RESEARCH ARTICLE

Savouring and Self-compassion as Protective Factors for Depression

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Abstract

Within positive psychology, researchers and clinicians vocalize the need to expand upon how the treatment for major depressive disorder is conceptualized and implemented. The impetus of the current study was to examine preliminary criteria for identifying savouring and self-compassion as protective factors for depression. Undergraduate students (N=133) completed a series of surveys at two points in time, 5 weeks apart. Results revealed that savouring and self-compassion were inversely related to depression scores cross-sectionally and prospectively. However, savouring was the only positive psychological variable to predict changes in depression scores across time. Cross-sectionally, savouring was also found to moderate the relation between negative life events and depression, such that the strength of the relation between negative life events and depression decreased when higher savouring was present. However, this same effect was not significant prospectively. There was no evidence, cross-sectionally or prospectively, that self-compassion moderated the relation between negative life events and depression. Taken together, results provide preliminary support for savouring as a protective factor for depressive symptoms. Mental health professionals should consider teaching savouring strategies to help at-risk clients stimulate and sustain positive affect as a means of preventing and reducing depressive symptoms. Copyright © 2016 John Wiley & Sons, Ltd.

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Keywords

savouring; self-compassion; depression; negative life events

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Introduction

Epidemiological studies characterize major depressive disorder (MDD) as a considerable societal burden, with an estimated prevalence rate of 350 million cases worldwide and an annual incidence rate of 3.0% (Ferrari et al., 2013a, 2013b; World Health Organization, 2012). Currently, MDD is the third leading burden of disease, accounting for 8.2% of years lived with disability and 2.5% of total disability-adjusted life years, a metric derived from the sum of years of life lost due to premature mortality and years of life with a disability (Ferrari et al., 2013a, 2013b). After adjusting for population increases, MDD is projected to be the leading burden of disease in 2030 (World Health Organization, 2012). MDD presents with a chronically intermittent life course, and despite the availability of numerous empirically validated psychopharmacological and psychotherapeutic treatments, clinicians are continually challenged to find effective methods for reducing MDD symptomology and preventing future depressive episodes (Farb, Irving, Anderson, & Segal, 2015). Specifically, research indicates that between 30% and 40% of individuals report few beneficial effects associated with antidepressant medication (Kornstein & Schneider, 2001), and less than 40% of those seeking treatment for the first time achieve remission of symptoms (Rush et al., 2006).

Consistent with the tenets of prevention science, barriers to remission are associated with a lack of consideration for strength-based factors, resources that promote advances in treatment even in the face of risk and resistance (Nash & Bowen, 2002). In line with this position, in the current study, we seek to identify protective factors for depression and evaluate the interactive effects between negative life events and two proposed protective factors in the prediction of depression across time. It is our hope that the study results will generate pathways by which clients can achieve full remission of depressive symptoms and marshal resilience resources to prevent relapse.
Negative life events, undesirable circumstances that pose a threat to cognitive, behavioural and/or interpersonal functioning, do not constitute a sufficient condition by which depressive symptoms arise (Spinovhoven et al., 2011). For instance, 50% of individuals who experience negative life events do not report symptoms or problem behaviours associated with mood difficulties, suggesting that a substantial amount of people can either successfully navigate through or at least tolerate the burden of negative life events without significant mood impairment (Monroe & Hadjiyannakis, 2002). Findings, such as these, prompt researchers to explore psychological characteristics that alter the course and nature by which negative life events are associated with depressive outcomes (Zuess, 2003). However, the mechanisms by which individuals employ positive psychological resources to decrease the debilitating effects of negative life events and minimize depression are relatively unknown. Investigating these mechanisms is key in elucidating pathways by which individuals build resilience to depressive outcomes (Bonanno & Diminich, 2013). We propose that two mechanisms, savouring and self-compassion, may contribute to an individual’s ability to modify and counteract the effects of negative life events as a means to thwart the onset of depressive symptoms.

