Personality and Individual Differences 152 (2020) 109568

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

Mindfulness, self-compassion, and savoring: Factors that explain the relation between perceived social support and well-being

Jenna M. Wilson*, Audrey Weiss, Natalie J. Shook

West Virginia University, United States of America

ARTICLE INFO

Keywords:
Social support
Mindfulness
Self-compassion
Savoring
Well-being

ABSTRACT

Perceived social support has consistently been associated with better psychological well-being, but the pathway (s) through which social support increases positive psychological outcomes (e.g., life satisfaction) and reduces negative psychological outcomes (e.g., depression) remain unknown. Potentially, social support may encourage a more balanced, self-forgiving, and positive perspective, which may facilitate better well-being. We investigated the extent to which mindfulness, self-compassion, and savoring accounted for the relation between perceived social support and psychological well-being, as assessed by multiple outcome measures, in college students in the U.S. In Study 1 (N = 1024), greater perceived social support was indirectly related to lower levels of negative psychological well-being outcomes (i.e., depression, anxiety, dysfunctional attitudes) through mindfulness. In Study 2 (N = 228), we replicated and extended these findings. Perceived social support was significantly associated with greater mindfulness, self-compassion, savoring, and positive psychological well-being outcomes (i.e., psychological well-being, subjective happiness), as well as lower levels of negative psychological well-being outcomes (i.e., depression, perceived stress). Furthermore, mindfulness, self-compassion, and savoring each accounted for the association between perceived social support and these psychological well-being outcomes. These findings suggest three pathways through which perceived social support may improve psychological well-being.

Decades of research has consistently demonstrated that greater perceived social support is strongly associated with better psychological well-being and health outcomes (see Taylor, 2011, for a review). But, it is still unknown how perceived social support leads to these benefits. Feeney and Collins (2014a) proposed an integrative model of social support, suggesting that there are multiple pathways through which social support promotes well-being, such as increasing positive affect and self-efficacy, appraising events as valuable, and enhancing the ability to savor experiences. Conceptually, these pathways map on to aspects of mindfulness, self-compassion, and savoring, which are all associated with better well-being (e.g., Bluth, Campo, Futch, & Gaylord, 2017; Brown & Ryan, 2003; Bryant, 2003). However, little empirical research has tested this model. Therefore, the present study sought to provide empirical evidence for Feeney and Collins' (2014a) theoretical model by focusing on these three psychological constructs (i.e., mindfulness, self-compassion, and savoring) that closely align with the first three pathways of the proposed model.

Across two studies, the aims of the present research were 1) to investigate whether perceived social support is associated with mindfulness, self-compassion, and savoring, and 2) to determine whether these factors account for the association between perceived social support and better well-being. In Study 1, we utilized an existing dataset that included some variables of interest to test whether mindfulness was one potential pathway through which perceived social support was indirectly associated with lower levels of negative psychological well-being (i.e., depression, anxiety, dysfunctional attitudes). Study 2 provided a more extensive test of the hypothesized model, such that mindfulness, self-compassion, and savoring were examined as three pathways through which perceived social support was indirectly associated with greater positive psychological well-being (i.e., psychological well-being, subjective happiness) and lower negative psychological well-being (i.e., depression, perceived stress).

1. Social support

Perceived social support is broadly defined as the perception that one is cared for by others and has a reliable social network that can be turned to in times of need (Taylor, 2011). People can perceive support to be available from a variety of sources, such as family, friends, and significant others (Taylor, 2011). A large body of research has

* Corresponding author at: West Virginia University, Department of Psychology, PO Box 6040, Morgantown, WV 26506-6040, United States of America.
E-mail address: jw0097@mix.wvu.edu (J.M. Wilson).

https://doi.org/10.1016/j.paid.2019.109568
Received 12 April 2019; Received in revised form 13 August 2019; Accepted 17 August 2019
Available online 27 August 2019
0191-8869/

consistently found a positive association between perceived social support and psychological well-being, across a variety of mental health outcomes (e.g., Chu, Saucier, & Hafner, 2010). For example, greater perceived social support is associated with more positive feelings and life satisfaction, as well as less depression, anxiety, and stress (Klainin-Yobas et al., 2016; Siedlecki, Salthouse, Oishi, & Jeswani, 2014). The association between perceived social support and psychological well-being is robust and has been demonstrated across different age groups, races/ethnicities, and cultures (DeGarmo & Martinez Jr, 2006; Liu, Li, Xiao, & Feldman, 2014). Despite all of this consistent evidence, it remains unknown what mechanism(s) may explain this relation.

Feeney and Collins (2014a) proposed an integrative model of social support, in which support is a catalyst for promoting better well-being through eight categories of pathways: 1) emotional state, 2) self-perceptions, 3) appraisals of events, 4) motivational state, 5) situation-relevant behaviors and resources, 6) relational outcomes, 7) neural activation and physiological functioning, and 8) lifestyle behaviors. However, little empirical work has tested this theoretical model or specific pathways. Of particular interest, social support is proposed to amplify positive and dampen negative emotions, enhancing self-regulation (Feeney & Collins, 2014a, 2014b) and effective coping (Chen & Miller, 2012). Social support is also associated with increased self-efficacy and self-esteem (Feeney, 2007), which leads to more positive self-perceptions, and perceiving available support from others is suggested to help appraise experiences as meaningful and enhance positive feelings of events (Feeney & Collins, 2014a, 2014b). According to this model, perceived social support impacts psychological factors that affect the way individuals perceive themselves and the world around them, which protect and improve psychological well-being.

