviations, and Skewness Values for the Emotion, Self-focused and Dampening Measures, for Both Groups

		N	Mean	SD	Skewness
RPAE	Clinical	30	13.00	3.93	.15[a]
	Non-clinical	27	11.00	2.17	.20[b]
RPAD	Clinical	30	16.90	4.32	.20[a]
	Non-clinical	27	12.11	2.17	.11[b]
RPAS	Clinical	30	9.13	2.97	.08[a]
	Non-clinical	27	8.15	1.99	.85[b]

[a] Standard error of skewness for the non-clinical group S.E. = .45 ; [b] Standard error for the clinical group S.E. = 0.43

The test statistics for the Kolmogorov-Smirnov test, per groups are presented in Appendix L. The K-S test was significant for the RPA E and the RPA S, for both groups, indicating the data on these subscales were not normally distributed.

The clinical eythymic group scored significantly higher on the Dampening subscale of the RPA than the non-clinical group, t (44) = 5.37, $p < .001$, d = 1.48, indicating that bipolar affective disorder participants tend to diminish the intensity of their positive emotional experiences to a higher degree than healthy controls. The clinical group also scored significantly higher on the Emotion-focused positive rumination subscale, U = 281.50, p = .047, r = 0.26, indicating that bipolar affective participants also tend to pay attention more and engage in

focusing on their positive emotional experiences more often than healthy controls. There was no difference between groups on the Self-focused subscale of the RPA, U = 320.00, p = .171, r = 0.18, non-significant.

3.6. The Relationship between Positive and Negative Interpretations of Internal States and Cognitive Strategies of Response to Positive Mood

3.6.1. Research Question 4. There will be a positive association between catastrophic beliefs about activated states, self-and-other critical beliefs and tendency to dampen positive affect amongst participants with bipolar affective disorder. To investigate the relationship between the participants' tendency to endorse catastrophic and critical beliefs about activated states and tendency to down regulate positive moods, correlations between the HAPPI Catastrophic, Self-Critical subscales scores and Dampening scores were undertaken for the clinical group. The correlation values are presented in Table 24.

Table 24

Spearman Correlation Matrix Between Scores on HAPPI T, HAPPI C, HAPPI SO and RPA D among Clinical Remitted Participants

	HAPPI C	HAPPI SO	RPA D
HAPPI T	.90**	.95**	.60**
HAPPI C		.81**	.49**
HAPPI SO			.61**

** p < .001; N=30

The values represented in Table 24 indicate that amongst people with a history of bipolar affective disorder, the tendency to appraise activating or lack of positive states in a negative manner is significantly associated with the tendency to respond to positive moods with cognitive strategies that potentially diminish the intensity of the positive affect.

3.6.2. Research Question 5: Amongst people with bipolar affective disorder in a remitted phase, there will be a positive association between tendency to engage in mood-enhancing cognitive strategies and positive self-activation beliefs. The Spearman correlation coefficient was computed to explore this question.

Table 25

Spearman Correlation Matrix Between Scores on the Positive Self-Activation Beliefs, Emotion-focused, and Self-focused Measures

	RPA E	RPA S
HAPPI SA	.73**	.75**
RPA E		.66**

**p<.001, N = 30

The results show a significant association between mood-enhancing regulation cognitive strategies and self-activating beliefs amongst participants in a remitted state with bipolar affective disorder. None of these patterns of associations were found in the non-clinical group (See Appendix M).

Discussion

4.1. Overview

The aim of the study was to investigate the presence of specific appraisals of hypomanic states amongst clinical participants with bipolar affective disorder. As people with bipolar affective disorder report and often experience positive affect as part of their hypomanic episodes, the study also focused on finding out whether people with such a diagnosis engage in ruminative cognitive responses when they experience positive moods or whether they focus on reducing the intensity of their positive emotional states. In addition, the relationship between the positive and negative appraisals of hypomanic states on the one hand and the mood regulation strategies amongst clinical participants with bipolar affective disorder on the other hand was explored. After briefly reviewing the participants' characteristics, the results related to each of the study's research questions will be summarised and linked to existing literature. The study's main findings are then discussed in detail. Next, the strengths and weaknesses of the design as well as the directions for possible future research are outlined. Finally, the clinical implications of the findings are reviewed and overall conclusions drawn about the study.

4.2. Participants' Characteristics

4.2.1. Demographic Characteristics of the Clinical and Non-Clinical Groups. There were no differences in the number of males or females between the clinical and non-clinical groups. Within the clinical group, there were no differences between men and women in regards to the reported number of past depressive and hypomanic/manic episodes. These results were inconsistent with the results of other studies which indicate that women on the bipolar affective disorder spectrum are likely to have more depressive episodes than men (Leibenluft, 1996). However, in this sample, the reported number of past episodes was likely to be biased as most of

the participants acknowledged that they could not remember exactly the number of past episodes they experienced. The participants were more certain in their evaluation when they experienced more than five episodes.

The clinical group was relatively homogenous in regards to the reported number of illness relapses, with half of the participants reporting that they had at least four episodes of illness relapse. Six of the participants reported they had a more severe illness course, having had experienced more than five episodes of depression as well as more than five episodes of hypomania/mania. Previous research indicate that over 50 percent of sufferers have four or more illness episodes during their lifetime (Goodwin & Jamison, 1990).

The age of onset reported by individuals with bipolar disorder was distributed almost equally in the three age bracket groups (i.e. before the age of 20, between the ages of 21 and 30 and over 31 years of age), which is consistent with previous findings from epidemiological studies that suggest that bipolar disorder usually develops in early adulthood (Joyce, 1984; Weissman et al., 1988).

There was a significant difference between the clinical and non-clinical participants in regards to education level and age. Groups' mean ages were similar or slightly higher than in others studies that investigated extreme beliefs in bipolar affective participants (Alatiq et al., 2009; Mansell et al., 2010). It would have been desirable to control for level of education and age after transforming the data. More people in the clinical group left school at an earlier age, which potentially could be indicative of the negative impact of the early illness onset on educational achievement, or other factors not accounted for in this study (e.g. socio-economic background, level of intelligence, etc.).

More than a quarter of the clinical participants recruited were classified as hypomanic/manic, depressed or as suffering from mixed affective states according to the scores on the Internal State Scale. It is worth mentioning that both the clinicians who referred the participants to the study and the participants themselves considered that they were in a remitted, "stable" phase of their disorder. This might illustrate that some people with bipolar affective disorder consider themselves as being "remitted" even when they experience brief symptoms of hypomania or depression, possibly because they perceive these symptoms as transient and not as debilitating as an illness episode. The Internal State Scale measures presence of mood symptoms for the previous 24 hours. Brief and subsyndromal inter-episodal symptoms are a common occurrence amongst people with a history of bipolar affective disorder so the findings might reflect the fluctuating nature of bipolar symptomatology (Judd et al., 2003, Judd et al., 2002; Perugy et al., 2003).

Within the non-clinical group, five of the participants recruited were in a depressive state and seven in a hypomanic state at the moment of the assessment. Although the participants reported no history of mental health problems, the results illustrate the presence of "soft", sub-syndromal hypomanic and depressive affect states in the general population. Hypomanic experiences have been identified amongst non-treatment-seeking individuals in the absence of depressive episodes (Seal et al., 2008; Udachina & Mansell, 2007).The results cannot be compared with the results of larger epidemiological studies as the percentages obtained are not relevant due to the small sample size and the recruitment strategy was biased towards selecting euthymic healthy controls with no mental health difficulties. However, it can be mentioned that some studies that used broader definitions of the bipolar spectrum disorders found rates of around 2.8% for brief hypomanic episodes and around 5% for DSM IV mania and hypomania

episodes, in community samples (Angst, 1998; Lewinsohn, Klein, & Seeley, 1995). Also, rates of depressive mood states are known to be common in general population (Jacoby et al., 2004; Stordal et al., 2001).

The differences in age and education levels between the groups were not considered to bear any influence on the participants' appraisals of hypomanic states and their responses to these. The differences in current mood states were taken into consideration when planning between groups comparisons, which were only undertaken on the remitted groups.

4.3. Review of Research Questions

4.3.1. Research Question 1: Individuals with bipolar affective disorder in a remitted phase will endorse significantly higher levels of extreme and conflicting appraisals of internal state changes than a healthy control group.

The clinical euthymic group scored significantly higher on the HAPPI scale than the non-clinical euthymic group, indicating that people with bipolar affective disorder endorse problematic beliefs about their hypomanic experiences to a higher degree than people with no history of mental health difficulties. The beliefs are alongside several dimensions, and are contradictory and extreme in nature. Within the clinical group, each of the six sets of beliefs evaluated by HAPPI were significantly associated with each other, illustrating that people with bipolar affective disorder hold conflicting and ambivalent appraisals of hypomanic states at the same time. The distribution of the overall HAPPI scores in the non-clinical group was positively skewed, with the majority of the participants (75 percent) scoring less than a total of 16 on the HAPPI. This indicates that healthy participants appraise their activating, energetic states using less extreme attitudes than people with a history of bipolar affective disorder.

This difference on the overall HAPPI score between groups could not have been influenced by current levels of hypomanic or depressive symptoms as no differences were obtained between these groups on any of the Internal States subscales.

The results bring evidence for the clinical utility of the 61-item HAPPI version in differentiating between people with a diagnosis of bipolar affective disorder and healthy controls. The results are consistent with the results of several studies undertaken since the publication of the model in 2007. These studies identified that the 50-item HAPPI version reliably differentiated between people with bipolar affective disorder and healthy controls (Mansell, 2006; Alatiq et al., 2009; Mansell et al., 2010).

4.3.2. Research Question 2: There will be significant differences between people with bipolar affective disorder in a remitted state and healthy controls on all the subscales of the extended version of the HAPPI (e.g., Self-Activation, Catastrophic, Loss of Control, Extreme Appraisals of Agitation, Self and Others Critical and Appraisals of Extreme Social Approval), with the clinical group scoring higher than the non-clinical group. There was a statistically significant difference in the predicted direction between the euthymic bipolar group and healthy controls on the Self-Activation, Self-and-Others Critical, Catastrophic, Appraisals of Extreme Social Approval, Extreme Appraisals of Agitation, and Loss of Control beliefs with the euthymic bipolar group scoring higher than the healthy controls.

Self-Activation beliefs were endorsed by people with bipolar affective disorder to a higher degree than by non-clinical participants. Clinical participants interpreted positive affect and energized physiological states (e.g. feeling good or active) as sources of achievement, certainty about future positive outcomes, increased productivity and positive self-evaluations (i.e. “I have the best ideas when I feel extremely good about myself”; “When I feel active I

realize that I am a very important person"). States of excitement and restlessness were perceived by clinical participants as an opportunity to counteract and overcome previous fears and worries (i.e. When I feel excited my fears and worries are no longer real"), and as an essential component of an increased sense of optimism during activated states (i.e. "When I feel restless the world becomes full of unlimited opportunities for me"). In contrast with this, non-clinical participants made these appraisals on a less frequent basis and when they made them, they showed a low level of conviction about them. However, although the results were significantly different between the groups on the Self-Activating beliefs scale, the non-clinical group scores were the highest on this subscale. This suggests that healthy controls endorse to a certain degree positive interpretations of states of activation and that these interpretations are present in the general population.

The above findings are consistent with previous research. Self-Activation was identified as the most prominent factor in the 61-item HAPPI factorial analysis (Dodd et al., 2010) and most of the items included in this subscale were included in previous studies of the HAPPI and were tested as being relevant in differentiating bipolar participants from healthy controls (Alatiq et al., 2009; Mansell & Jones, 2006; Mansell et al., 2010). In the context of the integrative cognitive model (Mansell et al., 2007) self-activation beliefs are considered a primary component of a vicious cycle that links positive interpretations of internal changes with self-activating behaviours that might lead to exacerbations of the hypomanic state. Interpretations of physiological changes in energy levels or speed of thinking as indicative of personal qualities have been consistently identified in previous studies as being a feature of mania (Jones, 2001; Healy & Williams, 1989; Jones et al., 2006).

People with bipolar affective disorder also experience states of depression and low mood. The pathway from internal state changes to depressive symptoms was considered in the integrative cognitive model as being possibly mediated by Catastrophic and Self Critical appraisals of hypomanic states. As predicted, a significant difference was obtained between the clinical and non-clinical group on the extent to which they considered that they have to control their hypomanic states and in regards to how they perceived the consequences of their hypomanic states on themselves and others. Clinical subjects endorsed with a higher conviction the belief that when they feel agitated, excited or restless, they engage in self-critical comments with associated added feelings of shame and fear about a possible relapse into either a depressive or a manic episode. For many people with a history of manic episodes, the disinhibited behaviours that usually accompany manic states become shame-inducing, making people "vigilant" to further activated states. Self-and-Others Critical beliefs emerged as a novel factor in a study using non-clinical participants (Dodd et al., 2010), indirectly highlighting that this set of beliefs is relevant, in addition to self-activating beliefs, in understanding how people with bipolar affective disorder make sense of their internal state fluctuations. This study highlighted that bipolar participants are significantly different in regards to the severity of their critical beliefs about activated states than healthy controls. For the non-clinical participants, the most frequent score they attached to the items of the HAPPI Self and Others Critical subscale was "0", and those who endorsed the items used low ratings (75 percent of the non-clinical participants scored less than "8" on the HAPPI Self and Others Critical subscale). This shows that for healthy controls, agitated states are not seen as problematic, whereas clinical participants attach a catastrophic meaning to them.

The catastrophic beliefs amongst clinical participants with bipolar affective disorder have been identified by previous research alongside Loss of Control beliefs (Mansell et al., 2008; Mansell et al., 2010). In this study, scores on both of these scales (i.e. Loss of Controls and Catastrophic beliefs) were also significantly higher in the clinical euthymic group than in the non-clinical group. People with a history of bipolar affective disorder perceived their high moods as outside their control, indicating an externalising explanation for their extreme moods whereas healthy participants considered that they can control their thoughts and actions when they become "high" in mood.