**Savouring**

Savouring is an affective regulation tactic characterized by the propensity to focus and exert control over how individuals develop, intensify and sustain positive emotions (Bryant, 2003; Bryant & Veroff, 2007). For example, individuals often generate and enhance positive affect surrounding a vacation by employing savouring tactics such as anticipation, fantasizing and proactively constructing an enjoyable itinerary beforehand. Furthermore, they may also absorb and block distractions in favour of mindfully immersing themselves in the enjoyment of the current vacation activity. The potential benefits of savouring are well-outlined in the literature. Of note, research conducted on various populations consistently highlights savouring in the promotion of psychological well-being and the discontinuance of negative affective states, most prominently depression. Most cross-sectional studies report direct negative relations between savouring and different indices of depressive psychopathology (e.g., Bryant, 2003). Similarly, experimental investigations of savouring interventions reveal marked decreases by which participants report and express depressive symptoms (Hurley & Kwon, 2012).

Despite emerging evidence delineating the beneficial effects of savouring, research has yet to fully disentangle the links among negative life events, savouring and depression. However, researchers highlight variables that promote positive affective functioning, like savouring, as critical in the deterrence of depressive symptoms resulting from negative life events (McMakin, Siegle, & Shirk, 2011). According to the Broaden and Build Theory (Fredrickson, 2001), generating and extending positive emotions in the context of negative life events can undo or negate cardiovascular aftereffects and lingering emotions (e.g., frustration, fear) to promote quick recovery and flourishing. A handful of studies indirectly support this position. Through the manipulation of gratitude, a unique savouring response that sustains and enhances attention to positive emotions/experiences (Bryant & Veroff, 2007), Krejtz, Nezlek, Michnicka, Holas, and Rusanowska (2014) found a weaker within-person relation between daily stress and depressogenic adjustment for individuals who completed a gratitude intervention compared with participants in a control group. This finding suggests savouring strategies may offset the negative effects of stress to reduce overall risk to depression. Similarly, savouring through behavioural expression appears to modify the relation between negative life events and depression. For example, genuine behavioural expressions of savouring (i.e., smiling and laughing) when speaking about the death of spouse/partner at 6 months post-loss minimized interpersonal symptoms of grief and depression (i.e., isolation, psychomotor retardation, subjective feelings of hopelessness) at 25 months (Bonanno, 2008; Bonanno & Keltner, 1997).

Together, these findings provide strong support for the ‘undoing effects’ of savouring and suggest higher levels of savouring may weaken the relation between negative life events and depression.

**Self-compassion**

Self-compassion is an emotional regulation tactic marked by the propensity to activate kind and non-judgmental attitudes in the face of personal difficulties, feelings of inadequacy and perceptions of failure (Neff, 2003a). Individuals who exhibit high levels of self-compassion often generate positive emotions (e.g., peacefulness, calmness, contentment) that contribute to higher rates of psychological well-being and life satisfaction (Neff, Kirkpatrick & Rude, 2007a, 2007b). Alternatively, theorists postulate self-compassion as a protective factor against depression, a position supported by a large combined effect size for the inverse relation between self-compassion and depressive symptoms (MacBeth & Gumley, 2012). However, research exploring pathways by which self-compassion exerts its salutary effects on depression is only just emerging.

When employed, self-compassion can defuse the effects of negative life events as a means of minimizing risk for depression (Gilbert, 2006; Neff, 2011). Drawing from the social mentality theory (Gilbert, 1989), self-compassion may suppress threat systems commonly activated during bouts of psychopathology, including depression. Theorists highlight self-compassion facets, particularly kindness and forgiveness, as inhibiting agents,
variables that soothe stress systems and reduce the onset of depressive symptoms. Empirical backing for the protective effects of self-compassion is demonstrated in a number of recently published works. Self-compassion moderates how people react to distressing events. Specifically, higher self-compassion predicts lower reports of sadness and embarrassment in the face of real, remembered and imagined negative life events (Leary, Tate, Adams, Batts Allen, & Hancock, 2007). Finally, participants asked to complete a writing-based self-compassion task after recall of a shameful memory report reduced levels of depression compared with participants who completed a broad emotion-based expressive writing task (Johnson & O’Brien, 2013). This finding supplements previous research by suggesting individuals high in self-compassion not only recover from negative life events but do so in a way that minimizes overall risk to depression. Considering relevant theoretical and empirical findings, it is expected that high self-compassion scores will weaken the relation between negative life events and depression.

