

Beliefs about the automaticity of positive mood regulation:
Examination of the BAMR-Positive Emotion Downregulation Scale in relation to emotion
regulation strategies and mood symptoms

Alyson L. Dodd^{a*}, Kirsten Gilbert^b and June Gruber^c

^a Department of Psychology, Northumbria University, Newcastle-upon-Tyne, United Kingdom; ^b Department of Psychiatry, Washington University School of Medicine, Washington University in St. Louis, St. Louis, MO, 63108, USA; ^c Department of Psychology and Neuroscience, University of Colorado Boulder, USA

* Alyson Dodd, Department of Psychology, Northumbria University, Newcastle-upon-Tyne, NE1 8ST. Email: alyson.dodd@northumbria.ac.uk . Tel: 0191 243 7250

Beliefs about the automaticity of positive mood regulation: Examination of the BAMR-Positive Emotion Downregulation Scale in relation to emotion regulation strategies and mood symptoms

Abstract

Emotion regulation is a topic of great interest due to its relevance to navigating everyday life, as well as its relevance to psychopathology. Recent research indicates that beliefs about the automaticity of mood regulation are critical to psychological health. In the present study we assessed beliefs about the automaticity of positive mood regulation in relationship to self-reported mood symptoms and explicit emotion regulation strategies. Participants ($n = 200$) completed an online survey including a scale assessing beliefs about automatic downregulation of positive emotions (i.e., BAMR-PED), beliefs about automatic mood regulation for negative emotions, mood symptoms, and emotion regulation strategies. Results suggested that beliefs about automatic positive emotion regulation were associated with unhelpful emotion regulation strategies and reduced negative affect as well as fewer depressive, manic, and anxiety symptoms. Test-retest of the novel BAMR-PED measure was tested with a further sample ($n = 46$) and found to be acceptable. Future research should explore how these automatic beliefs have relevance to clinical disorders characterised by positive emotion disturbance, such as bipolar disorder.

Key words: emotion regulation; affect; hypomanic personality; bipolar disorder

Emotion regulation is the process of maintaining, enhancing or modifying emotions (Gross, 2015). Dual-process theories of emotion regulation suggest that it can be both effortful and automatic (Gyurak, Gross, & Etkin, 2011; Tugade & Fredrickson, 2007). During *effortful* emotion regulation, people consciously engage in regulatory attempts. *Automatic* emotion regulation is an implicit process. This does not require our attention and resources, whereas effortful emotion regulation is important for ensuring emotions are context-appropriate. Therefore, the ability to switch between automatic and effortful regulation is vital.

Considerable research has focused on negative emotion regulation; why we do it, how we do it, which strategies are effective, and its relationship with mental health. For example, rumination and risk-taking in response to low mood exacerbate depression (Nolen-Hoeksema, 1991). There is increasing evidence that the ability to maintain and enhance positive emotions influences mental health (Carl, Soskin, Kearns & Barlow, 2013). Dampening positive emotions has been linked to depression and mania risk (Carl et al., 2013; Feldman, Johnson & Joorman, 2008), whereas active attempts to harness or upregulate positive emotions improves wellbeing, given people typically desire heightened positive emotions (Tugade & Fredrickson, 2007).

However, as with negative emotion regulation, the ability to let positive emotions automatically run their course where appropriate is important, as this ability means expending less effort and having resources for other activities. The *beliefs* that individuals have about their ability to automatically regulate their emotions are one factor thought to influence emotion regulation (e.g., Tamir, 2009, 2016). Initial work highlighted that stronger beliefs in the process of automatic negative emotion regulation were associated with higher wellbeing, adaptive emotion regulation, and lower depression (Hutchison & Gunthert, 2013). This supports the theory that automatic emotion regulation is adaptive and important for wellbeing

(Gyurak, et al., 2011). Therefore, it is reasonable to expect that beliefs about automatic positive emotion regulation would also be related to enhanced wellbeing, reduced engagement with maladaptive emotion regulation strategies, and mental health. To date, no research has explored beliefs about the automaticity of positive emotions and their association with emotion regulation, current affect, and clinical outcomes.

This study focused on beliefs about automatic downregulation of positive emotions in the context of mania risk. This was of interest as when it comes to *excessive* happiness/excitement, accepting that what goes up must come down and allowing this to happen on its own is hypothetically adaptive. This is of particular significance to bipolar disorder (BD), in light of theory and evidence that suggest BD is characterised by persistent positive emotion, positive emotion dysregulation, and excessive attempts to regulate positive emotions (Carl et al., 2013; du Pont et al., 2016; Gruber, 2011). The mechanisms underpinning this require investigation. If beliefs about automatic positive emotion regulation are associated with fewer emotion regulation difficulties better outcomes mental health outcomes (as they are for beliefs about automatic *negative* mood regulation; Hutchison & Gunthert, 2013), the opposite would be expected for people lacking these beliefs. For example, if people at higher mania risk do not believe excessive positive emotions resolve on their own, this could be expected to link to greater tendencies to dampen positive emotions, thought to be an attempt to prevent high moods from escalating (Feldman et al., 2008).