There were also significant between groups differences on the Extreme Appraisals of Agitation and Extreme Social Approval subscales scores. The results indicate the presence of a specific need amongst people with bipolar disorder to be successful socially and admired by others. Previous research has identified that individuals that are vulnerable to mania report higher aspirations for fame, wealth and political influence (Johnson & Carver, 2006). In contrast with the clinical participants, healthy controls placed less value on people's reaction to themselves and did not endorse a conditional view of self-acceptance (e.g. "I need to be in the centre of attention to enjoy myself", "If I am not extremely famous then I am worthless as a person"; "When I am with other people it is most important that they admire me"). Three quarters of the non-clinical sample had an overall score on the items associated with the Extreme Social Approval Scale below 15, indicating that for the healthy controls, their self esteem does not seem to be influenced by how others respond to them.

4.3.3. Research Question 3: Individuals with bipolar affective disorder in a remitted phase will respond to positive moods by enhancing as well as diminishing the intensity of their positive affect to a higher degree than a control group.

This study provides the first examination of positive mood regulation strategies among people with bipolar affective disorder in a community sample. It was found that participants in the clinical group scored significantly higher on the Emotion-focused and the Dampening Scale of the Response to Positive Affect Questionnaire than the healthy controls.

The results indicate that people with bipolar affective disorder respond to the experience of positive moods by engaging in cognitive strategies that sustain and enhance as well as diminish positive moods. People with bipolar disorder seem to engage in dwelling on their positive affect when they experience it, noticing it and thinking about the consequences of their emotional state on their behavior (e.g. “When I feel happy, excited or enthused I think about how I feel up to doing everything”). Healthy participants seem to use these strategies less often than bipolar participants. The results are at first glance striking, as the literature on regulation of positive emotions have consistently identified that focusing on positive emotional experiences has an influence on overall well being and potentially is a protective factor against psychopathology (Eisner, Johnson & Carver, 2009; Gross, Richards & John, 2006; Tugade & Fredrikson, 2007); yet in this study bipolar remitted participants reported a more frequent use of this strategy than the non-clinical participants that reported no history of mental health difficulties. One possibility is that the difference between groups is significant because people with bipolar affective disorder overemphasize the significance of their positive emotional experiences and evaluate them as more important for their functioning, therefore attempting to increase them whenever possible. This explanation is supported by previous research which found that people with bipolar affective disorder or at risk of bipolar affective disorder show a high reactivity to positive stimuli and respond to increases in their mood with more confidence and drive to accomplish more (Johnson, 2005; Johnson, Ruggero, & Carver, 2005; Jones et al.,

2006). The results are different from the results obtained by Johnson et al., (2008). They found that a history of mania was positively associated with emotion-focused rumination but that after controlling for current hypomanic symptoms the effect for mania was no longer significant. The results are consistent with the assumptions made in the integrative cognitive model of mood swings and bipolar disorder (Mansell et al., 2007) that considers positive appraisals of hypomanic states a key factor in mood fluctuations.

No significant differences between groups on the Self-focused Scale of the RPA were obtained; $U = 320.00$ $p = .171$. These findings were contrary to predictions. The self-focused scale of the RPA is considered another aspect of an overall positive rumination style, and responses on this scale were associated in previous research with a hypomanic personality style in analogue populations, although the association was consistently of lower magnitude than the association between hypomanic personality and emotion-focused strategies (Feldman et al., 2008; Raes, Daems, Feldman, Johnson & Gucht, 2009).

The items of the scale refer to the strategy of enhancing one's mood by focusing on the implications for the self of the positive mood (e.g. "Think I am living up to my potential"; "Think I am achieving everything"). The effect size of the difference obtained by the two groups on both the emotion-focused and the self-focused subscales were of small magnitude. This raises questions on the clinical significance of the results obtained and highlights the need to question the relevance of investigating these aspects of mood regulation in future studies.

The results showed a significant between groups difference on the dampening subscale of the RPA, $t\ (43) = 5.36$, $p < .001$. A large effect size was obtained for the Dampening subscale. This indicates that in addition to using strategies that potentially could increase the intensity of their emotional experience, people with bipolar affective disorder also engage in critical self-

comments in response to positive moods (e.g. “I do not deserve this”; “This is too good to be true”) and in negative self-evaluations of the impact of their moods on others (e.g. “People will think I am bragging”). They also reported that they tend to think more often about the short-lived nature of their positive feelings, reminding themselves that positive moods “do not last”. The results seem to indicate the presence of a tendency to inhibit good moods amongst people with bipolar affective disorder. There are a variety of reasons for which people with bipolar affective disorder might want to suppress or decrease their positive mood. They might want to do so in order to promote “realistic thinking”, potentially as a result of experiencing negative consequences following hypomanic or manic episodes, or they might want to protect themselves against future disappointment by expecting the worst. Furthermore, they might think that they do not deserve to feel good, which might be linked to their low self-esteem. This view is supported by previous research that found that people with bipolar affective disorder in a remitted phase show negative self-esteem on implicit measures of attributional style (Winters & Neale, 1985; Knowles et al., 2007). Furthermore, dampening of positive mood has been suggested to be a key mechanism in the maintenance, onset and recurrence of depression (Raes et al., 2009). These findings support the notion that apparent contradictory responses to positive mood (i.e. amplifying as well as decreasing ones) is a characteristic of individuals with bipolar affective disorder.

In these remitted groups, the use of emotion-focused and dampening strategies could not have be explained by current levels of depressive or hypomanic symptoms. Both the clinical and the non-clinical group reported low values on the depression (i.e. a 75^{th} percentile score of less than 20 in both groups for the ISS D) and activation subscale of the ISS. Therefore, these mood

regulation strategies seem to have a trait-like character, possibly representing long term vulnerabilities to illness episodes.

4.3.4. Research Question 4 and Research Question 5. There will be a positive association between catastrophic beliefs about activated states, self-and-other critical beliefs and tendency to dampen positive affect amongst participants with bipolar affective disorder. The same positive association will be identified between self-activating beliefs and positive rumination strategies.

In the context of the model proposed by Mansell et al., (2007), depressive episodes in people with bipolar affective disorder might occur when individuals access and use critical interpretations of their hypomanic states over positive, self-activating interpretations. These appraisals, either positive or negative, were expected to be associated with specific strategies of mood regulation, given that positive moods are an aspect of a hypomanic state. This study found a significant positive relationship between a tendency to appraise hypomanic states in a critical, catastrophic manner and a tendency to down regulate positive affect in clinical participants with bipolar affective disorder. The correlation coefficients between HAPPI Catastrophic, HAPPI Self and Other Critical and the Dampening Subscale of the RPA were r (30) = .49, and r (30) = .61, both significant at $p < .001$. Also, a significant positive association was found between Self-Activating beliefs scores and Emotion-focused scores r (30) = .73, $p < .001$, and between Self-Activating beliefs scores and Self-focused scores r (30) = . 75, $p < .001$. The results indicate that emotion-focused strategies of mood regulation are associated with positive appraisals of hypomanic states in remitted bipolar affective disorder participants.

The results might suggest that amongst people with bipolar affective disorder, specific links between mood and cognition might become established, possibly under the form of

"positive emotions schemas", with distinct components, leading to different behaviours. One specific emotion-cognition pattern might consist of positive appraisals of hypomanic experiences that might consequently activate the use of ruminative strategies as a way of enhancing mood. The pattern might get activated following an internal shift in mood, energy levels or cognitions (e.g. fast thoughts) or it might be triggered by exposure to a significant external event (e.g. an opportunity of achieving a desired goal). At the same time, people with bipolar affective disorder might hold specific "negative schemas" about positive moods and hypomanic states that consist of negative interpretations of the consequences of hypomanic states on one's functioning, catastrophic appraisal of them and dampening emotion regulation strategies. None of the above associations were found in the non-clinical group, suggesting that these emotion schemas are of weaker strength or do not become formed in healthy controls. Small data variation in the non-clinical group could also have impacted on the results.

4.4. General Discussion

This study found that bipolar affective participants interpret their hypomanic states in a positive, self-enhancing manner but also in a catastrophic, negative one. The extreme appraisals measured by the 61-item version of the HAPPI were endorsed to a higher degree by people with a history of bipolar affective disorder in comparison to people with no history of mental health problems. The results also showed that regulation of positive moods may be problematic in this client group.

Although this study did not explicitly collect data on the presence of co-morbid conditions or the type of Bipolar disorder, the inclusion criteria were not exclusive of these groups. Consequently the results indicate that the specific strategies of response to positive moods and extreme appraisals of internal states discriminate between bipolar affective disorder

participants and healthy controls, possibly independent of bipolar status or presence of co-morbid conditions.

The positive correlations obtained in the remitted bipolar group between the Dampening subscale of the RPA and Catastrophic and Self-and-Others Critical scales of the HAPPI and between Self-Activation and Emotion and Self-focused scales might indicate construct overlap. It can be argued that the HAPPI measures appraisals of hypomanic states and the RPA measures "cognitions" related to positive moods. Positive mood is undoubtedly a component of a hypomanic state and some of the items of the HAPPI prompt the individual to think about when they feel good, similar to the RPA items. However, the HAPPI items consistently refer to "interpretations" of feelings of agitations, good mood, and high energy, which is not what the RPA evaluates. Furthermore, a study looking at cognitive correlates of mania risk in a large analogue sample found that risk for mania was related to separable factors of being overly positive in interpreting hypomanic symtoms, being overly confident in response to success, acting before thinking and tendencies to dampen positive affect (Johnson & Jones, 2009). To date, no study has investigated concomitantly the positive and negative appraisals of internal states as measured by HAPPI alongside a measure of positive affect regulation strategy in a clinical or non-clinical sample. Future studies could investigate multiple cognitive dimensions relevant to mania and bipolar depression simultaneously (e.g. response to positive and negative affect, appraisal of hypomanic and depressed internal states, perfectionist standards, goal-attainment beliefs, etc.) and assess the relevance of each construct on predicting symptoms over time.

4.5. Strengths and Weaknesses of the Study

This study established that the extended version of the Hypomanic Attitudes and Positive Predictions Inventory (Mansell & Sadhani, 2007) differentiates between people with bipolar affective disorder and non-clinical participants and that people with a diagnosis of bipolar affective disorder use both enhancing and down-regulating strategies in response to positive mood to a higher degree than controls. The design of the study was appropriate for the questions investigated and included a clinical group of remitted bipolar participants recruited from community mental health teams and voluntary organisations.

The study used the Internal State Scale to classify the subjects as remitted. The ISS is a widely used measure of bipolar symptoms that was shown to discriminate across mood states in bipolar affective disorder and control subjects (Bauer et al., 1991). The Activation subscale correlates well with other measures of mania (Bauer et al., 2000). However, the scale is subject to a degree of error. Whilst the scale was found to correctly classify 88% of the remissions and 86% of hypomanic and manic episodes, it only correctly classified 67% of the depressive episodes (Bauer et al., 1991). The reliability analysis values in the non-clinical group for all subscales apart from Well Being subscale were inadequate; this was possibly due to the small sample size and the small number of items included in each scale. Furthermore, some authors argue that ISS Activation subscale seems to capture arousal more than symptoms of mania and omits key symptoms such as pressurised speech, grandiosity and decreased need for sleep (Miller, Johnson & Eisner, 2009).

Other instruments such as the Young Mania Rating Scale, Bech-Rafaelsen Mania Rating Scale and Beck Depression Inventory could have been used to establish that participants were in a remitted phase of their disorder. Although the protocol of the study ensured that all participants

had a diagnosis of bipolar affective disorder, the diagnosis relied on the expertise of the clinicians involved in the participants' care and the accuracy of the medical records. A structured clinical diagnostic interview such as The Structured Clinical Interview for DSM IV-TR (SCID, First, Spitzer, Gibbon & William, 2002) could have been used although this would have been time consuming and could have potentially impacted negatively on the recruitment. No psychopathology screening tools were used to ensure that the non-clinical participants met the inclusion criteria (i.e. no history of mental health difficulties). The inclusion of the non-clinical participants relied exclusively on self-report and therefore might have been biased by their interpretations of the concept of "mental health difficulty". The impact of gender on appraisals of and responses to hypomanic states was not controlled for in the current study. Education level and age could have been controlled for and included as covariates after transforming the data. Post-hoc analyses would have been desirable to be carried out on all comparisons. Some studies found that women endorsed elevated scores on the emotion-focused scale (Johnson et al., 2008) and that males had higher scores on HAPPI than women (Dodd et al., 2010). The results of this study are unlikely to have been influenced by gender, as no significant differences in gender were found between the clinical and non-clinical group.

The study relied exclusively on self-report measures and the results could have been influenced by self- presentation biases and levels of psychological mindedness. The extent to which individuals can accurately self-report on their emotion regulation strategies was questioned by some authors (Robinson & Clore, 2002).

Considerable difficulties were encountered in recruiting remitted participants and consequently the study had a smaller sample size than expected. To some extent the study's sample size limits the statistical power of the tests used to analyse the data. Therefore there is

some risk that important differences between groups were not detected (e.g. self focussed rumination strategies). In addition, the small sample size limits the external validity of the findings.

4.6. Suggestions for Future Research

This study only focussed on appraisals of hypomanic states and responses to positive mood, using a comparative design. The results of the reliability analyses undertaken on the clinical group found an overall Cronbach alpha for the whole set of HAPPI items (HAPPI total) of .97. This value is identical to the value reported by Dodd et al. (2010) in their study of factorial analysis on a student sample of N=134. Although all the new items added in the extended HAPPI version have been identified as having satisfactory factor loadings, the high alpha coefficient might simply imply that some of the items are redundant. The need to refine the HAPPI instrument, remove unnecessary items and undertake a larger scale factor analysis of the scale has been acknowledged (Dodd et al., 2010; Dodd et al., 2011). A definitive version of the HAPPI could be developed by undertaking factor analyses on samples of individuals with bipolar affective disorder as well as on larger analogue samples.

There is a need to consolidate a final set of factors, pertaining to the whole set of beliefs that could potentially be relevant for the model. Since the publication of the model, several versions of the HAPPI scale have been produced, with different labels pertaining to key themes of the model (Dodd et al., 2010; Dodd et al., 2011; Mansell, et al., 2008). Studies failed to identify the same set of factors consistently (Dodd et al., 2010; Dodd et al., 2011; Mansell et al., 2008; Mansell et al., 2010) making integration and consolidation of the findings difficult. For example, the catastrophic beliefs factor has been identified in the 61 component analysis of the

HAPPI in one analogue study (Dodd et al., 2010) but not in a study using a larger sample (Dodd et al., 2011).