Traditional research on depression is grounded in the identification and the management of risk factors, an exclusive and restrictive approach that has largely failed to prevent such difficulties from emerging (Seligman & Csikszentmihalyi, 2000; Wood & Joseph, 2010). Thus, prevention science theorists stringently argue for the identification of protective factors as necessary and advantageous to increase remission rates of depressive symptoms and decrease the likelihood of relapse (Sin & Lyubomirsky, 2009; Watson & Naragon-Gainey, 2010). Moreover, there is an over-reliance on cross-sectional data, those that fail to consider the temporal relations between a proposed predictor and an outcome, in identifying protective factors for depression. Protective factors are methodologically defined as conditions that are directly associated with lower estimates of an outcome (i.e., depression) and for which there is evidence that the condition preceded the outcome (i.e., temporal precedence; Vagi et al., 2013). The identification of protective factors is also determined by a variable that counteracts the effects of stressful and tumultuous life experiences in the prediction of depression (Schrank, Brownell, Tylee, & Slade, 2014; Steca et al., 2014). Overall, consideration for temporal precedence and offsetting effects is necessary to help researchers and clinicians develop more effective primary-prevention approaches to depression (Cairns, Yap, Pilkington, & Jorm, 2014).

In the current study, we investigate (a) the direct associations between savouring/self-compassion and depression, (b) the antecedent effects of savouring and self-compassion on depression and (c) the moderating effects of savouring and self-compassion on the well-established relation between negative life events and depression. In light of applicable theory and empirical work, we hypothesized the following: (a) negative life events would be positively associated with depression across time; (b) savouring and self-compassion would be inversely associated with depression across time; (c) higher levels of savouring would reduce the relation between negative life events and depression; and (d) higher levels of self-compassion would reduce the relation between negative life events and depression.

**Method**

**Participants**

Two hundred and fifty-one undergraduate students from a large southeastern university were recruited to participate in a series of online surveys. The initial sample of participants consisted of 203 women (80.9%) and 48 men (19.1%) with a mean age of 21.30 (SD = 3.10) years. The majority of participants self-identified as European American (n = 136, 54.2%) or African American (n = 86, 34.3%). Participants were asked to complete two surveys over a 5-week period. The attrition rate between administrations was 44.63% with 139 students participating in both surveys. Of the 139 participants, six cases (4%) were removed because of missing data, resulting in a final sample of 133. The final sample consisted of 21 men (15.8%) and 112 women (84.2%), aged 18–27 (M = 21.0, SD = 1.54). The smaller ratio of men to women is consistent with other investigations using emerging adult samples (Johnson & O’Brien, 2013). In terms of ethnicity, the majority of the sample self-reported as European American (n = 79, 59.4%), with the remaining participants identifying as African American (n = 39, 29.3%), multiracial (n = 10, 7.5%), Asian American (n = 2, 1.5%), Mexican American (n = 1, 0.8%), Native American (n = 1, 0.8%) and international students (n = 1, 0.8%). Most participants indicated their sexual minority status as heterosexual (90%). About one in three students indicated that they were from rural communities, and the remaining participants were from urban areas. The majority (92%) reported being single as compared with married or divorced. All participants received two course credits for completing the surveys.

**Design**

The current study employed a short-term prospective design to examine the predictive validity of negative life events and positive psychological factors on depression. Unlike studies utilizing cross-sectional and retrospective designs, prospective investigations elucidate temporal relations (Voisin, Hotton, Tan, & DiClemente, 2013), an essential component in the identification of risk and protective factors (Cairns et al., 2014).