In addition to dampening, there are links between mania risk and amplifying positive affect (positive rumination; Feldman et al., 2008) and responses to negative emotions (rumination, risk-taking; Knowles, 2005). This suggests a general tendency towards problematic effortful emotion regulation in those at higher risk of mania. As such, exploring negative emotion regulation strategies as well as beliefs about automatic negative emotion regulation is also of interest. It would be expected that higher beliefs about automatic

emotion regulation (both positive and negative) would be related to tendencies to use unhelpful emotion regulation strategies, as a potential mechanism driving use of these strategies.

Further, theory and evidence suggests that emotion regulation disturbance is transdiagnostic, and tendencies to engage in maladaptive positive and negative emotion regulation are associated with a range of mental health symptoms including hypomania, anxiety and depression (Carl et al., 2013; Knowles et al., 2005; McLaughlin & Nolen-Hoeksema, 2011). Looking beyond mania risk is therefore of interest when examining beliefs about emotion regulation and the strategies used for emotion regulation, with the expectation that beliefs about automatic emotion regulation would be independently associated with mental health difficulties over and above effortful emotion regulation, as an additional potential transdiagnostic process that could partly explain comorbidity.

To do this, the present investigation adapted the beliefs about automatic negative mood regulation (BAMR) scale developed by Hutchison and Gunthert (2013), to develop a complementary tool for assessing the extent to which people believe *positive* emotions regulate automatically. As the BAMR is about the dissolution rather than augmentation of negative emotions, the novel measure derived from this scale focuses specifically on beliefs that positive emotions will fade; Beliefs about Automatic Mood Regulation of Positive Emotion Downregulation (BAMR-PED) scale.

The first aim was to examine the factor structure of the BAMR-PED and its internal consistency. The second was to test its construct and incremental validity. Construct validity was tested by investigating associations with conceptually similar constructs: BAMR-NE, current positive and negative affect, and engagement in emotion regulation strategies for negative and positive affect that have been linked to mental health. We predicted that both BAMR measures would i) positively correlate with each other, positive affect, and adaptive

coping, and ii) negatively correlate with negative affect and maladaptive ER strategies.

Incremental validity was tested by investigating whether associations between the BAMR-PED, emotion, and ER strategies were upheld when controlling for BAMR-NE. Our third aim tested the hypothesis that beliefs about automatic mood regulation would negatively relate to depression, anxiety, manic symptoms, and trait mania risk.

Method

Scale Development

BAMR-NE items (Hutchison & Gunthert, 2013) were adapted through discussion among the authors. Terminology aimed to capture extreme positive emotion/activation (*When I'm excessively happy, full of energy, and/or excited, I believe that...*) Some items did not require amendment to apply to positive emotion (e.g., "Strong feelings only last a short period of time"). Wording from the BAMR-NE that described feeling 'better' was modified to "feeling your 'usual self'" and "balancing good moods."

Participants

Sample 1: Participants were recruited from community and university settings. Inclusion criteria were aged > 18 years and resident in the UK (the incentive for taking part was for Amazon UK). To allow an adequate sample for factor analysis, the recruitment target was 250. All 287 unique consents were sent a survey link. Of 232 who completed the survey, 32 took < 15 minutes and their data was removed. The final sample was $n = 200$ (66% female), with a mean age of 25.4 years ($SD = 7.57$).

Sample 2: Participants were recruited from the general population via social media and research volunteering websites. Participants had to be aged > 18 years. All seventy-one who completed Time One were sent a link to complete this again one week later. The final sample, who completed both time-points, was $n = 46$ (73.8% female), with a mean age of 35.4 years ($SD = 12.35$).

Measures

Demographic Questionnaire.

Participants' age, gender, occupation, education, ethnicity, and mental health diagnosis were requested.

BAMR-PED.

Scale development and psychometric properties and are discussed in the Method and Results. Internal consistency was good (Table 1).

BAMR-NE (Hutchison & Gunthert, 2013).

This 18-item scale measures beliefs about automatic regulation of negative emotion (e.g. "Sometimes my mood improves even when I don't give it much thought"). Items are rated from 1 = "Strongly disagree" to 5 = "Strongly agree". This measure has excellent internal consistency ($\alpha=.92$), high test-retest reliability, and patterns of associations with relevant constructs that support its construct validity. Factor analysis suggested it is unidimensional (Hutchison & Gunthert, 2013).