The research on the integrative cognitive model has highlighted that the individual's positive (activating) and negative (catastrophic) interpretations of hypomanic states seem to be specific to people with bipolar affective disorder and are involved in prediction of bipolar affective disorder symptoms over time (Dodd et al., 2010; Dodd et al, 2011). However, there is a lack of clarity in regards to which set of appraisals is potentially linked to "high" or "low" mood episodes, as the prospective studies so far have used the overall HAPPI score as a predictor of future symptoms instead of using individual HAPPI subscales.

The integrative cognitive model of mood swings in bipolar affective disorder was developed to apply to a continuum of mood swings from non-clinical fluctuations to the mood episodes characteristics of bipolar disorder (Dodd et al., 2011). However, the results obtained on some of the HAPPI subscales in the non-clinical sample raise questions about the extent to which the model has applicability outside of the bipolar research field. For example, a quarter of the non-clinical sample scored less than 10 on the Self and Others Critical and Catastrophic subscales, indicating that healthy controls often do not appraise their elevated states using the same interpretations as bipolar participants. In contrast, positive interpretations of feelings of activation (self-activation appraisals) were more present across both groups. Nevertheless, this conclusion might need to be considered with caution, given the small sample size. In larger analogue samples, associations between positive and negative appraisals of internal states with aspects of bipolar psychopathology were found, indicating that these appraisals of mood swings are along a continuum (Dodd et al., 2011). Prospective studies of the impact of positive mood strategies on symptoms over time are needed in order to evaluate whether affect regulation

strategies are involved in illness relapse. Dampening strategies might be involved in the onset and the maintenance of depressive episodes whereas emotion-focused strategies might precede or sustain a hypomanic episode. Given that RPA measures dispositional tendencies across time and different contexts, it would be important to identify which factors (e.g. goal attainment events, social stressors, dysfunctional attitudes and beliefs, etc.) impact on the selection of one strategy over the other. Studies that look simultaneously at different mood regulation strategies amongst people with bipolar affective disorder (e.g. rumination in response to positive and negative affect, avoidance, suppression) are also needed to clarify whether people with bipolar disorder show specific maladaptative patterns of emotion regulation. Future research into emotion regulation strategies in bipolar affective disorder seem to be particularly relevant given the known co-morbidity of this disorder with substance-related disorders. Substance-related disorders are known to be associated with deficits in processing emotional distress.

It would be important to identify whether the unique, specific set of appraisals about hypomanic states endorsed by people with bipolar affective disorder are underlying vulnerabilities developed as a result of developmental experiences or whether they are “formed” as a result of illness episodes. To answer these questions, longitudinal research or studies that compare individuals that experience the first illness episodes with individuals with extensive illness history on measures such as HAPPI could be carried out. The model proposed by Mansell et al., (2007) suggests that both early life events and illness experiences can impact on the formation and selection of on-line appraisals of the internal states. In clinical practice it would be important to identify whether core beliefs developed as a result of early developmental experiences or beliefs formed following illness episodes (or both) have any influence on the appraisals of internal states. Some people might find it easier to modify their activating or

catastrophic beliefs about their hypomanic states by reviewing their illness episodes and the consequences of these episodes on their social and occupational functioning. In these instances, people might relatively easily reach the conclusion that engaging in "activating" behaviours or using strategies of "keeping up" to their positive mood (e.g. positive rumination) is counterproductive in the medium and long term. Consequently they might be motivated early in the treatment to modify their behaviours or "let go" of their preoccupation with enhancing their moods, thus learning to manage to stay well. For other people with bipolar affective disorder, their hypomanic states could be more embedded in their self-worth and could be perceived as their "only" way of meeting their needs and of achieving meaningful goals. For the latter group, reviewing and challenging their hypomanic interpretations might be a longer process and potentially a more threatening one, as it might lead to a review of their core self-concept.

4.7. Clinical Implications and Conclusions

In summary, the results of this study offer support for the notion that people with bipolar affective disorder think in specific ways about their hypomanic states and use distinct mood strategies to regulate the intensity of their positive experiences.

The positive and negative appraisals identified amongst people with bipolar disorder can be usefully incorporated in collaborative formulation with clients, helping them make sense of their hypomanic and depressive episodes. The HAPPI measure can be used as an assessment and treatment outcome tool that can inform the intervention. Several case studies highlighting the application of the integrative cognitive model have been published, with good results (Mansell, 2007; Mansell et al., 2007). Larger scale trials are necessary to determine whether cognitive-behavioural therapy informed by this model is effective in this client group. The results suggest that people with bipolar disorder perceive the positive feelings and the increased activation levels

experienced during hypomanic states as conditional assumptions of self-worth and as examples of "ideal", desirable self. Therefore, for people with bipolar affective disorder any "euthymic" state could be potentially undesirable and unpleasant, being associated with a distorted perception that one is "depressed" when not feeling "high". Some research indicates that individuals with bipolar disorder often feel that mania or hypomania is more desirable to depression (Lam & Wong, 2005).

These ideas are important to be understood by clinicians working with people with bipolar affective disorder as they might impact on medication compliance, particularly when medication is perceived by clients as "dampening" their "true self". Many participants in our study volunteered the information that they disliked being in the "middle" range of moods and reported that in fact they were hardly experiencing a "middle range". If people with bipolar disorder learn to pay excessive attention to their internal mood fluctuations, due to the presence of their extreme appraisals of hypomanic states, an important component of any therapy with such a client group could be teaching the clients to differentiate between "normal" and "hypomanic" or "depressed" mood (Mansell, 2007). In the clinical group, the highest scores obtained were on the Self-Activation and Loss of Control subscale, indicating that these set of beliefs might be particularly relevant to be targeted in treatment. The belief that mood fluctuations when hypomanic are outside one's control can be an important obstacle in treatment progress and might need to be addressed.

The results obtained in this study in relation to the use of dampening and emotion-focused strategies amongst remitted bipolar participants could also inform treatment planning. Therapeutic approaches with this client group might need to incorporate in addition to cognitive behavioural techniques some form of emotion regulation training, such as emotion-regulation

therapy (Mennin & Fresco, 2009) and acceptance and mindfulness-based therapy (Hayes, Strosahl & Wilson, 1999). The large effect size obtained in relation to the dampening subscale suggests that people with bipolar affective disorder learn to "fear" positive affect and might automatically "attenuate" their positive moods through self-critical comments. This could inform relapse prevention work and treatment planning. Clinicians might need to be mindful that people with bipolar affective disorder could potentially struggle with a behavioural plan that includes scheduling and engaging in "positive, pleasant activities", because they might fear that increased activation could lead to a hypomanic/manic episode relapse. Furthermore, periods of "progress" in therapy might be easily overlooked when one focuses on reminding themselves about the "negative" consequences of states of positive affect.

In conclusion, this study suggests that people with bipolar disorder make specific, positive and negative appraisals about their hypomanic states. They interpret feelings of agitation, energy and restlessness as essential components of achieving desirable goals, increasing them whenever possible, but also trying to dampen positive moods. Future research is needed to identify the factors that "attenuate" the intensity and the frequency of these extreme, opposing interpretations and the impact of addressing them on treatment effectiveness and illness course. This study bring evidence that the integrative cognitive model of mood swings proposed by Mansell et al., (2007) provides a useful framework of understanding the maintenance of hypomanic states amongst people with experience of bipolar affective disorder.

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Appendix A

Studies that investigated affect regulation strategies in people with bipolar affective disorder or amongst people at risk of developing bipolar affective disorder.

Author	Aim of the study	Participants, design and measures	Main Results
Tzemou & Birchwood, 2007	To investigate whether dysfunctional thinking and dysregulation of traumatic memories are trait vulnerability factors in bipolar disorder.	• Between groups design; clinical participants in a manic (N = 19) or depressive state (N = 10) and non-clinical participants (N = 20). Measures: • The Impact of Event Scale • The Autobiographical Memory Test • The Means-End Problem Solving procedure • The Dysfunctional Attitudes Scale • The Personal Style Inventory • The Beck Depression Inventory • The Altman Self-Rating Mania Scale	• Intrusive memories of traumatic events were present in 45% of the bipolar group and 48% of the unipolar group; those without intrusions were more general on the autobiographical memory test in all phases of the illness.
Taylor, Morrison & Bentall, 2006 as cited by Mansell et al., 2007	To investigate differences on metacognitive beliefs and thought control strategies between manic, depressed and remitted bipolar participants.	• Unpublished study • Comparative, between groups design Measures: • Metacognitive Cognitions Questionnaire • Thoughts Control Questionnaire	• Bipolar-depressed and bipolar-manic participants showed higher levels of unhelpful thought control strategies when compared with non-patients (Mansell et al., 2007). • Bipolar depressed and, to a lesser extent bipolar manic participants showed higher levels of dysfunctional metacognitive beliefs in comparison with remitted bipolar and non-patient controls (Mansell et al., 2007).
Knowles, Tai, Christensen & Bentall (2005)	To explore how people at risk of developing bipolar affective disorder respond to negative mood by exploring the relationship between coping styles and hypomanic	• Correlational • N = 528 undergraduates Measures: • Beck Depression Inventory (BDI) • Dysfunctional Attitudes Scale • Hypomanic Personality Scale (HPQ)	• Rumination was associated with higher levels of depression; $r = 0.59$, $p < .001$. • Rumination was positively correlated with hypomania $r = 0.23$, $p < .001$. • Rumination, adaptive coping and dangerous activities predicted hypomanic and depression scores.

	personality. To investigate whether rumination will be associated with higher levels of depression. To investigate whether risk taking is associated with hypomanic traits.	• Response Style Questionnaire (RSQ) • Positive and Negative Affect Scale	• Risk taking was associated with depression and hypomanic scores.
Thomas & Bentall (2002)	To investigate the hypothesis that hypomanic individuals display a specific response styles to depression.	• Correlational • N= 166 undergraduates Measures: • BDI • HPQ • RSQ Revised	• Significant associations were found between rumination and dangerous activities ($r = 0.42$, $p < .001$) and also between distraction and problem-solving ($r = 0.44$, $p < .001$). • Rumination, distraction and dangerous activities were retained as predictors of hypomanic scores; but only rumination was associated with depression.
Thomas, Knowles, Tai & Bentall (2007)	To investigate response styles in symptomatic bipolar patients.	• Cross-sectional, between groups design • N = 14 bipolar depressed, N = 30 bipolar manic, N = 29 bipolar in remission, N = 44 controls Measures: • Bech-Rafaelson Mania Scale • RSQ Revised • Hamilton Depression Rating Scale	• Remitted patients ruminated more than controls and the manic patients. • On the active coping scale, manic subjects scored higher than controls, the remitted and the depressed. • Manic patients scored higher than remitted and the controls on risk-taking but not higher than the depressed. • Depression predicted by mania and RSQ scale. • Rumination, risk taking active coping and depression predicted mania.
Morrison, Peylon & Nothard (2003)	To develop a self report measure to assess beliefs about and frequency of anti-depressive behaviours. To investigate associations between predisposition to mania and depression and beliefs about anti-depressive behaviours.	• Correlational • N= 112 non-clinical subjects Measures: • BDI • HPS • Personal Style Inventory • Frequency of Anti-Depressive behaviour Inventory • Beliefs about Anti-depressive Behaviour Inventory	• Moderate amount of variance in depression was predicted by the six PSI scales, the three BABDI subscales and the two subscales of the FADBI. • Those with high scores on the HPS had significantly higher scores on frequency of active coping. • Active coping was positively associated with hypomanic personality and negatively with depression.
Feldman, Joorman & Johnson (2008)	To develop a self-report measure of responses to positive affect (RAP).	• Correlational • N= 182 undergraduate students Measures: • Self Esteem Scale	• Current hypomanic symptoms associated with self and emotion-focused. • Current depressive symptoms associated with dampening.

	To investigate whether positive rumination subscales will be associated with lower depressive symptom severity, more manic symptoms severity, less depressive rumination, and greater mania vulnerability.	• BDI • HPS • Altman Self-Rating Mania Scale • RSQ	• RPA predicted 8% from the variance in mania above and beyond rumination; RPA predicted 10% of the variability in symptoms above and beyond depressive rumination. • People with high levels of manic vulnerability reported they used more dampening and rumination in response to good moods than those with less vulnerability.
Carver & Johnson (2009)	To investigate whether tendencies towards depression and mania were related to measures of cognitive responses to emotion, negative and positive emotionality and incentive and threat motivations.	• Correlational • N=238 and N=394 undergraduate students • HPS • IDD-L • BIA/BAS • RPA • Affect Intensity Measure • Positive and Negative Generalization measure	• Manic vulnerability was associated significantly with dampening as well as with emotion and self focus positive rumination scales. • Each of the positive rumination scales differentiated significantly between the high-risk hypomanic and low-risk hypomanic group (using a cut-off criterion of 36 on the HPS).
Dempsey, Gooding & Jones (2011)	To investigate associations between measures of positive and negative forms of appraisals and rumination with vulnerability to hypomania. To investigate predictors of hypomanic vulnerability.	• Correlational • N= 353 university students Measures: • The Center for Epidemiological Studies Depression Scale • HPS • ISS • HIQ & IDQ • RPA • RRS	• Vulnerability to mania was positively correlated with rumination to negative affect. • Only self-focused rumination, Hypomania Appraisals Scale and Reflection subscale of the RRS contributed to the variance in HPS scores.
Johnson, McKenzie & Murrick (2008)	To investigate response to positive and negative affect amongst students with diagnosis of mood disorders. To examine whether rumination was explained by current and previous depression within BPD.	• Cross-sectional, between groups design • N= 28 bipolar, N= 35 Major depressive disorder; N= 44 no history of mood disorder; selected from a large student sample Measures: • SCID for DSM IV to identify subjects that met the criteria for	• Current hypomanic symptoms but not current depressive symptoms related to higher scores on the RPA emotion-focused and self-focused scales. • Current depressive symptoms correlated with RPA dampening as well as RRS Brooding and reflection scores. • History of mania was significantly related to the emotion-focused subscale but not self-focus or dampening. • Manic people endorsed focus on positive affect more than those with no diagnosis of mania.