Participants completed a series of questionnaires at two time points. The interval between each survey administration was approximately 5 weeks. Haeffel et al. (2007) recommend shorter term intervals...
between survey administrations when examining longitudinal hypotheses associated with negative life events. Employing a narrow time frame between administrations is advantageous as participants are more likely to recall the frequency and resulting distress associated with recent negative life events. Overall, prospective designs, even short-term prospective designs, engender more accurate and valid results regarding the stability of important risk/protective-outcome relations (Ingram, Miranda, & Segal, 1998).

**Measures**

The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) is a 20-item self-report scale designed to assess depression symptoms in adult populations. Each item on the CES-D is measured on a four-point frequency scale (from 1 = rarely or none of the time to 4 = most or all of the time) with total scores ranging from 20 to 80. Higher scores indicate greater levels of depression. The CES-D has demonstrated good internal consistency with samples of college students (α = .87–.91; Hill, Yaroslavsky, & Pettit, 2015). The CES-D has also demonstrated excellent construct validity as evidenced by high correlations with anxiety, affective liability and distress intolerance (Pearson, Lawless, Brown, & Bravo, 2015).

In the current study, we examined the factor structure of the CES-D. Confirmatory Factor Analysis (CFA) revealed good fit for a higher order model with four established factors (Radloff, 1977; i.e. positive affect, depressed affect, somatic complaints/activity inhibition and interpersonal problems) and an underlying latent depression factor, RMSEA = .09, CFI = .91 and SRMR = .06, thus providing suitable evidence for the use of a CES-D total depression score. Internal consistency scores for the CES-D total score in first administration (α = .91) and second administration (α = .92) were excellent. The CES-D also demonstrated a solid test–retest reliability estimate (r = .74).

The Inventory of College Students’ Recent Life Experiences (ICSRLE; Kohn, Lafreniere, & Gurevich, 1990) is a 49-item self-report scale designed to assess the frequency of negative life events in a student’s college career. Examples of negative life events include conflicts with significant others, social rejection and struggling to meet one’s own academic standards. Each item on the ICSRLE is measured on a four-point scale (from 1 = not at all part of my life to 4 = very much a part of my life) with total scores ranging from 49 to 196. Higher scores indicate greater experiences with negative life events. The ICSRLE has evidenced good internal consistency (α = .91; Stolzfus & Farkas, 2012) and excellent construct validity with other measures of negative life events (Kohn et al., 1990). In the current study, the internal consistency scores for the ICSRLE in first administration (α = .94) and second administration (α = .95) were excellent. The ICSRLE also demonstrated a solid test–retest reliability estimate (r = .72).

The Savouring Beliefs Inventory (SBI; Bryant, 2003) is a 24-item self-report measure designed to assess the extent to which individuals savour positive experiences in their lives. Savouring is a multidimensional construct that consists of three subscales: anticipation, reminiscing and in the moment savoring. However, only a total score was calculated in the current study. Each item on the SBI is measured on a seven-point Likert scale (from 1 = strongly disagree to 7 = strongly agree) with total scores ranging from 24 to 168. High total scores are reflective of greater savouring beliefs. The SBI has been found to have good internal consistency (α = .89; Bryant, 2003). The SBI has also demonstrated excellent construct validity as evidenced by high positive correlations with gratification and self-esteem and inverse correlations with strain and depression (Bryant, 2003).

In our CFA of the SBI, a bi-factor structure was found to be the best fitting model and was only a fair fit overall, RMSEA = .09, CFI = .88 and SRMR = .07. In this model, items are allowed to load independently to an underlying savouring factor as well as to three uncorrelated savouring sub-constructs (anticipation, reminiscing and in the moment savouring). As with a higher order model, bi-factor models also generate evidence for the use of a total score (Neff, 2016). The internal consistency scores for the SBI total score in first administration (α = .95) and second administration (α = .96) were excellent. The SBI total score also demonstrated a solid test–retest reliability estimate (r = .77).