Responses to Positive Affect Questionnaire (RPA; Feldman et al., 2008).

This 13-item questionnaire assesses positive affect regulation on a 1 = "Almost never" to 4 = "Almost always" scale. The two-factor structure measures Positive Rumination ("...think about how happy you feel") and Dampening ("...think about things that could go wrong"), which have published alphas of .82 and .79 in , respectively, as well as expected associations with depression that support their construct validity (Nelis et al., 2016).

Response Styles Questionnaire (RSQ; Thomas & Bentall, 2002).

Based on Nolen-Hoeksema's RSQ (1991), participants rate to what extent they engage in each of 48 behaviours when they "feel down, sad or depressed" (1 = "Almost never" to 4 = "Almost always"). Factor analysis (Knowles et al., 2005) extracted three subscales: Risk-taking ("Do something reckless or dangerous"; $\alpha = .68$), Rumination ("Think

about how sad you feel”; $\alpha = .91$), and Adaptive Coping (“Do something that has made you feel better in the past”; $\alpha = .82$). Subscales had strong concurrent validity when testing associations with constructs such as depression and negative affect.

Positive & Negative Affect Schedule – Short Form (PANAS-SF; Mackinnon et al., 1999).

This 10-item measure asks participants whether they feel the way described (e.g. “nervous”, “excited”) on a scale from 1 = “Very slightly or not at all” to 5 = “Extremely”. The two subscales are Negative Affect (NA) and Positive Affect (PA). This short-form PANAS had high internal consistency ($\alpha = .78$ for PA, $\alpha = .87$ for NA; Mackinnon et al., 1999).

Altman Self-Rating Mania Scale (ASRM; Altman, Hedeker, Peterson, & Davis, 1997).

This questionnaire measures the experience of manic symptoms over the past week: happy mood, self-confidence, sleep, talkativeness and activity, measured from 0 (symptom not present) to 4 (symptom present all of the time). In the development paper, this self-report measure had very good internal consistency ($\alpha = .88$), and both concurrent and discriminant validity (distinguishing people who are currently manic from people who are not).

Hypomanic Personality Scale-20 (Meads & Bentall, 2008).

This is a true/false measure of traits such as extroversion, creativity, and energy (“I think I would make a good nightclub comedian”). As the HPS predicted transition to BD (Kwapil et al., 2000), it is commonly used as a measure of mania risk. This is 20-item abridged version has a published alpha of .80 and a strong correlation with the full-length HPS (Eckblad & Chapman, 1986).

Hospital Anxiety & Depression Scale (HADS; Zigmond & Snaith, 1983).

This scale comprises seven items relating to current anxiety (“Worrying thoughts go through my mind”) and seven for depression (“I feel as if I am slowed down”). Items are

rated from 0-3, with zero indicating the symptom is not present (some items are reversed). The HADS has strong internal consistency across multiple studies that also support its two-factor structure, and concurrent validity has been evidenced by correlations with existing depression and anxiety inventories (for a review, see Bjelland, Dahl, Haug & Neckelmann, 2002).

Procedure

Sample One: Approval was given by the Faculty Ethics Committee. Recruitment materials directed potential participants to an online participant information sheet on Qualtrics. Informed consent was taken online before participants could access the demographic questionnaire. Eligible participants were emailed a unique link to take part in the online survey on Qualtrics, which included all measures plus further measures not reported here. Participants were sent a debrief email with £5 Amazon voucher upon completion.

Sample Two: Approval was given by Faculty Ethics Committee. Advertisements directed potential participants to an online participant information sheet (Qualtrics). Participants gave online consent before proceeding to the survey, which asked for demographic information followed by the BAMR-PED. Participants were emailed the link to complete this again after one week. A reminder was emailed after a further week.

Results

Sample Characteristics and Descriptive Statistics

Sample One: Around half of the participants were employed (56%). The majority were university students (72.5%). Level of formal education completed was 48.5% high school, 22.5% undergraduate degree, and 29% postgraduate study. Most participants were from a white ethnic background (68%), and 25% reported a mental health diagnosis.

Descriptive statistics and internal consistencies (Cronbach's alpha) are displayed in Table 1.

Sample Two: In this sample, 70% were employed, whereas the majority were not currently studying at university (69.6%). Level of formal education completed was 2.2% no formal qualifications, 2.2% some high school, 15.2% completed high school, 39.1% undergraduate degree, and 41.3% postgraduate study. The majority were from a white ethnic background (89.1%) while around half (52.2%) reported a mental health diagnosis. Descriptive statistics and internal consistency for BAMR-PED are displayed in Table 1.