	To examine whether high rumination levels could be documented among those diagnosed with bipolar affective disorder.	major depressive disorder (MDD), bipolar or no mood disorder • HPS • RPA • Inventory to Diagnose Depression-Lifetime version • The Center for Epidemiological Studies Depression Scale • Self Rating Mania Scale • Ruminative Response Scale	• In response to positive affect, people with a history of mania endorsed more use of responses that involved focusing on positive emotions compared with those with no history of mania.
Johnson & Jones, (2009)	To identify whether several aspects of cognitive style are distinct or overlapping in predicting mania risk.	• Correlational • N= 630 undergraduates Measures • HPS • RPA • HIQ • Behaviour Activation Scale	• Risk for hypomania was related to separable factors of acting before thinking, being overly positive in interpreting hypomanic symptoms, being overly confident in response to success, and tendencies to dampen positive affect.
Van der Gucht, Morris, Lancaster, Kinderman & Bentall (2009)	To examine the presence of negative cognitive styles, self-esteem stability, response to negative affect amongst bipolar participants in different mood episodes.	• Between groups design • 34 manic, 30 depressed and 43 euthymic bipolar participants Measures: • Rosenberg Self-esteem Scale • BIS/BAS • Personality Style Inventory • Autobiographical Memory Test • Pragmatic Inference Test • RSQ • The Card Arranging Reward Responsitivity Objective Test	• All three bipolar groups reported more rumination in response to negative mood then controls, for all comparisons, on the ruminative subscale of the RSQ.
Gruber, Eildelman & Harvey, 2008	To investigate the presence of three transdiagnostic processes of emotion regulation-worry, rumination, and negative automatic thoughts across participants with bipolar, insomnia and healthy controls.	• Between groups design • 21 euthymic bipolar I disorder; 19 participants with insomnia and a non-clinical control group (N = 20). Measures • Structured Clinical Interview for DSM-IV (SCID) • Insomnia Diagnostic Interview (IDI)	• Rumination and worry might be common across bipolar and insomnia. • The groups did not differ on rumination and worry when symptoms of anxiety and depression were controlled for.

		• Duke Structured Interview for Sleep Disorders (DSISD) • Beck Depression Inventory (BDI) • Beck Anxiety Inventory (BAI) • Global Rumination Scale (GRS) • Penn State Worry Questionnaire (PSWQ) • Cognitions Checklist (CCL)	
Morrison et al., 2006; cited in Mansell et al., 2007	To investigate use of distraction and coping amongst participants with bipolar affective disorder.	• Unpublished study	• People with bipolar disorder were more likely to believe that both distraction and active coping would prevent depression when compared with people with unipolar depression and non-patient participants (Mansell et al., 2007).

Appendix B

Studies that tested the cognitive model of mood swings and bipolar disorder proposed by Mansell, Morrison, Reid, Lowens & Tai (2007)

Author	Aim of the study	Participants, design and measures	Main Results
Mansell (2006)	To develop a measure of assessing specific attitudes, beliefs and appraisals that might influence the development of manic symptoms. To explore whether these appraisals can be identified when individuals are in remission . To explore whether each item of the scale has the capacity to distinguish between healthy controls and bipolar participants.	• Cross-sectional, between groups • 22 bipolar and 22 non-clinical controls Measures: • The HAPPI 50 Factors identified 1. Self-Activation. 2. Response to feelings of activation. 3. Other positive. 4. Other negative. 5. Catastrophic beliefs.	• Bipolar group has a significantly lower mood than the controls. • Independent-samples t-test revealed a significant difference (at $p < 0.001$) between the two groups in mean score for each subscale and the whole inventory. • Self-activation and response styles items were found to most clearly distinguish between the bipolar and healthy control group.
Mansell & Jones (2006)	To replicate and extend Mansell's 2006 study using a briefer version of the HAPPI with a larger sample, and controlling for factors such as current symptoms and the direction of questionnaire items. To investigate whether HAPPI will be highly correlated with HIQ. To test whether HAPPI independently predicts bipolar disorder in this sample.	• Cross-sectional, between groups • 56 bipolar and 39 healthy controls Measures • The Brief-HAPPI, 30 items • Internal State Scale • Hypomanic Interpretation Questionnaire	• There were significant differences between groups on the 30-HAPPI. • Brief-HAPPI correlated with symptoms of Activation and Conflict within the bipolar group ; $r(52) = 0.30$, $p < 0.05$ • HAPPI and the HIQ Hypomania subscales were positively correlated, $r(93) = 0.52$, $p < 0.01$. • Brief HAPPI independently contributed to predicting group membership.

Jones & Day (2008)	To investigate the contribution of positive self-appraisals in the prediction of hypomanic personality and current depressive symptoms. To explore whether positive self-appraisals will be associated with hypomanic personality. To explore the role of negative self-appraisals in response to depression related experiences.	• Correlational • N= 231 participants Measures • Interpretations of Depression Questionnaire (IDQ) • HPS • Dysfunctional Attitudes Scales • HIQ • ISS • BAS • The Center for Epidemiological Studies Depression Scale (CES-D).	IDQ-10 associated modestly but significantly with HPS but IDQ-10 did not predict HPS. • HIQ positively associated with HPS. • When controlling for subsyndromal symptoms, negative self-appraisal contributed no unique variance to HPS scores.
Jones, Mansell & Waller (2006)	To investigate whether individuals with bipolar interpret hypomania-relevant symptoms in a manner that leads to generation of positive automatic thoughts, positive self-beliefs and behaviours that exacerbate initial mood.	• Cross-sectional, between groups design • N= 56 bipolar disorder and N=39 controls. Measures • HIQ • ISS	• Significant difference between the groups on HIQ-H, when controlling for self-rated mood and symptoms. • HIQ-H and ISS-A were the only significant predictors of group membership.
Alatiq et al., 2009	To investigate whether there is a difference between remitted bipolar participants, unipolar participants and healthy controls on the HAPPI.	• Between groups design • 40 remitted bipolar participants, 20 healthy controls, 20 participants with unipolar depression Measures • HAPPI 50 • The Young Mania Rating Scale • The Hamilton Rating Scale • The Dysfunctional Attitudes Scale	• The bipolar participants scored higher on the HAPPI than the unipolar and healthy controls. • On individual subscales, bipolar participants scored higher than unipolar and healthy controls on self-catastrophic beliefs, other-negative and response style.
Dodd et al., 2010	To develop and validate an extended version of the HAPPI . To evaluate whether HAPPI was able to predict hypomanic symptoms after 3 months.	• Factor analysis • N = 134, student sample Measures: • HAPPI 61 • DAS • BIS/BAS	• 6 factors were identified and labelled as: self-activation, extreme appraisals of agitation, loss of control, self and other critical, catastrophic and appraisals of extreme social approval. • HAPPI predicted only activation at 3 months, when other psychological measures were incorporated as predictors.

		• HYP • ISS • MDQ	
Dood et al., 2011	To perform a factor analysis on the extended version of the HAPPI. To investigate associations between HAPPI factors and analogue bipolar symptoms.	• Correlational • Student sample (N=293). Measures: • HAPPI 61 • ISS	• Six factors were identified: Social Self-Criticism, Increase activation to avoid failure, Success Activation, Loos of Control, Grandiose Appraisals of Ideation, Regaining Autonomy. • All six HAPPI factors were associated positively with current symptoms of activation, conflict and depression, as measured by the ISS.
Dood et al., 2010	To investigate the capacity of the 61 HAPPI version to predict bipolar-relevant states and hypomania-relevant behaviours over a 4-day period.	• Prospective study • N= 175, student population Measures: • HAPPI 61 • HYP • BIS/BAS • ISS • Daily diary • Behaviour Checklist	• HAPPI total was a significant predictor of the activation, conflict and depression levels over a 4-day period.
Mansell et al., 2010	To investigate whether the appraisals of internal states measured by HAPPI are specific to bipolar or are present amongst people with unipolar depression. To test whether history of hypomanic episodes amongst healthy controls influences people's interpretations of their hypomanic states. To explore the role of current vulnerability to relapse by comparing people with Bipolar I who relapsed within the last two years with people who remained free from relapse for the past two years.	• Multiple control study • Two clinical groups, one relapsed group (N = 16), one recovered group (N= 14), remitted unipolar depressed (N = 22), and non-clinical controls with history of hypomanic symptoms (N = 22) and with no history of hypomanic symptoms (N = 22). Measures: • HAPPI 50 • DAS • ISS	• A significant difference across groups was found when controlling for age, level of education, ISS Activation and ISS Depression. • There were no significant differences when comparing the bipolar groups individually to the Non-Clinical Hypomanic group. • The Relapsed Bipolar group scored significantly higher on all HAPPI subscales than the Non-Clinical group, and significantly higher than the Unipolar group on three subscales: Success-Activation, Reduced Social Regulation and Loss of Control. • The Relapsed Bipolar Group scored significantly higher than the Non-Clinical Hypomanic Group on the Catastrophic subscale only.

Appendix C

Page 1 of 1 Version 1 12.05.2010

Faculty of Health
Postgraduate Research Programmes Office
University of East Anglia; NR 4 7TJ
United Kingdom
E-mail: clinpsyd @ uea.ac.uk
Tel: 44 (0) 1603 593310
Fax: 44 (0) 1603 593604

Are you between the age of 18 and 65 and in good mental health?

If so, you may be able to take part in a study undertaken by University of East Anglia that looks at how people respond to positive moods. The study involves filling some questionnaires that can tell you how you think about mood swings.

For further details, contact

Mariana Giurgiu, Trainee Clinical Psychologist at M.Giurgiu@uea.ac.uk,

(Research tel.no: 07905759668).

Address: UEA, Faculty of Health and Social Policy, Doctorate Programme in Clinical Psychology , Elisabeth Fry Building, Room 2.01; Norwich, NR4 7TJ.

Appendix D

Norfolk Research Ethics Committee
Victoria House
Capital Park
Fulbourn
Cambridge
CB21 5XB
Telephone: 01223 597733
Facsimile: 01223 597645

20 August 2010
Mrs Mariana Giurgiu
Faculty of Health,
University of East Anglia
Elisabeth Fry Building
Norwich
NR4 7TJ

Dear Mrs Giurgiu

Study Title: **Appraisals of mood swings and mood regulatory strategies in people with bipolar disorder.**
REC reference number: **10/H0310/35**

Thank you for your letter of 03 August 2010, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered in correspondence by a sub-committee of the REC at a meeting held on 19 August. A list of the sub-committee members is attached.

Confirmation of ethical opinion
On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Ethical review of research sites
The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Conditions of the favourable opinion
The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

For NHS research sites only, management permission for research ("R&D approval") should be obtained from the relevant care organisation(s) in accordance with NHS research governance

arrangements. Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

Where the only involvement of the NHS organisation is as a Participant Identification Centre (PIC), management permission for research is not required but the R&D office should be notified of the study and agree to the organisation's involvement. Guidance on procedures for PICs is available in IRAS. Further advice should be sought from the R&D office where necessary.

Sponsors are not required to notify the Committee of approvals from host organisations.

Other conditions specified by the REC

In Information Sheets for both clinical and non-clinical participants:
a) On page 2 under the heading **What are the risks of taking part?** to amend the sentence to say "This study has been approved by the Norfolk Research Ethics Committee"

b) On page 3 under the heading, **How will my confidentiality be protected?** to change the last sentence to "If any information collected during the study indicates that you or someone else might be at risk of harm then we will discuss this with you before passing the information on to the relevant agencies."

In the Information Sheet for non-clinical participants only:
c) on page 2 under the heading **Do I have to participate?** to delete the last sentence which says "This decision will not affect the standard of care you receive now or in the future" , because these participants would not be receiving clinical care.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

You should notify the REC in writing once all conditions have been met (except for site approvals from host organisations) and provide copies of any revised documentation with updated version numbers.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*	
Covering Letter	Mariana Guirgiu	18 June 2010	
REC application	53246/129382/1/86	18 June 2010	
Investigator CV Mariana Giurgiu		01 May 2010	
CV for Malcolm Adams		08 June 2010	
Demographic sheet for non clinical participants	1	12 June 2010	
Advertisement	1	12 June 2010	

Letter of invitation to participant	1	12 June 2010	
Summary/Synopsis	1	12 June 2010	
GP/Consultant Information Sheets	1	12 June 2010	
Questionnaire: HAPPI R	1.0	12 June 2010	
Questionnaire: Internal State Scale	1	12 June 2010	
Questionnaire: Response to Positive Affect	1	12 June 2010	
Demographic sheet for clinical participants	1	12 June 2010	
Evidence of insurance or indemnity	Zurich Municipal	26 May 2010	
Referees or other scientific critique report	Professor Malcolm Adams	08 June 2010	
Protocol	1	12 June 2010	
Email from M Giugiu		06 August 2010	
Response to Request for Further Information from M Giurgiu		03 August 2010	
Participant Information Sheet: - clinical participants	2	03 August 2010	
Participant Information Sheet: - non-clinical participants	2	03 August 2010	
Participant Consent Form: consent to be contacted form	1	12 June 2010	
Participant Consent Form: - clinical participants	2	03 August 2010	
Participant Consent Form: - non-clinical participants	2	03 August 2010	

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Now that you have completed the application process please visit the National Research Ethics Service website > After Review

You are invited to give your view of the service that you have received from the National Research Ethics Service and the application procedure. If you wish to make your views known please use the feedback form available on the website.

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments

- Adding new sites and investigators
- Progress and safety reports
- Notifying the end of the study

The NRES website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nres.npsa.nhs.uk.

10/H0310/35	**Please quote this number on all correspondence**

Yours sincerely
Dr Michael Sheldon
Chair
Email: Anna.Bradnam@eoe.nhs.uk

Encs: List of names and professions of members who were present at the meeting.

"After ethical review – guidance for researchers"

Cc: Ms Tracy Moulton
Research, Enterprise & Engagement Office
The Registry
University of East Anglia
Norwich
NR4 7TJ

Mrs Frances Farnworth
Ipswich Hospital NHS Trust
R&D Department
Ipswich Hospital
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Suffolk County Council

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The Ipswich Hospital
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IP4 5PD

Tel: 01473 704343
Fax: 01473 704787
Email: research.office@ipswichhospital.nhs.uk

Mrs Mariana Giurgiu
Facility of Health
University of East Anglia
Elisabeth Fry Building
NORWICH
NR4 7TJ

2 December 2010/JC/EP

Our Reference: 2010/115

Dear Mrs Mariana Giurgiu

R&D Ref: 2010/115
Short Title: Appraisals of mood swings in people with bipolar disorder
Title of Research: Appraisals of mood swings and mood regulatory strategies in people with bipolar disorder

The study has been reviewed at the Research Assessment Team meeting on 18 November 2010. The list of documents discussed were approved on REC approval letter dated 20 August 2010

I am pleased to confirm that the above project has been given Trust Approval.