The Self-Compassion Scale (SCS; Neff, 2003b) is a 26-item self-report measure designed to assess levels of self-compassion in adult participants. Each item on the SCS is measured on a five-point scale (from 1 = almost never to 5 = almost always) with total scores ranging from 26 to 130. Higher total scores on this scale indicate greater levels of self-compassion and lower levels of self-judgment. The SCS has demonstrated good internal consistency (α = .92) and excellent construct validity as evidenced by high correlations with self-esteem (Neff, 2003b). Similar to the SBI, a CFA for the SCS revealed only a fair fit, RMSEA = .08, CFI = .87 and SRMR = .10, for a bi-factor model. Because the bi-factor structure demonstrated comparable fit with other models tested, we chose to retain it and use a total SCS score for our analyses. Neff (2016) has recommended this approach as she has contends that a bi-factor structure is the most representative model for conceptualizing self-compassion. The internal consistency scores for the SCS total score in first administration (α = .94) and second administration (α = .95) were excellent. The SCS score has also demonstrated a solid test–retest reliability estimate (r = .84).

Procedure

Before initiating data collection, the researchers submitted data the collection plan to the university’s Institutional Review Board (IRB), a federally mandated risk oversight committee. Institutional Review Board approval was obtained, and ethical guidelines were followed throughout the data collection process. After obtaining informed consent, participants volunteered to answer survey questions anonymously online via SurveyMonkey.com, which took approximately 50 min to complete. Participants constructed a personally meaningful and discrete code number that was used to connect their survey responses from one administration to the next. After the completion of the survey, all participants were debriefed and offered information regarding how to acquire free to low-cost mental health services in the area, if desired.

Plan of analysis

Two separate hierarchical regressions were used to test the study’s primary hypotheses, that is, protective factors associated cross-sectionally and prospectively with depression. Firstly, to examine cross-sectional main effects associated with T1 depression, step one of the regression included the predictor variables of T1 stressful life events and T1 self-compassion and T1 savouring, adjusting for all covariates (age, race, gender, marital status, sexual minority status and whether participants were from rural or urban communities). To examine cross-sectional interaction effects, the second step of the regression had all of the variables in the previous step in addition to two stressful life events by moderator variable (self-compassion and savouring) interaction terms. Longitudinal effects predicting T2 depression were similarly examined with the addition of controlling the effect of T1 depression. Thus, main and interaction effects in the longitudinal model can be interpreted as residualized change scores in depression. If the interaction terms in either models were significant and explained a significant amount of additional variance, conditional effects were probed. In this study, conditional effects are the effects of stressful life events on depression scores at levels of a given protective factor (i.e., moderator). One standard deviation (SD) below the mean, the mean and one SD above the mean were chosen to represent high, medium and low levels of a moderator, respectively. The significance of conditional effects was also tested.

Established SPSS macros was used to test these effects and aid in constructing figures (Hayes & Matthes, 2009).

An attrition analysis was also performed to determine if T1 predictor (stressful life events, self-compassion and savouring), outcome (depression) and covariate (age, gender, race, sexual minority status, relationship status and hometown setting) variables were related to participants’ completion of the follow-up assessment. This was accomplished by creating a T2 completion variable (0 = not completed; 1 = completed) and conducting a logistic regression with all variables predicting T2 completion. We found that no study variable significantly influenced T2 completion.

Results

Descriptive statistics and bivariate correlations between main study variables are shown in Table I. As indicated, study variables were all significantly related to each other in expected directions. Covariates were associated with these variables as follows (not tabled). European American students had lower rates of stressful life events than non-European American students at both time points ($r_s = -.26$ to $-.30$; $ps < .01$). Being female was associated with a higher degree of savouring at T2 ($r = .20$; $p < .05$). Age, race, sexual minority status and history of living in a rural community were not related to main study variables.