Aim 1: Psychometric properties of the BAMR-PED

In Sample One, Cronbach's alpha, scale if item deleted, and item-total correlations were calculated. Two items had an item-total correlation < 0.3 and were removed from subsequent analyses (items 4 and 6; see supplementary information). After their removal, internal consistency improved (Table 1). Item means ranged from 3.01 to 3.8 ($SD = .91$ to 1.26), similar to BAMR-NE items (Hutchison & Gunthert, 2013). Item endorsement frequencies indicated that no items had a high percentage of extreme values ('strongly disagree' or 'strongly agree').

An exploratory factor analysis (EFA) used principal axis extraction and promax oblique rotation (to replicate the BAMR-NE factor analysis, and allow for non-normality of items and factors that correlate). Parallel analysis (O'Connor, 2000) found six components with eigenvalues greater than the mean and 95th percentile random data eigenvalues. In the EFA output, four factors had an eigenvalue > 1 . Kaiser-Meyer-Olkin was > 0.5 (.79) and Bartlett's test was significant ($p < 0.001$). Communalities were low to moderate, with 50% lower than 0.4 (Osborne & Costello, 2005). As such, caution was exercised over the robustness of the factor structure and the overall BAMR-PED score was used in subsequent analyses.¹

¹ The BAMR-PED can be seen in the supplementary information.

Test-retest reliability was assessed in Sample 2 ($n = 46$). The mean number of days between Time One and Time Two was 11.8 days ($SD = 8.7$). Pearson's correlation between Time One and Time Two was acceptable ($r = .77, p < 0.001$).

Aim 2: Associations between beliefs about automatic mood regulation (positive and negative emotions), emotion regulation strategies, and self-reported affect (Sample One)

Pearson's correlations tested associations between the beliefs about automatic mood regulation, emotion regulation strategies, and current affect (Table 2). Holm-Bonferroni method was used to adjust for multiple comparisons (target p -value < 0.05). Believing that one is capable of automatically dealing with excessive positive emotion was positively associated with these same beliefs applied to negative emotion, and negatively associated with positive and negative affect, dampening, self-focused positive rumination, and risk-taking. See Table 2 for associations between these variables and beliefs about automatic negative mood regulation.

To test whether relationships between beliefs about the automatic downregulation of positive emotions, current affect, and emotion regulation strategies held when controlling for beliefs about the automatic regulation of negative emotion, partial correlations were conducted. Parallel findings were observed (Table 2).

Aim 3: Associations between beliefs about automatic mood downregulation for positive emotions and mood symptoms (Sample One)

Pearson's correlations with Holm-Bonferroni adjustment are shown in Table 2. Beliefs about automatic positive *and* negative mood regulation were negatively associated with mania risk, current depression and anxiety. Positive emotion beliefs had an additional negative correlation with current mania. Partial correlations controlling for negative emotion beliefs demonstrated that associations between positive emotion beliefs, anxiety, depression and mania risk were upheld. Partial correlations controlled for current mood and anxiety,

given significant associations between mania risk and symptoms (mania, $r=.35$, anxiety, $r=.44$, depression $r=.28$, $p<0.001$). Neither beliefs about automatic positive ($r = -.04$) or negative emotion regulation ($r = .00$) retained a significant association with mania risk.²

Discussion

This study developed and validated a novel measure of beliefs about automatic downregulation of *positive* mood and examined its relationship to affective and clinical outcomes. The first aim examined the psychometric properties and factor structure of the BAMR-PED. This is a reliable and valid, unidimensional measure.

The second aim examined associations with emotion-relevant constructs. As expected, beliefs about the automaticity of positive mood regulation were positively associated with these beliefs for negative mood. This suggests that people who feel their moods are capable of resolving on their own believe this irrespective of emotional valence. When investigating associations between beliefs that emotions regulate automatically, emotion regulation strategies, and current affect, the pattern of findings supports the idea that these beliefs are helpful for effective emotion regulation. This is in line with previous findings that beliefs about automatic negative emotion regulation related to lower depression and fewer deficits in emotion regulation (Hutchison & Gunthert, 2013). In the current study, both positive and negative emotion beliefs related to reduced engagement in rumination and risk-taking in response to depression, dampening positive affect, and lower negative affect. Beliefs about automatic negative emotion regulation related to higher positive affect,

² Hierarchical multiple regression tested whether BAMR-PED made a unique contribution to the variance in manic, depressive and anxious symptoms, and trait mania risk. Each model controlled for dampening and/or positive rumination in step two. For depression this was both, for manic symptoms this was positive rumination, and for anxiety this was dampening. The BAMR-PED predicted symptoms over and above propensity to engage in effortful positive emotion regulation. Beliefs about the automatic downregulation of positive emotions made a significant, unique contribution to the variance in mania risk in addition to dampening and positive rumination. However, when current symptoms were added in the third step of the model, the new measure of beliefs did not predict mania risk. These results can be seen in full in the supplementary material.

suggesting that believing negative emotions will subside on their own enhances positive affect as well as reducing negative affect. With the exception of rumination on low mood, associations between the beliefs about automatic downregulation of positive emotions, emotion regulation strategies and affect were upheld when controlling for beliefs about automatic regulation of negative emotions, demonstrating incremental validity.

