The Interactive Effect of Happiness Emotion Goals and Emotion Regulation Self-efficacy on Anxiety and Depression

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Abstract

Over-valuation of happiness might be a transdiagnostic risk factor for psychopathology. However, emotion regulation self-efficacy may influence the association between happiness emotion goals and psychopathology. The purpose of the present study was twofold. First, we sought to replicate prior findings showing that happiness emotion goals and depressive symptoms are positively related, but only among those with lower emotion regulation self-efficacy. Second, we examined whether the noted interaction effect would relate to generalized anxiety symptoms in a sample of general population adults (\(N = 504\)). Results from regression analyses were consistent with our predictions suggesting that individuals with unrealistic happiness emotion goals and low emotion regulation self-efficacy may be particularly prone to experiencing negative emotional states and psychological distress. Further, study findings suggest the possibility that the noted interaction has transdiagnostic value and it may be important to target emotion regulation self-efficacy in the service of alleviating internalizing psychopathology.

Keywords: depression, anxiety, emotion goals, happiness, emotion regulation self-efficacy, emotion regulation.
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Self-efficacy on Anxiety and Depression

There has been a recent groundswell of support in favor of identifying transdiagnostic risk factors for psychopathology (Nolen-Hoeksema & Watkins, 2011; Sauer-Zavala et al., 2017). Identifying common factors that cut across disorders is important for clarifying the extensive comorbidity that exists among maladaptive psychological outcomes (Brown, Campbell, Lehman, Grisham, & Mancill, 2001) and may have important implications for psychological assessment and intervention (Rodriguez-Seijas, Eaton, & Krueger, 2015). Specifically, transdiagnostic research may lead to the development of transdiagnostic treatments that can be applied across a number of pathological presentations (Barlow, Allen, & Choate, 2016), thus reducing clinician and client burden in a number of ways (e.g., portability, cost, time). Interventions such as these may be especially transformative in areas where mental health staff and other resources are limited.

Pursuant to the present research, a growing body of literature suggests that the over-valuation of happiness might be a transdiagnostic risk factor worthy of further examination (Ford et al., 2014, 2015; Mauss et al., 2011, 2012). Happiness is generally considered a positive, and desirable, emotional state. However, for some, the over-valuation of happiness can result in unrealistic emotional expectations (Mauss et al., 2011). For example, an individual might believe that they have to be happy all of the time, or that they should never experience negative emotion. Such beliefs create ample opportunities for disappointment because fluctuating emotions are a normal part of the human experience (Gruber, Mauss, & Tamir, 2011). Consequently, research suggests that the over-valuation of happiness is associated with less positive emotion (Mauss et al., 2011). In contexts that prioritize happiness, individuals who experience more negative
emotion indicate lower life satisfaction than individuals who experience less negative emotion (Bastian, Kuppens, De Roover, & Diener, 2014). Further, high rates of valuing happiness have been linked to loneliness (Mauss et al., 2012), depressive symptoms (Ford et al., 2014), and symptoms of bipolar disorder (Ford et al., 2015). These data point to the problematic nature of unrealistic expectations regarding happiness.

However, recent evidence suggests that it may be important to consider individual differences in emotion regulation self-efficacy to more fully understand the relationship between happiness emotion goals and maladaptive outcomes (Fergus & Bardeen, 2016). Emotion regulation self-efficacy is an individual’s belief about his or her ability to regulate emotions. If individuals have low confidence in their ability to effectively alter their emotional experience, the effort applied to regulatory attempts may be relatively low (Catanzaro & Mearns, 1990). Emotion regulation self-efficacy might also impact the type of regulatory strategies that are used, thereby influencing cognitive and behavioral goal attainment (Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003). Specifically, higher emotion regulation self-efficacy is associated with greater use of adaptive versus maladaptive regulatory strategies (Kassel, Bornovalova, & Mehta, 2007) and relatively lower levels of depressive and anxiety symptoms (Backenstrass et al., 2006; Bandura et al., 2003; Jimenez, Niles, & Park, 2010). Moreover, higher emotion regulation self-efficacy is associated with larger changes in depressive and anxiety symptoms over the course of treatment (Kassel et al., 2007).

As noted, some evidence suggests that having unrealistically high happiness emotion goals combined with a perceived inability to alter emotional experience in the desired direction may result in prolonged negative affect and longer-term maladaptive psychological outcomes. To our knowledge, only one study has examined the moderating effect of emotion regulation self-
efficacy on negative outcomes associated with valuing happiness. Fergus and Bardeen (2016) examined the nature of relations among measures of valuing happiness, emotion regulation self-efficacy, and depressive symptoms in an adult sample from the United States ($N = 439$). They found that higher happiness emotion goals were related to higher levels of depressive symptoms, but only among those with relatively lower levels of emotion regulation self-efficacy.