Clause:
This Trust Approval Letter only applies to Ipswich Community Mental Health Teams at St Clements Hospital, Kesgrave, Newmarket Community Mental Health Team and Thetford Community Community Mental Health Team only.
It does not apply to Bury, Sudbury or Haverhill Community Mental Health Teams. A separate Trust Approval Letter will need to be issued for these sites.

The Principle and Chief Investigator is	Mrs Mariana Giurgiu
The Local Collaborator is	Professor Ian Robbins
The Research Sponsor is	University of East Anglia
Funder(s)	University of East Anglia

	Approval Date	Ref/Signed by
The Project had ethical approval on	20 August 2010	Norfolk Research Ethics Committee REC Ref: 10/H0310/35
The current approved protocol is Version 1 dated 12 June 2010	20 August 2010	Norfolk Research Ethics Committee REC Ref: 10/H0310/35
The Site Specific Information Form has been signed	2 November 2010	Signed by the Local Collaborator: Professor Ian Robbins

This approval is conditional on the following:

a) You must ensure that you and your research team have read, understood and follow the **Research Management & Governance Manual - Standard Operating Procedures** (available on the Research & Development page on the Intranet or by request from the Research Office).

b) Please note that SOP004-007 apply to approved research.

c) The research is conducted in accordance with any project-specific agreement (attached to this letter if applicable). **If the agreement identifies the Trust as a responsible party then that responsibility is delegated to yourself.** You may wish to further delegate this to someone else but this must be recorded in your Site File in the 'Delegation Log'. In the event that you do not wish to accept responsibility then you must inform the Research Office as soon as possible. If the Trust cannot identify someone who is willing and able to accept a delegated responsibility then the Trust Approval will be suspended.

d) The appropriate headed paper must be used and it is the responsibility of the Principal Investigator to ensure that this is done.

If you and/or your research team have not had Good Clinical Practice (GCP) training, please contact the Research Office who are arranging in-house training with an external trainer for research active staff.

May I take this opportunity to wish you well with this piece of research.

Yours sincerely

Lisa Llewelyn.

Mrs Lisa Llewellyn
Head of the Centre for Clinical Excellence
Suffolk Mental Health Partnership Trust

cc (by email)

Local Collaborator
Professor Ian Robbins

Secretary to Mrs Lisa Llewellyn
Pat Hayward

Suffolk County Council

Suffolk NHS
Mental Health Partnership NHS Trust

Research & Development Office
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The Ipswich Hospital
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Tel: 01473 704343
Fax: 01473 704787
Email: research.office@ipswichhospital.nhs.uk

Mrs Mariana Giurgiu
Facility of Health
University of East Anglia
Elisabeth Fry Building
NORWICH
NR4 7TJ

13 January 2011/JC/EP

Our Reference: 2010/115

Dear Mrs Mariana

R&D Ref: 2010/115
Short Title: Appraisals of mood swings in people with bipolar disorder
Title of Research: Appraisals of mood swings and mood regulatory strategies in people with bipolar disorder

Amendment: Addition of Stowmarket site

I am pleased to confirm that the above amendment has been given Trust Approval.

Clause:
This Trust Approval Letter only applies to Ipswich Community Mental Health Teams at St Clements Hospital, Kesgrave, Newmarket Community Mental Health Team, Thetford Community Mental Health Team and Stowmarket Community Mental Health team only.

It does not apply to Bury, Sudbury or Haverhill Community Mental Health Teams. A separate Trust Approval Letter will need to be issued for these sites.

The Principle and Chief Investigator is	Mrs Mariana Giurgiu
The Local Collaborator is	Professor Ian Robbins
The Research Sponsor is	University of East Anglia
Funder(s)	University of East Anglia

	Approval Date	Ref/Signed by
The Project had ethical approval on	20 August 2010	Norfolk Research Ethics Committee REC Ref: 10/H0310/35
The current approved protocol is Version 1 dated 12 June 2010	20 August 2010	Norfolk Research Ethics Committee REC Ref: 10/H0310/35
The Site Specific Information Form has been signed	2 November 2010	Signed by the Local Collaborator: Professor Ian Robbins

This approval is conditional on the following:

a) You must ensure that you and your research team have read, understood and follow the **Research Management & Governance Manual - Standard Operating Procedures** (available on the Research & Development page on the Intranet or by request from the Research Office).

b) Please note that SOP004-007 apply to approved research.

c) The research is conducted in accordance with any project-specific agreement (attached to this letter if applicable). **If the agreement identifies the Trust as a responsible party then that responsibility is delegated to yourself.** You may wish to further delegate this to someone else but this must be recorded in your Site File in the 'Delegation Log'. In the event that you do not wish to accept responsibility then you must inform the Research Office as soon as possible. If the Trust cannot identify someone who is willing and able to accept a delegated responsibility then the Trust Approval will be suspended.

d) The appropriate headed paper must be used and it is the responsibility of the Principal Investigator to ensure that this is done.

If you and/or your research team have not had Good Clinical Practice (GCP) training, please contact the Research Office who are arranging in-house training with an external trainer for research active staff.

May I take this opportunity to wish you well with this piece of research.

Yours sincerely

Lisa Llewellyn

Mrs Lisa Llewellyn
Head of the Centre for Clinical Excellence
Suffolk Mental Health Partnership Trust

cc (by email)

Local Collaborator
Professor Ian Robbins

Secretary to Mrs Lisa Llewellyn
Pat Hayward

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Mrs Mariana Giurgiu
Facility of Health
University of East Anglia
Elisabeth Fry Building
NORWICH
NR4 7TJ

11 March 2011/JC/EP

Our Reference: 2010/115

Dear Mrs Giurgiu

R&D Ref: 2010/115
Short Title: Appraisals of mood swings in people with bipolar disorder
Title of Research: Appraisals of mood swings and mood regulatory strategies in people with bipolar disorder

Amendment: Addition of Bury St Edmunds Site

I am pleased to confirm that the above amendment has been given Trust Approval.

Clause:
This Trust Approval Letter only applies to Ipswich Community Mental Health Teams at St Clements Hospital, Kesgrave, Newmarket Community Mental Health Team, Thetford Community Mental Health Team, Stowmarket Community Mental Health team and Bury St Edmunds sites only.

It does not apply to Sudbury or Haverhill Community Mental Health Teams. A separate Trust Approval Letter will need to be issued for these sites.

The Principle and Chief Investigator is	Mrs Mariana Giurgiu
The Local Collaborator is	Professor Ian Robbins
The Research Sponsor is	University of East Anglia
Funder(s)	University of East Anglia

	Approval Date	Ref/Signed by
The Project had ethical approval on	20 August 2010	Norfolk Research Ethics Committee REC Ref: 10/H0310/35
The current approved protocol is Version 1 dated 12 June 2010	20 August 2010	Norfolk Research Ethics Committee REC Ref: 10/H0310/35
The Site Specific Information Form has been signed	2 November 2010	Signed by the Local Collaborator: Professor Ian Robbins

All correspondence relating to Research must be addressed to the R&D Office (see address at top of letter)

This approval is conditional on the following:

a) You must ensure that you and your research team have read, understood and follow the **Research Management & Governance Manual - Standard Operating Procedures** (available on the Research & Development page on the Intranet or by request from the Research Office).

b) Please note that SOP004-007 apply to approved research.

c) The research is conducted in accordance with any project-specific agreement (attached to this letter if applicable). **If the agreement identifies the Trust as a responsible party then that responsibility is delegated to yourself.** You may wish to further delegate this to someone else but this must be recorded in your Site File in the 'Delegation Log'. In the event that you do not wish to accept responsibility then you must inform the Research Office as soon as possible. If the Trust cannot identify someone who is willing and able to accept a delegated responsibility then the Trust Approval will be suspended.

d) The appropriate headed paper must be used and it is the responsibility of the Principal Investigator to ensure that this is done.

If you and/or your research team have not had Good Clinical Practice (GCP) training, please contact the Research Office who are arranging in-house training with an external trainer for research active staff.

May I continue to wish you well with this piece of research.

Yours sincerely

Professor Ian Robbins
Associate Director of Psychological Services
Suffolk Mental Health Partnership Trust

cc (by email)

Local Collaborator
Professor Ian Robbins

Secretary to Mrs Lisa Llewellyn
Pat Hayward

Appendix E

Faculty of Medicine and Health Sciences
Postgraduate Research Office
University of East Anglia
Norwich NR4 7TJ
United Kingdom
Email:clinpsyd@uea.ac.uk
Tel: +44 (0) 1603 593310
Fax: +44 (0) 1603 59113

Participant Information Sheet - clinical participants

Name of researcher: Mariana Giurgiu, Trainee Clinical Psychologist, University of East Anglia
Title of research: Appraisals of mood swings and mood-regulatory strategies in people with bipolar disorder

I invite you to volunteer to participate in a research project that looks at how people with a diagnosis of bipolar disorder think about their moods and how they respond to changes in their moods. To help you understand what the research is about I am providing you with the information below. I want to be sure you understand it before you agree to participate. If after you read the information you have any questions about this project please feel free to contact me.

What is the purpose of this research?

The broad aim of this study is to investigate how people with bipolar disorder think about their moods. The majority of people with bipolar disorder experience fluctuations in their moods on a daily basis, even when they are outside of a depressive or hypomanic/manic

episode. It has been suggested that the ways in which people respond to their mood changes impact on whether they develop a hypomanic/manic or depressive episode. Investigating how people think about their moods can help to increase the clinicians and researchers' understanding of how the illness episodes develop amongst people with this condition. In addition, it is hoped that the results of this research will inform better psychological treatments for people with bipolar affective disorders.
The study is being conducted as a thesis project, as part of an educational qualification. The study is an academic requirement for the Doctoral Programme in Clinical Psychology at the University of East Anglia (UEA).

Why have I been invited?
You have been invited as you have been diagnosed in the past as having a bipolar affective disorder. I am trying to recruit people who have been diagnosed with this disorder by a medical professional (e.g. a consultant psychiatrist), aged 18-65, in a remitted phase of the disorder and who can understand English.

Do I have to participate?
It is up to you if you decide to take part. This Information Sheet will describe the study and I am happy to discuss it with you further should you wish to. If you want to take part in the research, you have to fill in the "Consent to be Contacted" form. You are free to withdraw at any time, and you do not need to give any reason for this. This would not affect the standard of care you receive now or in the future.

What will happen in this study and what will I be asked to do?
The researcher will contact you based on the details you provide in the "Consent to be Contacted" form; or you can contact the researcher directly. If you are able to meet with the researcher, a meeting will be set up in which you will be given three questionnaires and a demographic sheet for you to complete. You will also be asked to fill in a "Consent to Participate in the Research" form. To be able to complete the questionnaires, you should be able to understand written English. One of the questionnaires (i.e. Internal State Scale) will be used to establish whether you are in a remitted phase. As this research only looks at people in remitted phase, if the scores on this questionnaire indicate that you are in a depressive or manic episode all the information obtained from the completed questionnaires will be destroyed. The meeting with the researcher will be arranged on NHS premises at a convenient time for you. If you are unable to meet with the researcher you will receive the questionnaires, the demograhic sheet and the "Consent to Participate in the Research" form by post. I would then ask you to return the documents in a stamped self addressed envelope, which will be provided. All questionnaires should take approximately 45 minutes to complete.
The information from the questionnaires will then be used to find out whether people with a diagnosis of bipolar differ from people with no diagnosis of bipolar in regards to how they

think about their moods and how they respond when they feel happy and positive about themselves.

What will happen to my results?
The questionnaires will be scored and the results will be entered in a password-protected database. Your name will not appear on any of the questionnaires. You can contact the researcher by phone or e-mail if you want to find out your results. The overall results of the study will be written up as part of the doctoral thesis. The data collected during this study may be looked at by individuals from regulatory authorities, including NHS and/or UEA.
What are the risks of taking part?

We do not expect there to be any negative effects of taking part in this study for you. If however you experience distress whilst filling in the questionnaires or when receiving the results, we advise you to contact your clinician, GP, the researcher or the local mental health services. The study has been approved by the Norfolk Research Ethics Committee and the Suffolk Regional Research and Development office. The National Health Service complaints mechanisms will be available to you. If the questionnaires indicate that you may suffer from a depressive or manic episode, the researcher will contact you and suggest that you contact your G.P. if you wish to.

How will my confidentiality be protected?
All information which is collected about you during the course of the research will be kept strictly confidential. All data will be stored securely in a locked filing cabinet. It will only be accessible to the researcher and her supervisor. You will not be identified from the questionnaires. All questionnaires and the "Consent to Participate in the Research" form will be kept up to 5 years after the study has been completed in accordance with the University Regulations, for audit purposes. If any information collected during the study indicates that you or someone else might be at risk of harm then we will discuss this with you before passing the information on to the relevant agencies.

What are the possible benefits of taking part?
The benefits to taking part are that it may give you the opportunity to contribute to the growing body of research that tries to develop more efficient psychological treatments for people with bipolar disorders. In addition, if you choose to contact the researcher about your results this might give you ideas about what could be helpful for you in managing your symptoms.

What if there is a problem?
If you have concerns about any aspect of this study, you should speak with the researcher who will do her best to answer your questions or you can contact the University of East Anglia. Alternatively you can follow the complaints procedure as detailed below.

Complaints
If you wish to complain formally, you can do this through the NHS Complaints Procedure. Details can be obtained from the www.dh.gov.uk or from your GP surgery. You can also contact the University of East Anglia, Doctoral Programme in Clinical Psychology, address as stated above.

Harm
In the event that something does go wrong and you are harmed during the research study there are no special compensation arrangements. If you are harmed and this is due to someone's negligence then you may have grounds for a legal action for compensation against Suffolk Mental Health NHS Trust but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you.

Who is organizing and funding this research?
The research is being organised in partial fulfilment of the requirements for Doctoral Programme in Clinical Psychology. A £ 200 pounds allowance has been allocated to this study to cover postage and printing costs.

Who has reviewed the study?

The study has been reviewed by Professor Malcolm Adams (Co-Director of the Doctoral Programme in Clinical Psychology at University of East Anglia). The study has also been submitted for Ethical and Research & Development approval and has received approval.