Our third aim was to explore associations between beliefs about automatic emotion regulation and psychopathology. Beliefs about automatic positive and negative emotion regulation were related to lower depression and anxiety (as in Hutchison & Gunthert, 2013). Relationships between beliefs about automatic positive emotion regulation and anxiety and depression were sustained when controlling for beliefs about automatic negative emotion regulation. Beliefs about automatic downregulation of positive emotions, but not negative emotions, were associated with lower manic symptoms. This pattern of findings suggests that beliefs about automatic positive and negative emotion regulation may be protective against the development of anxiety and depression, while beliefs about automatic downregulation of positive emotions appear more specifically related to mania.

Beliefs about automatic positive *and* negative mood regulation significantly related to mania risk. This is not surprising given mania risk is associated with both manic and depressive symptoms (Kwapil et al., 2000). However, when controlling for current symptoms, the relationship between beliefs about automatic mood regulation and mania risk were no longer significant. It is possible these beliefs are more relevant for how someone is currently feeling than risk of psychological disorder. Research with people who have psychological disorders characterised by emotion dysregulation, such as BD, is an important next step.

Some unexpected findings warrant discussion. As this is an initial validation, all interpretations are tentative. Firstly, beliefs about automatic positive emotion regulation and

propensity to ruminate on positive emotions were not related. However, as the beliefs focused on automatic downregulation of positive emotions, it may be that rumination (an amplifying strategy) is not relevant. Positive rumination may be more relevant to beliefs about how automatic *upregulation* of positive emotion is, with people who want to amplify or maintain positive emotions engaging in positive rumination if they do not believe upregulation will happen automatically. Alternatively, the lack of association with positive rumination might reflect difficulties with the effortful process of savouring positive emotion (Carl et al., 2013). Secondly, there was a negative association between beliefs about automatic regulation of positive emotions and positive affect – the opposite of what was expected. When people do not believe they are able to harness and control *wanted* positive emotions, this could be a pathway to reduced positive affect. Alternatively, when positive emotions are *unwanted*, there may be greater propensity to actively diminish positive emotions when someone does not believe they downregulate automatically.

Thirdly, beliefs about automatic positive emotion regulation were not uniquely associated with adaptive coping or rumination in response to depression. Beliefs about automatic positive emotion regulation may be irrelevant to negative emotion regulation strategies, much like beliefs about automatic negative emotion regulation may be irrelevant to amplifying positive affect. This is a tentative interpretation though, and does not explain why beliefs about automatic positive emotion regulation were related to risk-taking in response to depression.

Limitations & Future Directions

Several limitations in the study design should be addressed in future research to improve our understanding of when these types of beliefs are beneficial, and for whom. First, the current sample was relatively homogenous (mostly studying at one UK university in Sample one), lacked ethnic diversity, and was non-clinical. Future studies should include

clinical samples characterised by positive emotion disturbance (e.g., BD; Gruber, 2011). This will help clarify the impact of beliefs about automatic mood regulation on psychopathology.

Secondly, this was a self-report online survey. Although participants who completed the survey in an unrealistic timeframe were omitted, confidence in response validity would be improved by asking participants to select specific responses to randomly interspersed questions. Thirdly, causality cannot be inferred from this cross-sectional design. It is possible that beliefs about automatic emotion regulation do not underlie the development of mood symptoms. Instead, symptoms may influence beliefs people hold about emotion regulation. For example, if someone experiences heightened mania, they may not expect positive emotions to downregulate automatically due to past experiences of excessive, persistent high moods. The same argument could be made for those who have experienced more persistent depression and anxiety. On the other hand, people who do not experience significant mood symptoms may not feel they need to regulate them, again driving beliefs that they are not worth attending to and will resolve on their own, rather than the other way around.

Fourth, this study focused on beliefs that excessive positive emotions would automatically *downregulate*. Future work should explore to what extent people believe that *upregulating* low positive emotions is an automatic (and adaptive) process. On the other hand, belief in the automatic upregulation of positive emotions that are already excessive, and potentially unwanted in the context of conditions such as BD, is equally an important area for further exploration.