The first three pathways (i.e., emotional state, self-perceptions, and appraisals of events) in the Feeney and Collins (2014a, 2014b) model closely align with the psychological constructs of mindfulness, self-compassion, and savoring. Additionally, there is a substantial amount of empirical data linking each of these three constructs to better psychological well-being (e.g., Bluth et al., 2017; Brown & Ryan, 2003; Bryant, 2003). Potentially, perceived social support may promote the underlying psychological processes of mindfulness, self-compassion, and/or savoring, and these factors may explain the association between perceived social support and better well-being.

2. Mindfulness

Mindfulness is awareness of the present moment without judgment (Brown & Ryan, 2003). This awareness extends to a person's surroundings, thoughts, and feelings, without fixating on any one thing or labelling it as good or bad. Thus, cognitive appraisals are regulated, such that there is an enhanced objective evaluation of experiences (Brown & Ryan, 2003). Additionally, mindfulness allows for more adaptive coping and management of undesirable stimuli. Individuals reliably differ in trait mindfulness, or the ability to think in a mindful way on a day-to-day basis without practice or intervention (Brown & Ryan, 2003). Those higher in trait mindfulness report better emotional and behavioral self-regulation (Brown & Ryan, 2003; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007). There is a well-established literature linking mindfulness to better psychological well-being (e.g., Baer, Lykins, & Peters, 2012; Brown & Ryan, 2003).

According to Feeney and Collins (2014a), social support leads to better emotion-regulation, as well as increased positive affect and decreased negative affect. Further, social support promotes acceptance and effective coping when faced with stressors, i.e., challenges and problems are viewed as manageable and impermanent (Feeney & Collins, 2014a). These social support pathways resemble being more mindful. Potentially, social support may help to keep one centered and focused on the present, instead of being isolated and ruminating about the past or worrying about the future. Thus, mindfulness may be a mechanism that explains the relation between perceived social support and psychological well-being.

A couple of studies have examined the relation between mindfulness and social support. Both found that mindfulness was positively correlated with perceived social support, and mindfulness was a stronger predictor of psychological well-being (Klainin-Yobas et al., 2016) and emotional adjustment (Mettler, Carsley, Joly, & Heath, 2017) than social support. These studies suggest that there is a relation between trait mindfulness and perceived social support, and that mindfulness could be a stronger determinant of well-being than social support. However, it remains unknown whether mindfulness accounts for, at least in part, the relation between perceived social support and well-being.

3. Self-compassion

Self-compassion is showing concern and benevolence to oneself. It involves having self-kindness, a sense of common humanity, and a mindful perspective (Barnard & Curry, 2011). Although mindfulness is a component of self-compassion, the two constructs demonstrate unique predictive validity (Van Dam, Sheppard, Forsyth, & Earleywine, 2011). Self-compassion comes from building a positive view of the self, which one can then refer to when times are stressful (Barnard & Curry, 2011). Indeed, self-compassion is associated with positive self-esteem (Neff, 2003) and greater self-efficacy (Smeets, Neff, Alberts, & Peters, 2014). As such, one is better able to endure negative events and maintain better psychological well-being. Self-compassion is positively associated with subjective happiness and positive affect, and negatively related to stress, depression, and anxiety (Baer et al., 2012; Van Dam et al., 2011).

Social support is a strong predictor of self-esteem and self-efficacy (Friedlander, Reid, Shupak, & Cribbie, 2007; Karademas, 2006). Support from others encourages positive self-perceptions, such as being capable to achieve one's goals (Feeney, 2007) and acknowledging one's strengths (Feeney & Collins, 2014a). Two longitudinal studies demonstrated that perceived social support predicted recipients' feelings of capability to achieve their goals, which in turn predicted long-term self-esteem 6 and 12 months later (Tomlinson, Feeney, & Van Vleet, 2016). Social support from others may make positive thoughts about oneself more easily accessible, and consequently promote self-compassion (Bandura, 1977; Stallman, Ohan, & Chiera, 2018). Thus, self-compassion could be another factor that may explain the association between perceived social support and well-being.

Limited research has explored the relation between perceived social support and self-compassion. One study found that perceived social support was related to greater self-compassion (Neely, Schallert, Mohammed, Roberts, & Chen, 2009). Further, self-compassion was a stronger predictor of well-being, above and beyond perceived social support, although social support remained a significant predictor in the model. Another study found that *received* social support was associated with greater self-kindness, and self-kindness partially mediated the relation between greater *received* social support and less psychological distress (Stallman et al., 2018). Together, these studies provide initial evidence that self-compassion could be a mechanism that in part explains the association between perceived social support and well-being.