What do I have to do next?
If you wish to participate please complete the "Consent to be Contacted" form. Please return the form in the stamped self addressed envelope provided, if possible within the next two weeks. Alternatively you can contact the researcher directly: contact details as indicated below. If you received this Information sheet and the "Consent to be Contacted" form from your GP or your mental health professional you can give the signed "Consent to be Contacted" form to them within the next 2 weeks of receiving this Information Sheet and the researcher will then contact you.
Should you have any further questions please feel free to contact me.
Mariana Giurgiu
Trainee Clinical Psychologist
M.Giurgiu@uea.ac.uk
Address: UEA
Faculty of Health
Doctoral Programme in Clinical Psychology
Elisabeth Fry Building; Room 2.01
Norwich; NR4 7TJ.
Tel: 01603-593310

Faculty of Health
Postgraduate Research Programmes Office
University of East Anglia
Norwich NR4 7TJ
United Kingdom
Email:clinpsyd@uea.ac.uk
Tel: +44 (0) 1603 593310

Participant Information Sheet - non-clinical participants

Name of researcher: Mariana Giurgiu, Trainee Clinical Psychologist, University of East Anglia

Title of research: Appraisals of mood swings and mood-regulatory strategies in people with bipolar disorder

I invite you to volunteer to participate in a research project that looks at how people with a diagnosis of bipolar disorder think about their moods and how they respond to changes in their moods. To help you understand what the research is about I am providing you with the information below. I want to be sure you understand it before you agree to participate. If after you read the information you have any questions about this project please feel free to contact me.

What is the purpose of this research?

The broad aim of this study is to investigate how people with bipolar think about their moods. The majority of people with bipolar disorder experience fluctuations in their moods on a daily basis, even when they are outside of a depressive or hypomanic/manic episode. It has been suggested that the ways in which people respond to their mood changes impact on whether they develop hypomanic/manic or depressive symptoms. Investigating how people think about their moods can help to increase the clinicians and researchers' understanding of how the illness episodes develop amongst people with bipolar disorder. In addition, it is hoped that the results of this research will inform better psychological treatments for people with bipolar affective disorders.

The study is being conducted as a thesis project, as part of an educational qualification. This study is an academic requirement for the Doctoral Programme in Clinical Psychology at the University of East Anglia (UEA).

Why have I been invited?
You have been invited as you are potentially a healthy participant with no history of mental health difficulties, aged 18-65 and who can understand English. I am trying to recruit people who have a good mental health.

Do I have to participate?
It is up to you if you decide to take part. This Information Sheet will describe the study and I am happy to discuss it with you. If you agree to take part, you need to sign the "Consent to be Contacted" form. You are free to withdraw at any time, and you do not need to give any reason for this.

What will happen in this study and what will I be asked to do?
The researcher will contact you based on the details you provide in the "Consent to be Contacted" form; or you can contact the researcher directly. If you are able to meet with the researcher, a meeting will be set up in which you will be given three questionnaires and a demographic sheet for you to complete. You will also be asked to fill in a "Consent to Participate in the Research" form. To be able to complete the questionnaires, you should be able to understand written English. The meeting with the researcher will be arranged on NHS premises at a convenient time for you. If you are unable to meet with the researcher you will receive the questionnaires and the "Consent to Participate in the Research" form by post. I would then ask you to return the questionnaires in a stamped self addressed envelope, which will be provided. All questionnaires should take approximately 45 minutes to complete. The information from the questionnaires will then be used to find out whether people with a diagnosis of bipolar differ from people with no diagnosis of bipolar in regards to how they think about their moods and how they respond when they feel happy and positive about themselves.

What will happen to my results?
The questionnaires will be scored and the results will be entered in a password-protected database. Your name will not appear on any of the questionnaires. You can contact the researcher by phone or e-mail if you want to find out your results. The overall results of the study will be written up as part of the doctoral thesis. The data collected during this study may be looked at by individuals from regulatory authorities, including NHS and/or UEA.

What are the risks of taking part?
We do not expect there to be any negative effects of taking part in this study for you. If however you experience distress whilst filling in the questionnaires or when receiving the results, we advise you to contact your GP or the researcher, The study has been approved by the Norfolk Research Ethics Committee and the Suffolk Regional Research and Development office. The National Health Service complaints mechanisms will be available to you.

How will my confidentiality be protected?

All information which is collected about you during the course of the research will be kept strictly confidential. All data will be stored securely in a locked filing cabinet. It will only be accessible to the researcher and her supervisor. You will not be identified from the questionnaires. All questionnaires and the "Consent to Participate in the Research" form will be kept up to 5 years after the study has been completed in accordance with the University Regulations, for audit purposes. If any information collected during the study indicates that you or someone else might be at risk of harm then we will discuss this with you before passing the information on to the relevant agencies.

What are the possible benefits of taking part?
The benefits to taking part are that it may give you the opportunity to contribute to the growing body of research that tries to develop more efficient psychological treatments for people with bipolar disorders. In addition, if you choose to contact the researcher about your results you might be able to find out about how you respond to positive moods.

What if there is a problem?
If you have concerns about any aspect of this study, you should speak with the researcher who will do her best to answer your questions or you can contact the University of East Anglia. Alternatively you can follow the complaints procedure as detailed below.

Complaints
If you wish to complain formally, you can do this through the NHS Complaints Procedure. Details can be obtained from the www.dh.gov.uk or from your GP surgery. You can also contact the University of East Anglia, Doctoral Programme in Clinical Psychology, address as stated above.

Harm
In the event that something does go wrong and you are harmed during the research study there are no special compensation arrangements. If you are harmed and this is due to someone's negligence then you may have grounds for a legal action for compensation against Suffolk Mental Health NHS Trust but you may have to pay your legal costs. The normal National Health Service complaints mechanisms will still be available to you.

Who is organizing and funding this research?
The research is being organised in partial fulfilment of the requirements for Doctoral Programme in Clinical Psychology. A £ 200 pounds allowance has been allocated to this study to cover postage and printing costs.

Who has reviewed the study?
The study has been reviewed by Professor Malcolm Adams (Co-Director of the Doctoral Programme in Clinical Psychology at University of East Anglia). The study has also been submitted for Ethical and Research & Development approval and has received approval (no 115/2010).

What do I have to do next?
If you wish to participate please complete the "Consent to be Contacted" form. Please return the form in the stamped self addressed envelope provided, if possible within the next two weeks. Alternatively you can contact the researcher directly: contact details as indicated below.
Should you have any further questions please feel free to contact me.

Mariana Giurgiu
Trainee Clinical Psychologist
M.Giurgiu@uea.ac.uk

Address: UEA
Faculty of Health
Doctoral Programme in Clinical Psychology
Elisabeth Fry Building
Room 2.01
Norwich
NR4 7TJ.
Tel:01603-593310
Research no: 07905759668

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Faculty of Health
University of East Anglia
Norwich NR4 7TJ
United Kingdom
Email:clinpsyd@uea.ac.uk
Tel: +44 (0) 1603 593310

"Consent to Participate in the Research" form non-clinical Participants

Title of research: Appraisals of mood swings and mood-regulatory strategies in people with bipolar disorder

Name of researcher: Mariana Giurgiu, Trainee Clinical Psychologist, UEA

Please place an initial in the box of the statements you agree to.

1. I confirm that I have read and understood the Information Sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my care or legal rights being affected. ☐

3. I understand that any information I provide will be kept anonymous. ☐

4. I agree to participate in the study by filling in three questionnaires and a demographic sheet all at the same time. These questionnaires are called the HAPPI, ISS and the RPA. I have seen the questionnaires. ☐

5. I understand that the data collected during this study may be looked at by individuals from regulatory authorities (UEA), including NHS. I give permission to these individuals to have access to my results ☐

6. I have no history of mental health difficulties ☐

_____	_____	_____
Name in print	Date	Signature

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Suffolk Mental Health NHS Partnership NHS Trust

University of East Anglia

Faculty of Health
University of East Anglia
Norwich NR4 7TJ
United Kingdom
Email:clinpsyd@uea.ac.uk
Tel: +44 (0) 1603 593310

"Consent to Participate in the Research" form Clinical Participants

Title of research: Appraisals of mood swings and mood-regulatory strategies in people with bipolar disorder

Name of researcher: Mariana Giurgiu, Trainee Clinical Psychologist, UEA

Please place an initial in the box of the statements you agree to.

1. I confirm that I have read and understood the Information Sheet for the above study. I have had the opportunity to consider the information ask questions and have had these answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my care or legal rights being affected. ☐
3. I understand that any information I provide will be kept anonymous. ☐
4. I agree to participate in the study by filling in three questionnaires and a demographic sheet all at the same time. These questionnaires are called the HAPPI, the ISS and the RPA. I have seen the questionnaires. ☐
5. I understand that the data collected during this study may be looked at by individuals from regulatory authorities (UEA), including NHS. I give permission to these individuals to have access to my results ☐
6. I agree to the researcher to contact my GP/psychiatrist and I give permission to my GP/psychiatrist to confirm my bipolar disorder diagnosis to the researcher. ☐

My GP/psychiatrist name ……Tel No: ……

_____ _____ _____

Name in print Date Signature

Suffolk Mental Health NHS Partnership NHS Trust

University of East Anglia

Letter to psychiatrists/GP's

Dear Sir/Madame,

My name is Mariana Giurgiu and I am a Trainee Clinical Psychologist on the University of East Anglia Doctoral course in Clinical Psychology. In partial fulfilment of the requirements of this training I am undertaking a research project entitled:

"Appraisals of mood swings and mood-regulatory strategies in people with bipolar disorder".

I have received approval for this project from the Local Research Ethics Committee (Ref. No.10/H0310/35).

I am writing to ask you if you would consider approaching some of your patients, who suffer from bipolar affective disorder, to ask if they would be interested in volunteering to participate in this study.

The broad aim of this study is to investigate how people with bipolar disorder think about their moods. The majority of people with bipolar disorder experience fluctuations in their moods on a daily basis, even when they are outside a depressive or hypomanic/manic episode. It has been suggested that the ways in which people respond to their mood changes has an impact on whether they develop hypomanic/manic or depressive symptoms and on how the symptoms are maintained. Investigating these aspects might contribute to the development of better psychological treatments for this client group.

The project involves asking the participants to fill in three questionnaires and a demographic sheet about their thoughts and responses to affective states. The questionnaires should take a maximum of 45 minutes to complete.

The criteria for entry into this study are:

"*That participants should be between the ages of 18 and 65 years and have a diagnosis of bipolar affective disorder which meets DSM-IV criteria. The participants should be able to read and understand spoken English. In addition, each participant's consultant psychiatrist must consider that she or he is able to give informed consent and appears to be in remission*"

I enclose several copies of the Information Sheet for Patients, Consent to be Contacted form for your information and for distribution to any potential subjects. If there are any points you would like clarified or issues to discuss please contact me. I can be contacted at the below address.

Address: UEA, Faculty of Health,
Doctoral Programme in Clinical Psychology
Elisabeth Fry Building
Room 2.01
Norwich,
NR4 7TJ

Alternatively, you can contact MARIANA directly on tel.no:07905759668 (Research number) or at M.Giurgiu@uea.ac.uk .

Yours faithfully,

Mariana Giurgiu
Trainee Clinical Psychologist

Faculty of Health
Postgraduate Research Programmes Office
University of East Anglia
Norwich NR4 7TJ
United Kingdom

"Consent to be Contacted" form

Please place an initial in the box of the statements you agree to.

I have been given information about this research and read the "Information Sheet" for the project called "Appraisals of mood swings in patients with bipolar disorder" ☐

I agree for my contact details to be shared with Mariana Giurgiu (UEA) and her research supervisor (Professor Malcolm Adams) ☐

I agree to be contacted by Mariana Giurgiu (UEA) to discuss the research study further. ☐

I have included my contact details on the reverse of this form. ☐

Potential Participant Full name……..

Potential Participant Signature……Date……

Contact details

Please complete the information below and I will aim to contact you within a few days of receiving this completed form.

Name……..

Address……

……

……

Telephone (daytime)……..

Telephone (evening)……..

Email address…….

Preferred time of contact (please circle): Morning/afternoon/evening

Please return this form to

Mariana Giurgiu

Trainee Clinical Psychologist
Address: UEA, Faculty of Health and Social Policy,
Doctorate Programme in Clinical Psychology ,
Elisabeth Fry Building,
Room 2.01
Norwich,
NR4 7TJ

Alternatively, you can contact MARIANA directly on tel.no:07905759668 (research number) or at M.Giurgiu@uea.ac.uk .

Appendix F

Measures used

Beliefs Questionnaire (HAPPI-R) V1.0 April 2007 Developed by Warren Mansell & Vaneeta Sadhnani

Please read each of the statements below and make a rating in the right hand column to indicate how much you believe each one. Make your rating by intersecting the line between 0% (don't believe this at all) to 100% (believe this completely). For example 50% means that the statement is 50:50, equally likely to be true or false for you. Here is an example:

EXAMPLE:

I feel comfortable in my home 0 50 100

|___|___|___|___|___|___|___|___|___|___|

This would mean that you rate your belief that you feel comfortable in your home at 70% - it is not completely true (which would be 100%), but is more true than false for you (i.e. it is over 50%).

Please now make a rating for each of the following items. Try not to think too much about each item. There are no right or wrong answers to this questionnaire and only your own opinion counts.