Linked to this, understanding of mechanistic pathways should include testing potential moderators of the relationship between beliefs about automatic mood regulation and outcomes, which was beyond the scope of the current research. As one example, tendencies to engage in emotion regulation strategies that drive mood downwards (dampening) may influence the relationship between beliefs and affect, with the interaction of high

endorsement of these beliefs and greater propensity towards using dampening expected to have a greater impact on subsequent affect. Additionally, the ‘fallacy of uniform efficacy’ suggests the distinction between adaptive versus maladaptive emotion regulation strategies fails to take context into account (Bonanno & Burton, 2013). Similarly, beliefs about automatic mood regulation may be more helpful in some circumstances than others (Hutchison & Gunthert, 2013).

Further potential moderators include other types of emotion beliefs. Firstly, generalised expectancies around effortful mood regulation are relevant here (Hutchison & Gunthert, 2013)³. If someone believes emotions can automatically regulate, but also believes that they are capable of effortful regulation when needed, this would be expected to improve well-being. Conversely, whether or not someone believes their positive emotions regulate automatically, it is likely they will have more detrimental outcomes if they believe they are unable to regulate effortfully. A key aim for future research is to investigate how people know when to let emotions come and go, and when to intervene.

In addition, how people respond to their emotions is likely to be influenced by their ‘emotion malleability beliefs’ (how fixed versus changeable people believe emotions are; Kneeland, Dovidio, Joormann, & Clark, 2016). People who believe their emotions are fixed report lower self-efficacy in relation to emotion regulation, reduced well-being, and are less likely to effortfully engage in, helpful emotion regulation (Kneeland, Nolen-Hoeksema, Dovidio, & Gruber, 2016). As these are beliefs about how changeable emotions are, they complement beliefs about how automatic the *process* of emotion regulation is. While emotion malleability beliefs and beliefs about automatic mood regulation are both considered to be

³ Beliefs about automatic mood regulation and beliefs about effortful mood regulation are distinct, but related to one another. Both are also related to deficits in emotion regulation and depression (Hutchison & Gunthert, 2013). As in validation of the BAMR-NE, this study included the Negative Mood Regulation Scale, which measures the expectancies that effortful regulation will be successful. This was not used in the analyses reported here as the primary focus was validation of the BAMR-PED and there was no corresponding measure for positive emotion.

adaptive (Hutchison & Gunthert, 2013; Kneeland, Dovidio, et al., 2016), different combinations of these beliefs may lead to different outcomes. For example, strong beliefs in emotion malleability coupled with weak beliefs in automatic mood regulation may lead to over-use of effortful regulation strategies.

Further, valuations people assign to emotions influence regulation goals (Gross, 2015), so the role of emotion preferences (how that person wants to feel at that time; Tamir, 2009) is another missing piece of the puzzle. It is not possible to ascertain whether automatic downregulation of positive emotion regulation was viewed as an advantage, as the extent to which positive emotions were unwanted was unknown. This is relevant to psychological disorders characterised by positive emotion disturbance, especially in BD, where theory suggests that positive, activated mood states can be appraised both negatively and positively, and that appraisal drives attempts to upregulate or downregulate over time (for a review, see Kelly et al., 2017).

Longitudinal approaches, in particular using experience sampling methodology, are required to explore dynamic relationships among these processes in real life and address questions about causality. Interactions between emotion beliefs, the selection of emotion regulation strategies, and their combined influence on subsequent affective and clinical outcomes are important avenues for future investigation.

In conclusion, relationships with similar constructs and with psychopathology provided provisional support to the theory that having more belief in the automaticity of emotion regulation is adaptive, and that positive emotion regulation is important for mental health and wellbeing. However, future research is required to determine the circumstances under which these beliefs are unhelpful as opposed to helpful.