Table II presents the results of the hierarchical regressions. Cross-sectional effects on T1 depression were first explored through main effects of predictor variables controlling for all covariates in step one. As

Table I. Descriptives and bivariate correlations between variables (N=133)

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
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<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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</thead>
<tbody>
<tr>
<td>1. Stressful life events T1</td>
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<td></td>
<td></td>
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<tr>
<td>2. Stressful life events T2</td>
<td>.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Savouring T1</td>
<td>−.27</td>
<td>−.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Savouring T2</td>
<td>−.19</td>
<td>−.27</td>
<td>.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Self-compassion T1</td>
<td>−.42</td>
<td>−.37</td>
<td>.40</td>
<td>.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Self-compassion T2</td>
<td>−.38</td>
<td>−.41</td>
<td>.44</td>
<td>.48</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7. Depression T1</td>
<td>.66</td>
<td>.59</td>
<td>−.54</td>
<td>−.43</td>
<td>−.55</td>
<td>−.56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Depression T2</td>
<td>.44</td>
<td>.60</td>
<td>−.57</td>
<td>−.66</td>
<td>−.46</td>
<td>−.58</td>
<td>.74</td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>94.71 (20.65)</td>
<td>95.04 (21.91)</td>
<td>130.18 (22.54)</td>
<td>130.50 (24.26)</td>
<td>76.31 (18.46)</td>
<td>77.26 (19.21)</td>
<td>34.71 (10.07)</td>
<td>35.30 (10.48)</td>
</tr>
</tbody>
</table>

All correlations are significant ($p < .01$).
shown, savouring and self-compassion were negatively associated (squared semi-partial correlations $r^2 = .07$ and .04, respectively), and stressful life events were positively associated ($r^2 = .17$), with depression. These three main effects were significant ($p < .05$). In the second step, cross-sectional interaction effects were added to the model, and the stressful life events $\times$ savouring interaction term was significant ($p < .05$). The interaction was then probed for conditional effects. Figure 1 demonstrates the predicted effect of stressful life events on T1 depression when savouring was low, medium or high. It was found that stressful life events were significantly and positively related to depressive symptoms only when savouring was low ($B = .43$, 95% CI = [.22, .63]) or medium ($B = .33$, 95% CI = [.09, .56]) but not high, which is consistent with our hypothesis that higher levels of savouring are a protective factor that attenuates the stressful life events-depression association. However, in the presence of this effect, similar support was not found for self-compassion as a moderator. Finally, no covariate had a significant cross-sectional effect on the outcome (not tabled).

The second hierarchical regression explored whether or not our prospective associations predicted changes in depression over a short period of time. This second model predicting T2 depression was identical to the first with exception of controlling for T1 depression. Table II shows the large effect of T1 depression on T2 depression ($r^2 = .53$) in step one of the regression controlling for all covariates. The inclusion of T1 levels of stressful life events, savouring and self-compassion in step two explains a significant amount additional variance (from 55% to 59%; $p < .05$). Unlike cross-sectional effects, stressful life events and self-compassion were no longer significant predictors of depression (i.e., change in depression). However, savouring remained significant ($r^2 = .03$). Thus, despite such a short period of time, one in which depressive symptoms are not likely to fluctuate

<table>
<thead>
<tr>
<th>Variables</th>
<th>Predicting T1 depression</th>
<th>Predicting T2 depression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td>Predictors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stressful life events</td>
<td>.23</td>
<td>.91</td>
</tr>
<tr>
<td>Savouring</td>
<td>-.14</td>
<td>.28</td>
</tr>
<tr>
<td>Self-compassion</td>
<td>-.13</td>
<td>-.01</td>
</tr>
<tr>
<td>Interactions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLE*savouring</td>
<td>-.00</td>
<td>-.00</td>
</tr>
<tr>
<td>SLE*self-compassion</td>
<td>-.00</td>
<td>-.00</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.61</td>
<td>.66</td>
</tr>
<tr>
<td>Change in $R^2$</td>
<td>.05</td>
<td>.04</td>
</tr>
</tbody>
</table>

All models include covariates. Entries for predictors and interactions are unstandardized $B$’s. Bolded effects are significant ($p < .05$). Effects and confidence intervals (CI) that contain only zeros (.00 and −.00) were rounded to the nearest decimal and represent the direction of the effect (positive or negative).

Figure 1. Association between stressful life events and depression scores at T1 at varying degrees of savouring controlling for all covariates. The X-axis is centred at the mean of stressful life events, and the ends are −1 standard deviations (SD) and +1 SD, respectively.
tremendously, savouring still has an impact on depression, regardless of stressful life events and degree of self-compassion. Support was not found, nevertheless, for savouring or self-compassion as buffers of the negative short-term longitudinal effects of stressful life events on depression. Demographic covariates did not influence any longitudinal association.