		I DON'T BELIEVE THIS AT ALL		I BELIEVE THIS COMPLETELY
1	I have no control over whether I get excited when something good happens to me	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
2	When I feel good, I am sure that everything will work out perfectly	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		

3	When I feel good, I know that whatever I do, I could do no wrong	0	50	100
4	When my moods drive upwards there is nothing I can do about it	0	50	100
5	When I am feeling restless and agitated, there is no point in eating regularly	0	50	100
6	I must be decisive about everything	0	50	100
7	If I am not extremely famous then I am worthless as a person	0	50	100

		I DON'T BELIEVE THIS AT ALL		I BELIEVE THIS COMPLETELY
8	On the surface I may often appear ambitious and independent but underneath I am very dependent on other people	0	50	100
9	When I get excited about something I have no control over my thoughts	0	50	100

10	If I sleep much less each night it means that I can get more done during the day	0	50	100
11	When I feel more active I realise that I am a very important person	0	50	100
12	When people around me are upset it is an overreaction to the situation	0	50	100
13	When I feel good, I must keep “on the go” all the time or things will fall apart around me	0	50	100
14	I must act on a good feeling as soon as I experience it	0	50	100
15	When my energy levels increase, I can bring about a large rise in my social status	0	50	100
16	If I fall behind in my goals for a short while, I will end up a failure	0	50	100
17	I have all my best ideas when I feel extremely good about myself	0	50	100
18	If I am very special to everyone around me then all	0	50	100

my problems will disappear

|___|___|___|___|___|___|___|___|___|___|

19 When I get agitated and restless, I must be hard on myself to cope

0 50 100

|___|___|___|___|___|___|___|___|___|___|

		I DON'T BELIEVE THIS AT ALL		I BELIEVE THIS COMPLETELY
20	When I feel restless, what happens to me is more important than what happens to other people	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
21	Doing anything very active can lead me to have a breakdown	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
22	The more excited I get the more confused I feel about what is real in the world	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
23	My high moods are outside my own control	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
24	My feelings need to be very intense to feel real to me	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
25	When I feel good about myself, I realise that all my previous anxieties and fears are unfounded	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		

26	When I feel restless, the world becomes full of unlimited opportunities for me	0	50	100
27	The better I feel, the more I get ashamed of whatever I do	0	50	100
28	When I am more active than usual, other people dislike me	0	50	100
29	I need to have complete control over my moods in order to prevent myself from having a breakdown	0	50	100
30	If I let other people do things at their own pace, I will not get what I want	0	50	100
31	When I get an idea, it always turns out to be the best solution	0	50	100
32	If I choose to follow other people's advice, I will lose control over my own behaviour	0	50	100
33	I sometimes do something risky just for the sake of stirring things up	0	50	100
34	When I get very agitated about something, I have no	0	50	100

control over my behaviour

|___|___|___|___|___|___|___|___|___|___|

35 If I notice something new when I am feeling good, I must make every effort to think about how it connects with everything else

0 50 100

|___|___|___|___|___|___|___|___|___|___|

36 When I feel really good, people don't understand me

0 50 100

|___|___|___|___|___|___|___|___|___|___|

37 The better I feel about myself, the worse other people react towards me

0 50 100

|___|___|___|___|___|___|___|___|___|___|

38 I cannot cope with feeling sad for a short while

0 50 100

|___|___|___|___|___|___|___|___|___|___|

39 What happens right now is more important to me than what happens in a few days time

0 50 100

|___|___|___|___|___|___|___|___|___|___|

40 Whenever I am feeling excited and restless, I end up telling myself I am being stupid for what I have done

0 50 100

|___|___|___|___|___|___|___|___|___|___|

41 When I feel excited, my fears and worries are no longer real

0 50 100

|___|___|___|___|___|___|___|___|___|___|

42 Unless I am active all the time, I will end up a failure

0 50 100

|___|___|___|___|___|___|___|___|___|___|___

43 Whenever I feel energetic I get overbearing and arrogant

0 50 100

|___|___|___|___|___|___|___|___|___|___|___|

		I DON'T BELIEVE THIS AT ALL		I BELIEVE THIS COMPLETELY
44	When I feel agitated and restless it means that I am about to have a breakdown	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
45	When I feel excited I know that other people desire me	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
46	If I have a bad night's sleep it means that I am about to have a breakdown	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
47	Whenever I feel energetic, I know I will end up not understanding who I am	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
48	When I try hard to get what I want, other people try to stop me	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
49	When I get new ideas I must tell people a once and at length so that they admire me	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		
50	When I feel I am right, I must keep on generating lots more ideas and solutions	0	50	100
		|___|___|___|___|___|___|___|___|___|___|		

51 When I have a lot of energy, I don't need support from anyone or anything

0 50 100

|___|___|___|___|___|___|___|___|___|___|

52 Whenever I get excited, I make a complete fool of myself

0 50 100

|___|___|___|___|___|___|___|___|___|___|

53 The better I feel the more I tell myself that everything I felt was not real

0 50 100

|___|___|___|___|___|___|___|___|___|___|

54 I need to be the centre of attention to enjoy myself

0 50 100

|___|___|___|___|___|___|___|___|___|___|

55 When I feel agitated and restless, I can fight against other people's attempts to control me

0 50 100

|___|___|___|___|___|___|___|___|___|___|

56 When I feel full of energy I am extremely funny and witty

0 50 100

|___|___|___|___|___|___|___|___|___|___|

57 When I am with other people it is most important that they admire me

0 50 100

|___|___|___|___|___|___|___|___|___|___|

58 When my mood reaches a certain extreme I have no responsibility over dealing with it

0 50 100

|___|___|___|___|___|___|___|___|___|___|

59 When people criticise my enthusiastic behaviour they are being deliberately malicious and nasty

0 50 100

|___|___|___|___|___|___|___|___|___|___|

60 When I get excited I do things that make me disgusted with myself

0 50 100

|___|___|___|___|___|___|___|___|___|___|

61 If I become very influential person then I can forget all my problems

0 50 100

|___|___|___|___|___|___|___|___|___|___|

Internal State Scale (ISS, Bauer, et al., 1991)

For each of the following statements, please blacken the circle on the line that best describes the way you have felt *over the past 24 hours*. While there may have been some change during that time, try to give a single summary rating for each item.

Today my mood is changeable.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel irritable.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel like a capable person.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel like people are out to get me.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I actually feel great inside.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel impulsive.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel depressed.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today my thoughts are going fast.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today it seems like nothing will ever work out for me.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel overactive.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel as if the world is against me.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel "speed up" inside.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel restless.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel argumentative.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel energized.

0 10 20 30 40 50 60 70 80 90 100

Not at all — Very much so
Rarely — Much of the time

Today I feel

0 10 20 30 40 50 60 70 80 90 100

Depressed — Manic
Low

Response to Positive Affect Questionnaire (RPA) Developed by G.C. Feldman (2008)

People think and do many different things when they feel happy.

Please read each of the following items and indicate whether you *never, sometimes, often or always* think or do each one when you feel happy, excited or enthused. Please indicate what you generally do, not what you think you should do.

When I feel happy, excited or enthused, I

1. Think about how happy I feel	*Never*	*Sometimes*	*Often*	*Always*
2. Think about how strong I feel	*Never*	*Sometimes*	*Often*	*Always*
3. Think "I am getting everything done"	*Never*	*Sometimes*	*Often*	*Always*
4. Think "people will think I am bragging"	*Never*	*Sometimes*	*Often*	*Always*
5. Think "I am living up to my potential"	*Never*	*Sometimes*	*Often*	*Always*
6. Notice how I am full of energy	*Never*	*Sometimes*	*Often*	*Always*
7. Think "I do not deserve this"	*Never*	*Sometimes*	*Often*	*Always*
8. Remind myself these feelings will not last	*Never*	*Sometimes*	*Often*	*Always*
9. Think about things that have not gone well for me .	*Never*	*Sometimes*	*Often*	*Always*
10. Think about how I feel up to doing everything	*Never*	*Sometimes*	*Often*	*Always*
11. Think "I am achieving everything"	*Never*	*Sometimes*	*Often*	*Always*
12. Think about how hard it is to concentrate	*Never*	*Sometimes*	*Often*	*Always*
13. Think "this is too good to be true"	*Never*	*Sometimes*	*Often*	*Always*
14. Think about things that could go wrong	*Never*	*Sometimes*	*Often*	*Always*
15. Savour the moment	*Never*	*Sometimes*	*Often*	*Always*
16. Think "my streak of luck is going to end soon"	*Never*	*Sometimes*	*Often*	*Always*
17. Think about how proud I am of myself	*Never*	*Sometimes*	*Often*	*Always*

Appendix G

Results of the Kolmogorov-Smirnov and Shapiro-Wilk tests for the distribution of the ISS scores on both groups

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
ISSA	clinical	.197	30	.004	.850	30	.001
	non-clinical	.230	26	.001	.887	26	.008
ISSD	clinical	.315	30	.000	.553	30	.000
	non-clinical	.353	26	.000	.736	26	.000
ISSP	clinical	.265	30	.000	.763	30	.000
	non-clinical	.195	26	.012	.894	26	.011
ISSW	clinical	.116	30	.200	.942	30	.106
	non-clinical	.159	26	.091	.959	26	.365

Appendix H

Correlation matrix for the HAPPI subscales, within the clinical group.

	HAPPI SA	**HAPPI SO**	**HAPPI C**	**HAPPI SOC**	**HAPPI EA**	**HAPPI LC**
HAPPI T	.94**	.94**	.94**	.94**	.96**	.71**
HAPPI SA		.88**	.85**	.86**	.86**	.51**
HAPPI SO			.81**	.93**	.87**	.65**
HAPPI C				.84**	.91**	.69**
HAPPI SOC					.91**	.57**
HAPPI EA						.66**

** Correlation significant at $p < 0.01$
N = 30

Appendix I

Descriptive statistics for the HAPPI Total and the HAPPI subscales for the non-clinical group

		HAPPI T	HAPPISA	HAPPISO	HAPPIC	HAPPISOC	HAPPIEA	HAPPILC
N	Valid	26	27	27	26	27	27	27
Mean		12.42	22.96	4.97	6.04	8.61	11.87	15.80
Median		9.92	16.92	3.00	4.81	5.00	10.00	15.00
Std. Deviation		8.38	15.62	5.56	7.10	10.78	11.01	12.77
Variance		70.29	243.97	30.89	50.45	116.33	121.32	162.22
Skewness		1.52	1.39	1.32	1.68	1.64	.85	.34
Std. Error of Skewness		.46	.45	.45	.46	.45	.45	.45
Range		34.75	58.46	20.00	30.00	38.33	37.50	40.00
Percentiles	25	6.79	11.54	1.00	.00	1.66	2.50	2.50
	50	9.92	16.92	3.00	4.81	5.00	10.00	15.00
	75	16.02	30.7692	8.00	9.37	13.33	20.00	25.00

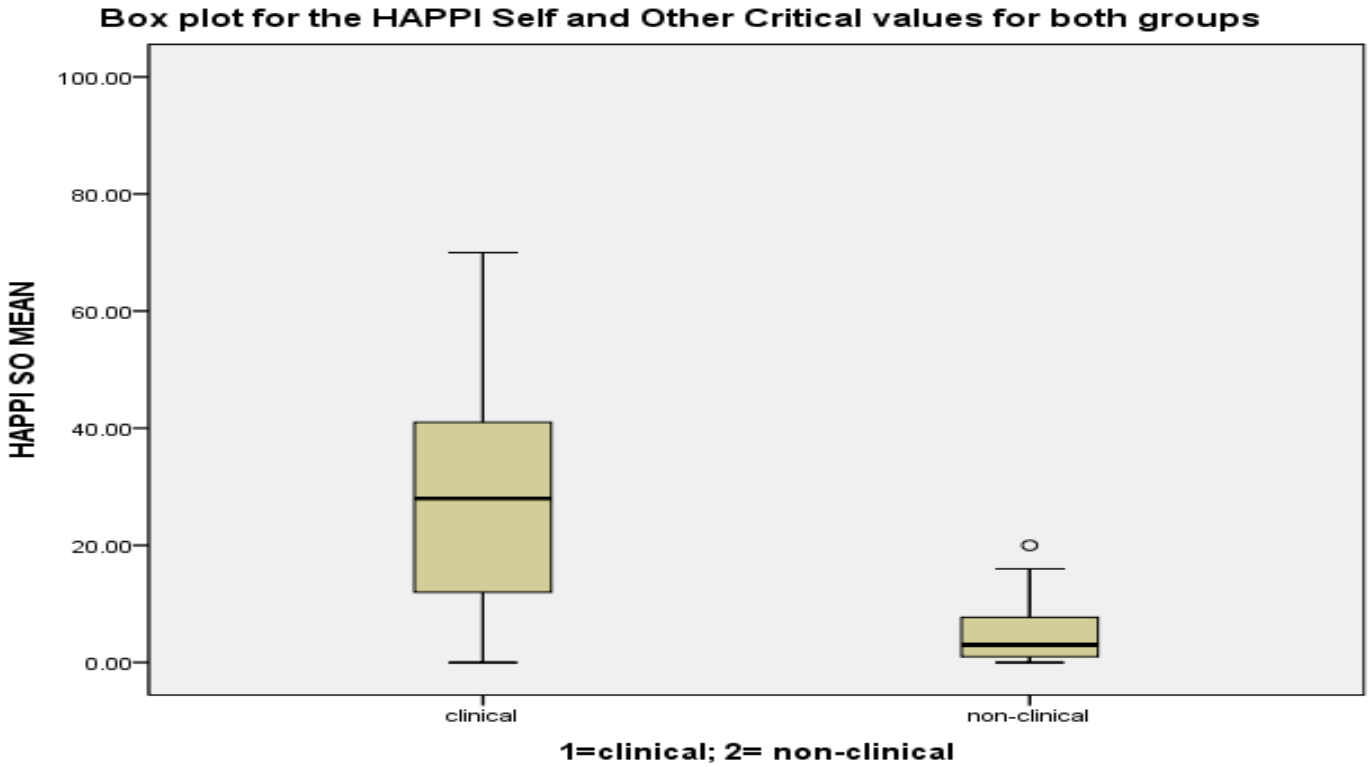
Appendix I

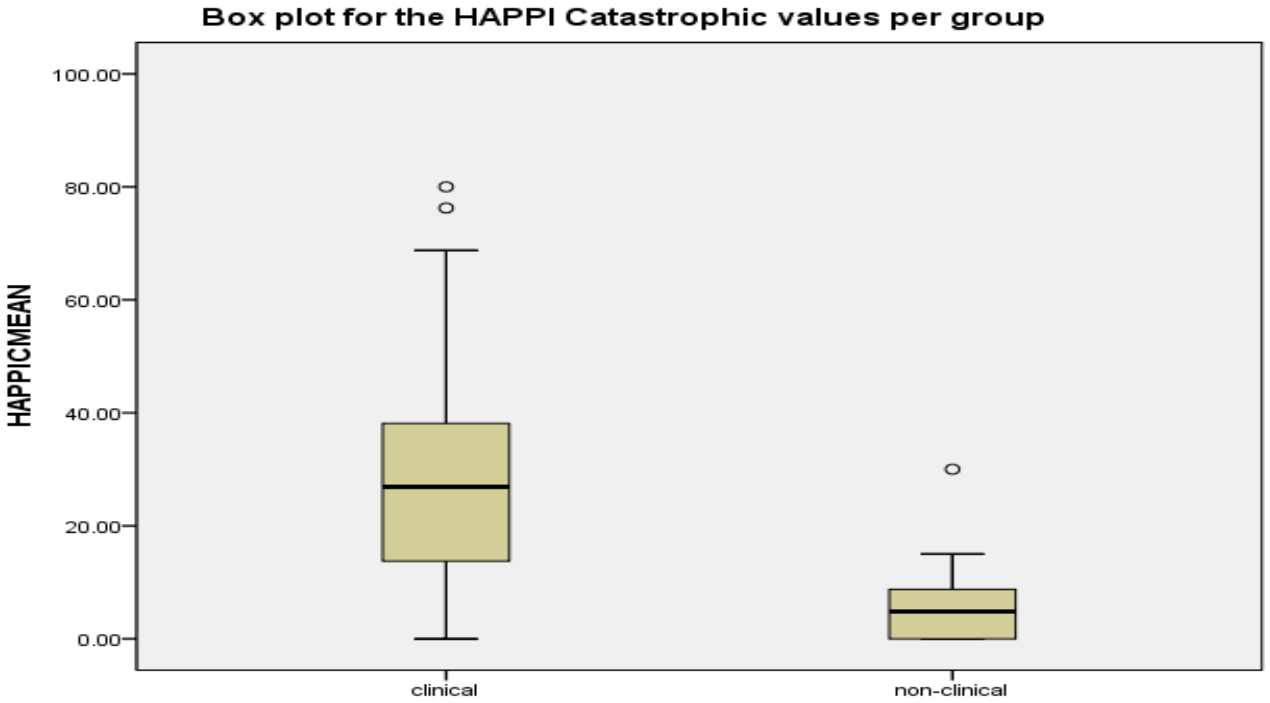
Descriptive statistics for the HAPPI Total and the HAPPI subscales for the clinical group