References

- Altman, E. G., Hedeker, D., Peterson, J. L., & Davis, J. M. (1997). The Altman Self-Rating Mania Scale. *Biological Psychiatry*, 42(10), 948-955. doi:http://dx.doi.org/10.1016/S0006-3223(96)00548-3
- Bjelland, I., Dahl, A. A., Haug, T. T., & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale: an updated literature review. *Journal of Psychosomatic Research*, 52(2), 69-77.
- Bonanno, G. A., & Burton, C. L. (2013). Regulatory Flexibility: An Individual Differences Perspective on Coping and Emotion Regulation. *Perspectives on Psychological Science*, 8(6), 591-612. doi:10.1177/1745691613504116
- Carl, J. R., Soskin, D. P., Kerns, C., & Barlow, D. H. (2013). Positive emotion regulation in emotional disorders: A theoretical review. *Clinical Psychology Review*, 33(3), 343-360. doi:http://dx.doi.org/10.1016/j.cpr.2013.01.003
- du Pont, A., Welker, K., Gilbert, K. E., & Gruber, J. (2016). The emerging field of positive emotion dysregulation. In K. Vohs & R. Baumeister (Eds.), *Handbook of self-regulation: research, theory and applications* (3rd ed., pp. 364-379). London: Guildford Press.
- Feldman, G. C., Joormann, J., & Johnson, S. L. (2008). Responses to Positive Affect: A Self-Report Measure of Rumination and Dampening. *Cognitive Therapy and Research*, 32(4), 507-525. doi:10.1007/s10608-006-9083-0
- Gross, J. J. (2015). Emotion Regulation: Current Status and Future Prospects. *Psychological Inquiry*, 26(1), 1-26. doi:10.1080/1047840X.2014.940781
- Gruber, J. (2011). A Review and Synthesis of Positive Emotion and Reward Disturbance in Bipolar Disorder. *Clinical Psychology & Psychotherapy*, 18(5), 356-365. doi:10.1002/cpp.776
- Gyurak, A., Gross, J. J., & Etkin, A. (2011). Explicit and implicit emotion regulation: A dual-process framework. *Cognition and Emotion*, 25(3), 400-412. doi:10.1080/02699931.2010.544160
- Hutchison, J. A., & Gunthert, K. C. (2013). Measuring Beliefs About Automatic Mood Regulation: Development of a Self-Report Scale. *Cognitive Therapy and Research*, 37(6), 1243-1256. doi:10.1007/s10608-013-9559-7
- Kelly, R. E., Dodd, A. L., & Mansell, W. (2017). "When my Moods Drive Upward There Is Nothing I Can Do about It": A Review of Extreme Appraisals of Internal States and the Bipolar Spectrum. *Frontiers in Psychology*, 8(1235). doi:10.3389/fpsyg.2017.01235

- Kneeland, E. T., Dovidio, J. F., Joormann, J., & Clark, M. S. (2016). Emotion malleability beliefs, emotion regulation, and psychopathology: Integrating affective and clinical science. *Clinical Psychology Review, 45*, 81-88. doi:http://dx.doi.org/10.1016/j.cpr.2016.03.008
- Kneeland, E. T., Nolen-Hoeksema, S., Dovidio, J. F., & Gruber, J. (2016). Beliefs about emotion's malleability influence state emotion regulation. *Motivation and Emotion, 40*(5), 740-749. doi:10.1007/s11031-016-9566-6
- Knowles, R., Tai, S., Christensen, I., & Bentall, R. (2005). Coping with depression and vulnerability to mania: A factor analytic study of the Nolen-Hoeksema (1991) Response Styles Questionnaire. *British Journal of Clinical Psychology, 44*(1), 99-112. doi:10.1348/014466504X20062
- Kwapil, T. R., Miller, M. B., Zinser, M. C., Chapman, L. J., Chapman, J., & Eckblad, M. (2000). A longitudinal study of high scorers on the Hypomanic Personality Scale. *Journal of Abnormal Psychology, 109*(2), 222.
- Mackinnon, A., Jorm, A. F., Christensen, H., Korten, A. E., Jacomb, P. A., & Rodgers, B. (1999). A short form of the Positive and Negative Affect Schedule: evaluation of factorial validity and invariance across demographic variables in a community sample. *Personality and Individual Differences, 27*(3), 405-416. doi:http://dx.doi.org/10.1016/S0191-8869(98)00251-7
- McLaughlin, K. A., & Nolen-Hoeksema, S. (2011). Rumination as a transdiagnostic factor in depression and anxiety. *Behaviour Research and Therapy, 49*(3), 186-193. doi.org/10.1016/j.brat.2010.12.006
- Meads, D. M., & Bentall, R. P. (2008). Rasch analysis and item reduction of the hypomanic personality scale. *Personality and Individual Differences, 44*(8), 1772-1783. doi:http://dx.doi.org/10.1016/j.paid.2008.02.009
- Nelis, S., Luyckx, K., Feldman, G., Bastin, M., Raes, F., & Bijttebier, P. (2016). Assessing response styles to positive affect: One or two dimensions of positive rumination in the Responses to Positive Affect questionnaire? *Personality and Individual Differences, 89*(Supplement C), 40-46. doi:https://doi.org/10.1016/j.paid.2015.09.031
- Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology, 100*(4), 569-582. doi:10.1037/0021-843X.100.4.569

- Osborne, J. W., & Costello, A. B. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical assessment, research & evaluation, 10*(7), 1-9.
- Tamir, M. (2009). What Do People Want to Feel and Why? *Current Directions in Psychological Science, 18*(2), 101-105. doi:doi:10.1111/j.1467-8721.2009.01617.x
- Tamir, M. (2016). Why Do People Regulate Their Emotions? A Taxonomy of Motives in Emotion Regulation. *Personality and Social Psychology Review, 20*(3), 199-222. doi:doi:10.1177/1088868315586325
- Thomas, J., & Bentall, R. P. (2002). Hypomanic traits and response styles to depression. *British Journal of Clinical Psychology, 41*(3), 309-313. doi:10.1348/014466502760379154
- Zigmond, A. S., & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica, 67*(6), 361-370. doi:10.1111/j.1600-0447.1983.tb09716.x

Disclosure of interest statement: The authors report no conflicts of interest.