In the present study, we sought to replicate the moderation effect observed by Fergus and Bardeen (2016). Specifically, we hypothesized that there would be a significant positive relationship between happiness emotion goals and depressive symptoms, but only among participants with relatively lower levels of emotion regulation self-efficacy. We also sought to extend the work of Fergus and Bardeen by determining whether the noted interaction effect was specific to depressive symptoms or may have transdiagnostic value. As such, we included a measure of generalized anxiety symptomatology in the present study for use as an outcome variable. We chose generalized anxiety as the second outcome variable because (a) higher happiness emotion goals (McGuirk, Kuppens, Kingston, & Bastian, in press) and lower emotion regulation self-efficacy (Backenstrass et al., 2006) independently predict higher levels of anxiety symptoms, and (b) of the relatively high level of comorbidity between depressive and generalized anxiety symptoms (Borsboom, Epskamp, Kievit, Cramer, & Schmittmann, 2011). In other words, the most systematic approach to determining the transdiagnostic nature of the proposed interaction is to examine the interaction effect in relation to maladaptive psychological outcomes. In following a systematic approach, outcomes that are more related should be examined first. One would then move from more- to less-closely related outcomes at each successive step in a program of research.

Method
Participants and Procedure

General population adults ($N = 504$) were recruited via an online crowd sourcing site, (i.e., Amazon Mechanical Turk [MTurk]) to complete a battery of self-report measures. Individuals from the general population can access MTurk from MTurk’s internet portal. They then choose which tasks/studies they would like to complete in exchange for financial compensation. Data collection took place over the course of three days. MTurk samples are often more diverse than American undergraduate samples and have been shown to produce high quality data (Buhrmester, Kwang, & Gosling, 2011; Casler, Bickel, & Hackett, 2013). The average age of participants was 36.63 years ($SD = 11.82$, range 18-65). The majority of the sample identified their race as White (79.6%), followed by Black (8.1%), Asian (6.9%), Other (3.8%), American Indian/Alaska Native (.8%), and Native Hawaiian or Other Pacific Islander (.8%). Additionally, 9.5% of the sample identified their ethnicity as Hispanic or Latino.

Research procedures were approved by the local institutional review board prior to recruitment. Participants could complete the study from any computer with internet access. Participants were paid $1.50 upon study completion, an amount which is consistent with precedence for paying MTurk workers in similar questionnaire studies (Buhrmester et al., 2011).

Measures

Happiness emotion goals were assessed via the Valuing Happiness Scale (VHS; Mauss et al., 2011), a 7-item self-report measure. Items are rated on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree). Higher scores indicate greater happiness emotion goals. Example items include: *Feeling happy is extremely important to me,* and *To have a meaningful life I need to feel happy most of the time.* The VHS has demonstrated adequate psychometric properties,
including internal consistency and convergent validity (Ford et al., 2014). Scores on the VHS ($M = 27.86, SD = 8.31, range = 7-49$) demonstrated adequate internal consistency in the present study ($\alpha = .79$).

Emotion regulation self-efficacy was assessed using the Strategies subscale of the Modified Difficulties in Emotion Regulation Scale (M-DERS Strategies; Bardeen, Fergus, Hannan, & Orcutt, 2016). The M-DERS was developed to address psychometric limitations of Gratz and Roemer’s (2004) original measure (see Bardeen et al., 2016; Bardeen, Fergus, & Orcutt, 2012; Lee, Witte, Bardeen, Davis, & Weathers, 2016). The Strategies subscale consists of six items (e.g., *When I’m upset, I believe that there is nothing I can do to make myself feel better*) rated on a 5-point scale ranging from 1 (almost never) to 5 (almost always). Higher scores on the M-DERS Strategies subscale are indicative of relatively lower emotion regulation self-efficacy (e.g., Bardeen & Stevens, 2015; Fergus, Bardeen, & Orcutt, 2013). The M-DERS strategies subscale has demonstrated adequate psychometric properties, including internal consistency and convergent validity with measures of parallel constructs (i.e., Generalized Expectancy for Negative Mood Regulation Scale; Bardeen et al., 2016; Fergus et al., 2013). Scores on the M-DERS Strategies subscale ($M = 11.97, SD = 6.41, range = 6-30$) exhibited adequate internal consistency in the present study ($\alpha = 0.94$).

Depressive symptoms were assessed via the Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995). The DASS-21 Depression Scale consists of 7 self-report items (e.g., *I felt that life was meaningless*) rated on a 4-point scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time). Higher scores indicate higher levels of depressive symptoms. The DASS-21 Depression Scale has demonstrated adequate psychometric properties, including internal consistency and construct validity (Antony, Bieling, Cox, Enns, &
Swinson, 1998; Henry & Crawford, 2005; Lovibond & Lovibond, 1995). Scores on the DASS-21 Depression Scale ($M = 4.44$, $SD = 5.37$, range $= 0-21$) exhibited adequate internal consistency in the present study ($\alpha = 0.94$).