Discussion

Consistent with the first two hypotheses, stressful life events were positively related to depression, and reports of savouring and self-compassion were inversely related to depression cross-sectionally and over a small period of time. These effects align well with previous research (Hurley & Kwon, 2012; Johnson & O’Brien, 2013). However, when considering the direct effects of T1 variables on depression at T2, different conclusions emerged. Of importance, savouring was the only T1 variable to directly account for unique variance in T2 depression scores. This finding satisfies two required conditions, inverse relation and temporal precedence, to determine savouring as a protective factor for depression (Vagi et al., 2013).

This study is the first to consider the prospective effects of savouring on change in depression scores and represents a step forward in determining how positive emotion regulation tactics can minimize the duration of short-term depressive symptoms. Consistent with prior research (Carl, Fairholme, Gallagher, Thompson-Hollands, & Barlow, 2014), our results suggest individuals who experience short-term depressive states report difficulties activating savouring, the ability to generate, intensify and sustain positive emotions. Without the use of savouring, individuals who report depressive features may experience delays in mood recovery, which in turn may increase vulnerability to more persistent and dysfunctional depressive outcomes (i.e., depressive episodes). Considering most individuals report some experience with mild and transient forms of depression at one point in his/her life, positive psychological interventions focusing on savouring may be a viable prevention strategy. Teaching individuals how to mindfully savour positive emotions in lieu of depressive symptoms may generate more intrapersonal and interpersonal support to alleviate pressing emotional concerns more expediently. For instance, recalling and sustaining attention towards empowered life images and memories (a savouring process termed Memory Building; Bryant & Veroff, 2007) may help individuals minimize depressive states by generating greater levels of coping resources (e.g., optimism, resilience, wisdom), speeding up cardiovascular recovery and eliciting support from friends and family (Tugade & Fredrickson, 2007).

Alternatively, negative life events and self-compassion scores at T1 did not directly explain unique variance in T2 depression scores after accounting for depression scores at T1, which given previous research (e.g., Monroe & Harkness, 2005; Raes, 2011) and the strong bivariate associations found in the current study, was surprising. However, we interpret these non-significant effects with caution. We cannot rule out the possibility that the time interval, 5 weeks, between survey administrations was a limitation. Although similar studies (e.g., Haefel et al., 2007) use comparable time intervals, the short window between survey administrations generated very high covariation between depression scores at T1 and T2. In this case, high covariance left little residual variance for predictors to account for in T2 depression scores. Residual variance was minimized further after considering savouring scores. Given these trends, it is recommended that future research prospectively evaluate the direct effects of negative life events and self-compassion on depression using longer time intervals between survey administrations. Depressive episodes can persist between 2 and 12 weeks (American Psychiatric Association, 2013). Therefore, designing longitudinal studies with a 4- to 6-month time interval may be advantageous in determining whether or not negative life events and self-compassion directly predict variance in depression scores.

A third consideration in identifying protective factors is determining whether or not a proposed variable counteracts the negative effects of stressful events to reduce risk for depression (Schrank et al., 2014; Steca et al., 2014). Thus, we examined the moderated effects of savouring and self-compassion on the relation between negative life events and depression cross-sectionally and prospectively. Evidence for our third and fourth hypotheses was mixed.