Acknowledgements: Dr Gilbert's work was supported by K23MH115074 (PI: Gilbert).

Table 1: Sample characteristics & Descriptive Statistics

Variable	<i>Sample 1</i>			<i>Sample 2</i>		
	<i>M</i>	<i>S.D.</i>	<i>α</i>	<i>M</i>	<i>S.D.</i>	<i>α</i>
BAMR-PED	55.3	8.9	.83	58.5	8.53	.83
BAMR-NE	55.7	11.2	.89	--	--	--
RPA Positive Rumination	30.0	5.2	.81	--	--	--
RPA Dampening	16.3	4.8	.79	--	--	--
RSQ Dangerous Activities	12.0	4.3	.84	--	--	--
RSQ Rumination	57.5	12.6	.90	--	--	--
RSQ Adaptive Coping	33.8	6.8	.83	--	--	--
PANAS-NA	9.9	4.8	.89	--	--	--
PANAS-PA	12.3	4.7	.85	--	--	--
ASRM	5.7	3.6	.74	--	--	--
HADS Anxiety	8.9	4.1	.79	--	--	--
HADS Depression	6.5	4.3	.84	--	--	--
HPS	8.2	3.5	.66	--	--	--

Table 2: Hypothesis-driven correlations between selected variables (Sample 1)

Variable	BAMR-PED	BAMR-NE	BAMR-PED Partial correlation controlling for BAMR-NE
BAMR-PED	--	--	--
BAMR-NE	.33*	--	--
PANAS-PA	-.26*	.24*	-.37*
PANAS-NA	-.37*	-.34*	-.29*
RPA Dampening	-.27*	-.39*	-.17*
RPA Positive Rumination	-.09	.03	--
RSQ Adaptive Coping	-.11	.33*	--
RSQ Dangerous Activities	-.40*	-.30*	-.34*
RSQ Rumination	-.19*	-.57*	-.02
ASRM	-.37*	.02	--
HADS Depression	-.39*	-.52*	-.27*
HADS Anxiety	-.32*	-.55*	-.18*
HPS	-.29*	-.24*	-.23*

* Significant after adjusting p using Holm-Bonferroni correction

Partial correlations were only conducted where the dependent variable was significantly correlated with both BAMR measures

Beliefs about automatic mood regulation – positive emotion (BAMR-PE) scale

This is a questionnaire to find out what people believe about **positive** emotions or feelings. Please answer the statements by giving as true a picture of your own beliefs as possible. Of course, there are no right or wrong answers. *Remember, the questionnaire is about what you believe, not about what you actually or usually do.*

To help you focus on beliefs, all items start with the phrase, “*When I’m excessively happy, full of energy, and/or excited, I believe that...*” Please respond by marking the appropriate number:

1. Strongly disagree
2. Mildly disagree
3. Agree and disagree equally
4. Mildly agree
5. Strongly agree

When I’m *excessively* happy, full of energy, and/or excited I believe that...

1. Feeling my usual self will just naturally happen with some time.

2. Doing something productive will help feel my usual self. (filler)

3. This good mood could go on and on. (r)

4. *My body knows how to calm itself down.**

5. These feelings are justified (filler)*

6. *I often feel less excited without even trying.*

7. Strong feelings only last a short period of time.*

8. I've learned to cope well with these feelings. (filler)*

9. Sometimes these feelings take care of themselves.*

10. Exercising will help me feel emotionally balanced. (filler)

11. I'll feel my usual self if I let my emotions take their natural course.

12. I'll bounce right back with a bit of time.*

13. I'll feel this way for a long time. (r)*

14. Religion will help me cope. (filler)*

15. Dealing with these feelings will take a lot of work. (r)*

16. I won't feel my usual self unless I try to control my mood. (r)

17. This reaction is normal. (filler)*

18. My feelings sometimes even themselves out on their own.

19. Balancing these good moods usually takes some conscious effort. (r)

20. It's just a passing thing.*
21. Laughter is the best medicine. (filler)*
22. I'll need to do some active coping to feel in control of my emotions. (r)
23. A distraction might do me some good. (filler)*
24. Letting a little time pass will be enough to make me feel my usual self.
25. Things are not as bad as they might seem. (filler)*
26. Sometimes my mood evens itself out even when I don't give it much thought.
27. Even if I just let this mood be, I'll feel my usual self soon.

*Items unchanged from the original BAMR (Hutchison & Gunthert, 2013)

(r) Reverse scored item

Deleted items are given in italics