Generalized anxiety symptoms were assessed via the Generalized Anxiety Disorder – 7 item scale (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006), which is used to assess anxiety symptoms over a two week period. Items are rated on a 4-point scale from 0 (not at all) to 3 (nearly every day). Higher scores indicate higher levels of generalized anxiety symptoms. Example items include: Being so restless that it is hard to sit still, and Worrying too much about different things. The GAD-7 has demonstrated adequate psychometric properties, including evidence of internal consistency and construct validity (Mills et al., 2014 Spitzer et al., 2006). GAD-7 scores ($M = 5.15$, $SD = 5.37$, range $= 0-21$) exhibited adequate internal consistency in the present study ($\alpha = 0.94$).

Results

Regression Models

Two hierarchical regressions were conducted to examine study hypotheses. Predictor variables (i.e., VHS and M-DERS Strategies) were mean centered and entered into the first step of each model (Aiken & West, 1991). DASS-Depression and GAD-7 served as outcome variables in their respective models. An interaction term, calculated as the product of the centered predictors (VHS by M-DERS Strategies) was entered as a predictor variable in the second step of each model. Significant interaction effects were further explored via simple slopes analysis (Aiken & West, 1991). Simple slopes analysis consists of constructing two simple regression equations in which the relationship between the predictor variable and the outcome
variable is tested at both high (+1 SD) and low (-1 SD) levels of the moderating variable (i.e., M-DERS Strategies).

**Predicting depressive symptoms.** In the first step of the regression model, VHS ($\beta = .04, p = .08$) and M-DERS Strategies ($\beta = .58, p < .001$) explained a significant amount of variance in DASS-21 Depression ($R^2 = .52, p < .001$; see Table 1). As predicted, the interaction term (VHS by M-DERS Strategies) significantly predicted DASS-21 Depression ($\beta = .07, p = .04$) and accounted for a significant amount of unique variance in this outcome variable ($\Delta R^2 = .004, p = .04$). Results of the simple slopes analysis indicated that the positive association between VHS and DASS-21 Depression was significant at higher ($\beta = .14, p = .008$), but not lower ($\beta = .00, p = .95$) levels of M-DERS Strategies.

**Predicting anxiety symptoms.** In the first step of the regression model, VHS ($\beta = .12, p < .001$) and M-DERS Strategies ($\beta = .64, p < .001$) explained a significant amount of variance in GAD-7 ($R^2 = .50, p < .001$; see Table 1). As predicted, the interaction term (VHS by M-DERS Strategies) significantly predicted GAD-7 ($\beta = .07, p = .04$) and accounted for a significant amount of unique variance in this outcome variable ($\Delta R^2 = .004, p = .04$). Results of the simple slopes analysis indicated that the positive association between VHS and GAD-7 was significant at higher ($\beta = .20, p < .001$), but not lower ($\beta = .06, p = .21$) levels of M-DERS Strategies.

**Discussion**

High scores on the Valuing Happiness Scale (VHS) are indicative of an extreme over-valuation of happiness. Individuals who score high on the VHS (a) believe that they should experience happiness as a matter of routine, (b) value day-to-day experiences based on the extent to which they perceive those experiences as producing happiness, and (c) believe that there is something wrong if they do not feel happy. Results from our first regression analysis are
consistent with Fergus and Bardeen (2016); participants with higher happiness emotion goals reported higher levels of depressive symptoms than those with relatively lower happiness emotion goals, but only among those with relatively lower levels of emotion regulation self-efficacy. An identical pattern of results was observed when generalized anxiety symptoms were substituted for depressive symptoms in the second regression model. Taken together, these findings suggest that individuals with unrealistic happiness emotion goals and low emotion regulation self-efficacy are prone to experiencing negative emotional states.

It seems likely that there is a bidirectional relation between the noted interaction effect and emotional distress. That is, with the repeated experience of emotional distress following failed attempts to attain unrealistic happiness emotion goals, one’s perception of their ability to alter emotional experience in the desired direction likely decreases. Such experiences may result in diminished emotion regulation self-efficacy and an even greater likelihood that unrealistically high happiness emotion goals will lead to long-term psychological distress. Although viewing emotion regulation self-efficacy as a moderator of the association between risk factors for psychological distress and negative psychological outcomes is consistent with previous research (Fergus & Bardeen, 2016; Fergus et al., 2013; Kashdan & Breen, 2008), data from the present study do not preclude the possibility that happiness emotion goals may impact emotion regulation self-efficacy. This in turn, may lead to negative psychological outcomes through emotion regulation self-efficacy. It will be important to test temporal hypotheses regarding study variables in future longitudinal and experimental studies.