Cross-sectionally, savouring did interact with negative life events to account for a small amount of variance in depression scores. Although the interaction term appears small, only accounting for 5% of variance in depression scores, other survey-based studies regularly report and interpret comparable effects as practically meaningful (Haefel & Vargas, 2011). Notably, our results suggest in instances of high negative life events, higher levels of savouring buffer emerging adults against depressive symptoms. Upon initial examination, this finding supports the undoing hypothesis of Fredrickson’s Broaden and Build Theory (Fredrickson, 2001), which states positive affective stimulation and sustainment are effective solutions in minimizing the negative effects of stressful events on different emotional outcomes, like depression. However, we considered the moderated effects of savouring further through a prospective analysis. Surprisingly, results did not reveal a significant moderated effect for savouring at T1 on the short term longitudinal relation between negative life events T1 and depression T2. One possible explanation for this null effect is the patterns by which student samples
commonly report on psychological resources. Specifically, college student samples either experience higher levels of psychological resources or obscure difficulties marshalling psychological resources to create more positive expressions of themselves. As a result, normal variation within the moderating variables, as is commonly seen in clinical samples, is not likely to be achieved in student samples. This may be problematic given the protective qualities of savouring, generating and prolonging positive affect, are particularly useful in thwarting depression among individuals who tend to minimize the effects of positive emotions (Carl et al., 2014; McMakin et al., 2011). Such patterns in reporting may minimize the potential for detecting stronger interactive effects in the prediction of depression across a small timeframe. Future research may need to examine these associations using clinical samples.

Alternatively, we did not find significant moderated effects for self-compassion in either the cross-sectional or prospective models. These findings were quite surprising given the extensive literature base highlighting the salutary effects of self-kind and forgiving dispositions in managing stress and conflict (Gilbert, 2006; Neff, 2011). Two phenomena may explain our disparate findings. Firstly, we examined the moderated effects of self-compassion in the presence savouring. It is possible these two protective factors operate through similar mechanisms to reduce the association between stressful life events and depression. However, because savouring had a greater influence in this regard, the smaller effects of self-compassion as a buffering agent may have been masked. Secondly, using a generalized measure of self-compassion in favour of more delineated component measures may have limited our ability to detect significant results. The SCS furnishes a total score along with six dimensional scores. Given the smaller sample size and concerns regarding low reliability estimates (e.g., low number of items in each component score \(n=4-5\)), we decided to use a total score over underlying component scores. This could be problematic if these underlying dimensions differentially influence how individuals manage negative life events. For instance, underlying self-soothing/self-kindness components of self-compassion readily disarm overly critical and internalized responses to negative events (Neff, 2003a), perhaps more effectively than the common humanity-based and mindfulness-based components. To remedy these shortcomings, experimental mixed subjects designs focused more narrowly on self-soothing/self-kindness components of self-compassion are warranted.

Outside of the previously noted limitations, there are also some general limitations worth noting. Firstly, participants consisted of undergraduate psychology students enrolled in a regional university in the southeastern portion of the United States. The non-clinical nature of our sample generates some concern of how these findings will generalize to community and outpatient samples. Another limitation to the current study was the preponderance of women in our sample. Although this trend is not uncommon in research surveying college students, it did restrict our ability to evaluate potential gender-specific effects in our analyses. Future research should replicate these findings using more diverse and inclusive samples to ensure these results are stable across cultural and developmental groups. A third limitation was the correlational nature of the study. Correlational studies are limited given that causal statements about the relations among negative life events, depression and positive psychology factors cannot be inferred. Finally, model fit indices identified by CFA were only fair, especially for the SCS, which may limit the reliability of our conclusions. Future research may need to confirm our conclusions by using different factor structures of the chosen measures. In particular, verifying and employing multidimensional factor structures to the SBI and SCS assessments may generate unique findings that could strengthen, further clarify or modify our conclusions.

Nonetheless, these results provide preliminary support for savouring as a protective factor for depression. In terms of established criteria (Vagi et al., 2013), savouring demonstrated an inverse relation and temporal precedence in predicting depression scores. In addition, results highlighted partial support for the position that savouring moderates the association between negative life events and depression. At the cross-sectional level, negative life events were not related to depression scores when savouring was high. Although this effect was not replicated in our longitudinal analysis, we believe low power resulting from a reduced sample size negatively impacted our ability to detect significant results. Overall, our results offer more preliminary support for savouring than self-compassion as a protective factor. Mental health professionals should consider implementing savouring strategies (e.g., Memory Building) as a means of preventing and disrupting the maintenance of depressive symptoms among at-risk clients.

**Ethical statement**

The current study was self-funded.

**Conflict of interest**

The authors declare that they have no conflict of interest.