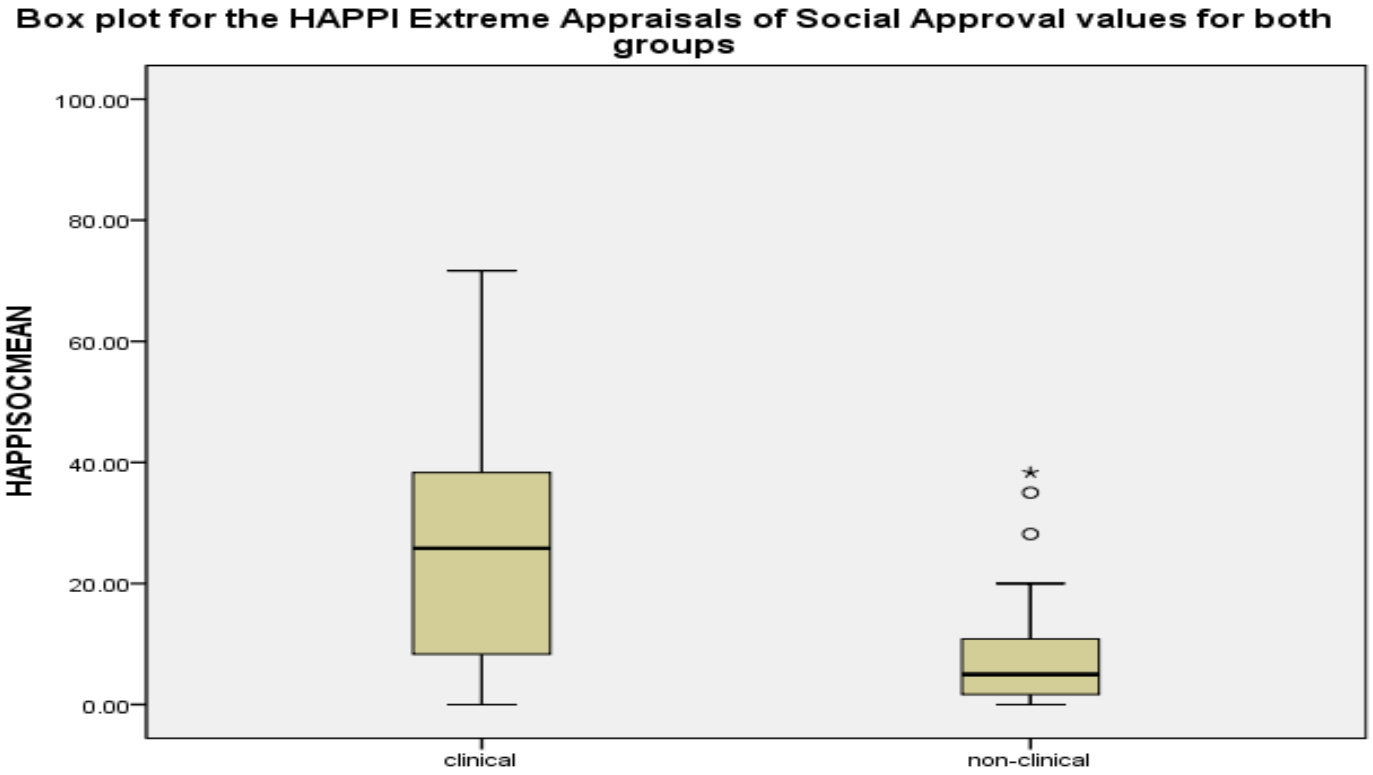
		HAPPI T	HAPPISA	HAPPISO	HAPPIC	HAPPISOC	HAPPIEA	HAPPILC
N	Valid	29	30	30	29	30	30	30
Mean		34.78	44.97	26.90	29.93	26.30	35.66	42.87
Median		37.54	51.15	28.00	26.87	25.83	32.50	32.50
Std. Deviation		21.86	24.69	21.27	23.61	21.32	25.35	29.78
Variance		477.85	609.37	452.25	557.46	454.53	642.72	887.19
Skewness		.44	-.23	.40	.80	.63	.80	.32
Std. Error of Skewness		.43	.43	.43	.43	.43	.43	.43
Range		79.84	91.54	70.00	80.00	71.67	92.50	90.00
Percentiles	25	19.63	25.09	10.25	13.12	7.50	21.87	16.25
	50	37.54	51.15	28.00	26.87	25.83	32.50	32.50
	75	41.23	63.23	41.75	38.44	38.33	42.50	71.87

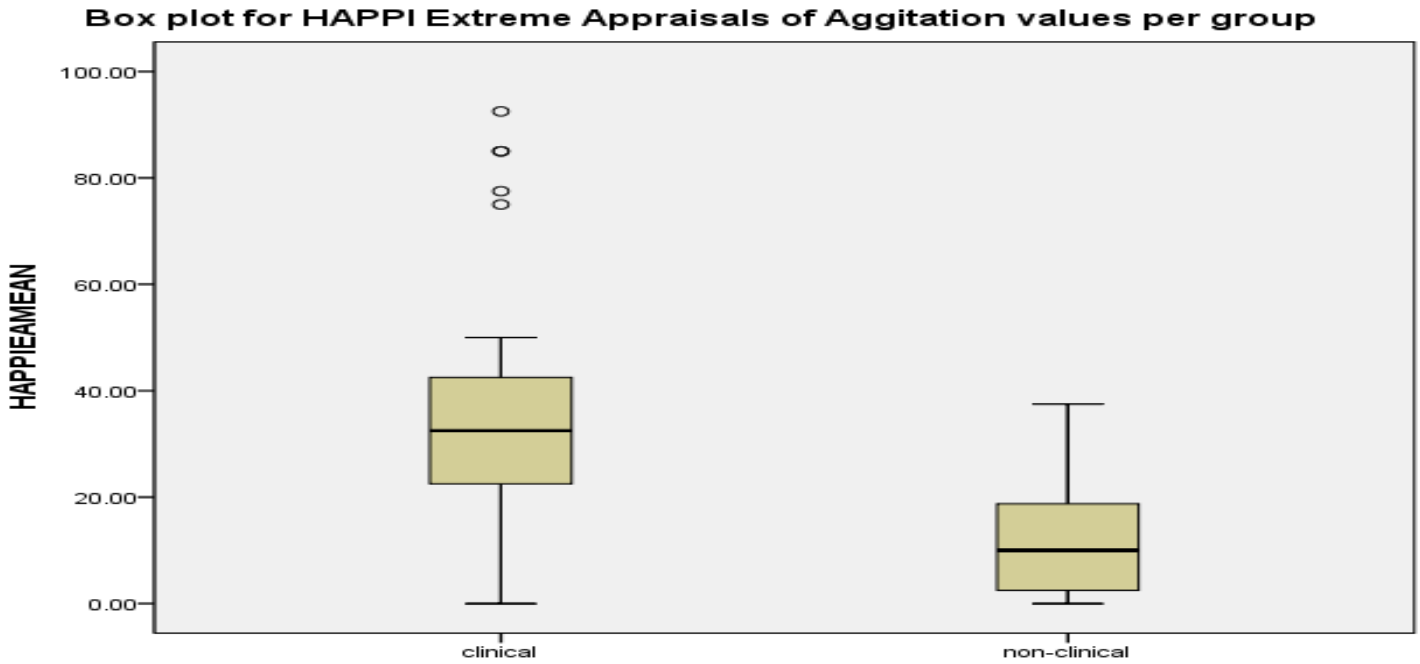
Appendix J

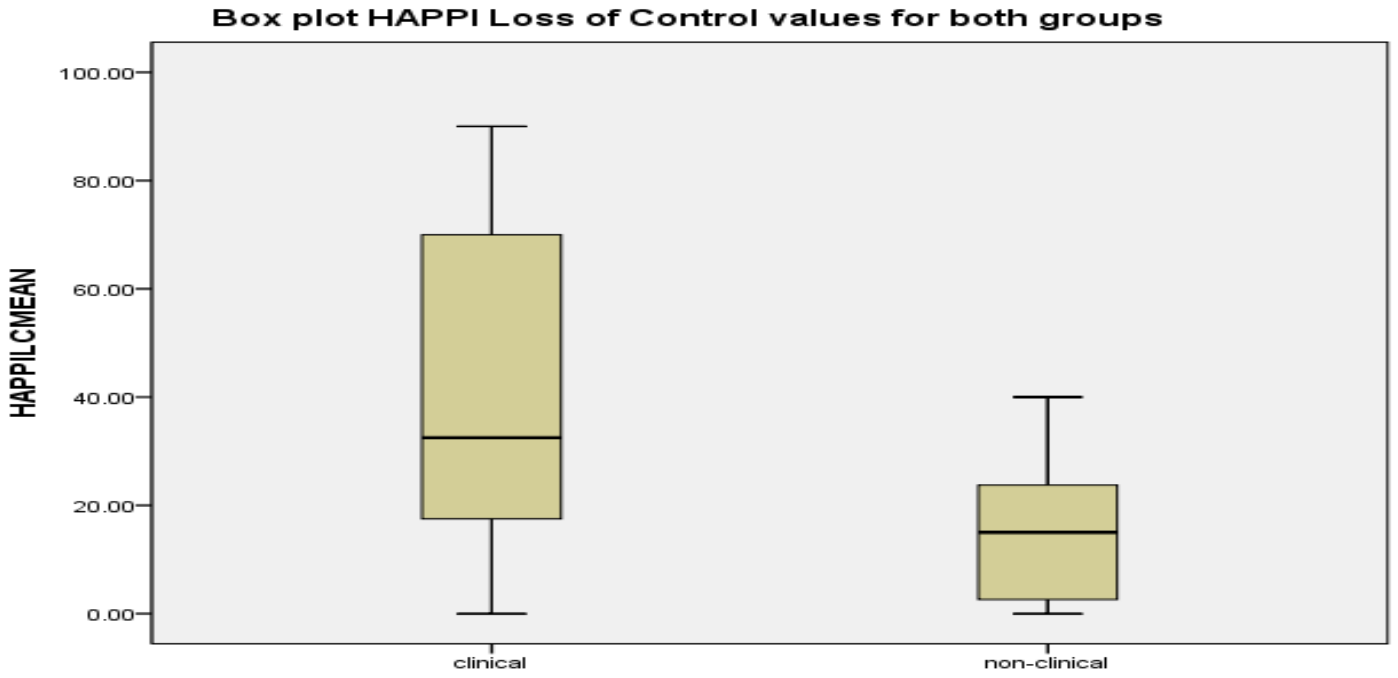
Box-plots for HAPPI SOC, HAPPI EA, HAPPI LC, HAPPI SO and HAPPI C




Box plot for the HAPPI Catastrophic values per group
HAPPICMEAN
100.00
80.00
60.00
40.00
20.00
0.00
clinical
non-clinical


Box plot for the HAPPI Extreme Appraisals of Social Approval values for both groups
HAPPISOCMEAN
100.00
80.00
60.00
40.00
20.00
0.00
clinical
non-clinical


Box plot for HAPPI Extreme Appraisals of Aggitation values per group
HAPPIEAMEAN
100.00
80.00
60.00
40.00
20.00
0.00
clinical
non-clinical


Box plot HAPPI Loss of Control values for both groups
HAPPILCMEAN
100.00
80.00
60.00
40.00
20.00
0.00
clinical
non-clinical

Appendix K

Effect size values for the between group comparisons on the HAPPI subscales

	HAPPI SA	**HAPPI SO**	**HAPPI C**	**HAPPI SOC**	**HAPPIEA**	**HAPPI LC**
Mann-Whitney U	196.00	158.50	125.50	208.00	150.00	186.00
Sig (two-tailed)	.001	.001	.001	.002	.001	.001
r	0.44	0.52	0.57	0.42	0.54	0.46

Appendix L

The values of the Kolmogorov-Smirnov for the RPA scores, per group

		Statistic	**df**	**Sig.**
RPAE	clinical	.177	30	.017
	non-clinical	.204	27	.005
RPAD	clinical	.134	30	.179
	non-clinical	.113	27	.200
RPAS	clinical	.188	30	.008
	non-clinical	.149	27	.126

Appendix M

Correlations between RPA D, HAPPI T, HAPPI C and HAPPI SO in the Non-Clinical Remitted Group

		HAPPI C	**HAPPI SO**	**HAPPI T**
RPA D	Spearman correlation	.332	.362	.202
	Significance level	.098	.064	.323
	N	26	27	26

Appendix M

Correlations between RPA E, RPA S, HAPPI SA in the Non-Clinical Remitted Group

		HAPPI SA
RPA E	**Spearman correlation**	.006
	Significance level	.978
	N	27
RPA S	**Spearman correlation**	-.086
	Significance level	.670
	N	27