Consistent with previous research (Fergus & Bardeen, 2016, Ford et al., 2014), the present results suggest that rigidly seeking happiness as a primary goal is an approach that could contribute to depression and anxiety. However, the present results add to this body of research by
clarifying that emotion goals operate in concert with emotion regulation self-efficacy to contribute to psychological distress. As such, the present findings contribute to assertions that it is important to target emotion regulation self-efficacy in the service of alleviating depressive symptoms (e.g., (Backenstrass et al., 2006; Davis, Andresen, Trosko, Massman, & Lovejoy, 2005) and negative affective states more generally (Cloitre, Koenen, Cohen, & Han, 2002). Importantly, commonly used treatment packages may already be targeting happiness emotion goals and emotion regulation self-efficacy simultaneously. For example, behavioral activation for treating depression (BATD; Jacobson et al., 1996; Lejuez, Hopko, Acierno, Daughters, & Pagoto, 2011) shifts goal pursuit from emotion goals toward enacting attainable behaviors that are consistent with one’s values irrespective of the immediate hedonic value. Over time, as clients have mastery experiences and participate in positively reinforcing activities, depressive symptoms remit. In this way, BATD reduces emphasis on happiness as the primary goal and increases the likelihood of mastery experiences that support emotion regulation self-efficacy. It may also be possible to directly target emotion regulation self-efficacy, as recent evidence suggests that individuals may experience goal consistent emotion outcomes by receiving positive feedback regarding emotion-regulation self-efficacy (Benfer, Bardeen, & Clauss, 2018; Bigman, Mauss, Gross, & Tamir, 2016).

The present study is not without limitations. Despite our use of a community sample of adults, considerable variability in DASS-21 Depression and GAD-7 scale scores was observed. For example, 37% of the sample reported depressive symptoms that were outside of the “normal” range identified by Lovibond and Lovibond (1995). Moreover, these scales were developed as quantitative measures, consistent with dimensional models for depression of anxiety (Crawford, Henry, Crombie, & Taylor, 2001; Spitzer et al., 2006). Although research
supports dimensional, rather than categorical, conceptualizations of anxiety and depression (Kollman, Brown, Liverant, & Hofmann, 2006; Prisciandaro & Roberts, 2005; Shear, Bjelland, Beesdo, Gloster, & Wittchen, 2007), we are limited in our ability to generalize study findings to those with diagnosable anxiety and mood disorders.

In reference to the analytic approach employed in this manuscript, some might suggest statistically controlling for general distress in our regression models. Although this is not an uncommon practice within a multivariate framework, we decided not to include a general distress variable as a covariate in multivariate analyses because of conceptual limitations in interpreting the resulting coefficients (Miller & Chapman, 2001). More precisely, it is conceptually unclear what generalized anxiety and depressive symptoms represent when the variance attributable to general distress is removed. Additionally, study findings may be limited by our use of an Internet sample. MTurk samples tend to be more diverse than undergraduate samples (Behrend et al., 2011), but may not be consistent with the makeup of the general population (Paolacci & Chandler, 2014). Thus, it will be important to replicate study findings in general population and clinical samples. Finally, because of the cross-sectional nature of our study design, we cannot make inferences about the temporal nature of relations among happiness emotion goals, emotion regulation self-efficacy, and anxiety and depression. As described, longitudinal and experimental designs can be used in the future to establish directional relations among these constructs.

Despite these limitations, this study contributes to our understanding of the relations among valuing happiness, emotion regulation self-efficacy, and depressive and anxiety symptoms. The present results suggest the possibility that noted interaction effects may have transdiagnostic value. However, it will be important to examine this effect in relation to other
forms of pathology in future research to make this determination. Importantly, study findings suggest that it may be important to target emotion regulation self-efficacy in the service of alleviating internalizing psychopathology.


Table 1. Hierarchical linear regressions with depression and generalized anxiety as the outcome variables.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Depression (DASS - Depression)</th>
<th>Generalized Anxiety (GAD-7)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S1</td>
<td>S2</td>
</tr>
<tr>
<td>ΔR² β</td>
<td>β</td>
<td>β</td>
</tr>
<tr>
<td>Step 1 (S1)</td>
<td>.519***</td>
<td>.493***</td>
</tr>
<tr>
<td>VHS</td>
<td>.06</td>
<td>.07*</td>
</tr>
<tr>
<td>M-DERS Strategies</td>
<td>.69***</td>
<td>.66***</td>
</tr>
<tr>
<td>Step 2 (S2)</td>
<td>.004*</td>
<td>.004*</td>
</tr>
<tr>
<td>VHS x M-DERS Strategies</td>
<td>.07*</td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 504. VHS = Valuing Happiness Scale; M-DERS Strategies = Modified Difficulties in Emotion Regulation Strategies Subscale.

*p < .05. **p < .01. ***p < .001.