4. Savoring

Savoring is the ability to reminisce on, immerse in the moment of, or anticipate positive experiences (Bryant, 2003). It involves active regulation of positive feelings before and after an event, as well as the ability to enhance and maintain positive feelings (Bryant, 2003; Bryant & Veroff, 2007). Savoring is associated with greater life satisfaction, positive affect, and more frequent happiness (Bryant, 2003; Quoidbach, Berry, Hansenne, & Mikolajczak, 2010), as well as decreased depression and negative affect (Ford, Klibert, Tarantino, & Lamis, 2017).

To our knowledge, no research to date has empirically investigated the association between perceived social support and savoring.

However, it has been suggested that social support could encourage savoring (Feeney & Collins, 2014a). Social support often involves social sharing of positive experiences and accomplishments, which enhances positive mood associated with the event (Feeney & Collins, 2014a; Gable, Reis, Impett, & Asher, 2004; Reis et al., 2010). Social support also may promote engagement in life opportunities when they arise, leading to engagement in more positive experiences and feelings of joy or enthusiasm (Feeney & Collins, 2014a). Thus, social support may promote savoring by allowing avenues to share excitement, express positive emotions, and relive positive experiences. As savoring increases positive feelings and buffers against negative life events (Bryant & Veroff, 2007), it may account in part for the relation between perceived social support and better well-being.

5. Present research

Social support may in part confer benefits by enhancing mindfulness, self-compassion, and savoring, which promote and maintain well-being. To date, only one study to our knowledge has partly investigated this proposition. Stallman et al. (2018) used single-item assessments of being present in the moment (i.e., a component of mindfulness) and self-kindness (i.e., a component of self-compassion) as simultaneous mediators of the association between *received* social support and psychological well-being. Both being present and self-kindness partially accounted for the relation between greater *received* social support and better psychological well-being. However, using single items limits the construct validity and reliability of their measures (Cronbach & Meehl, 1955; Nunnally & Bernstein, 1978). Additionally, they investigated *received* social support as opposed to perceived support. This is an important distinction because the perception that help is available if needed is more strongly related to health outcomes compared to actual help that is received (Uchino, 2004, 2009). Despite these limitations, these findings provide initial evidence that mindfulness and self-compassion may be mechanisms that explain the relation between perceived social support and psychological well-being.

The purpose of this research was to implement a more rigorous design to comprehensively investigate the associations among perceived social support, mindfulness, self-compassion, savoring, and psychological well-being. The current studies employed widely used multi-item measures, and in some cases multiple measures, of mindfulness, self-compassion, and savoring that have shown construct validity and reliability in college student samples (Brown & Ryan, 2003; Bryant, 2003; Neff, 2003). Further, we assessed psychological well-being using a variety of both positive (i.e., psychological well-being, subjective happiness) and negative (i.e., depression, anxiety, dysfunctional attitudes, stress) psychological outcomes. Across two studies, we expected perceived social support to be positively associated with mindfulness, self-compassion, savoring, and positive psychological outcomes, as well as inversely associated with negative psychological outcomes. Furthermore, we expected mindfulness, self-compassion, and savoring to statistically account for the associations between perceived social support and psychological well-being.

6. Study 1

An existing dataset was available that contained several variables of interest: perceived social support, mindfulness, depression, anxiety, and dysfunctional attitudes. As a first step towards our larger research question, we utilized this dataset to test for initial evidence of mindfulness as a mediator of the association between perceived social support and psychological well-being. Based on previous research, we expected perceived social support to be positively correlated with mindfulness and negatively correlated with depression, anxiety, and dysfunctional attitudes. Mindfulness was also expected to be negatively correlated with depression, anxiety, and dysfunctional attitudes. Furthermore, we expected mindfulness to statistically account for the associations between greater perceived social support and less depression, anxiety, and dysfunctional attitudes.

6.1. Method

6.1.1. Participants and procedure

Participants were 1024 undergraduate students (77.5% female; 98.9% 18 years or older[1]) recruited from a university in the South Atlantic region of the U.S. Participants were 86.8% Caucasian/White, 6.6% African American/Black, 3.5% Hispanic, 2.9% Asian, and 0.2% Native American. Participants provided informed consent and then completed an online prescreening questionnaire for a larger study examining the efficacy of a brief behavioral activation intervention.[2] Data from the prescreening questionnaire were used for the purposes of the present study. Forty-nine participants who did not complete the measures of interest were excluded from the analyses.

6.1.2. Measures

6.1.2.1. Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). The MSPSS is a 12-item self-report measure of perceived social support from family, friends, and significant others. On a scale from 1 (*very strongly disagree*) to 7 (*very strongly agree*), participants rated how they felt about each item (e.g., 'I get the emotional help and support I need from my family'). A composite score was computed by averaging all items. Greater perceived social support was indicated by higher scores.

6.1.2.2. Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003). To assess participants' trait mindfulness, an abbreviated version of the 15-item MAAS, consisting of the first 11 items was used. On a scale from 1 (*almost always*) to 6 (*almost never*), participants rated the frequency with which they experienced each item (e.g., 'I find myself doing things without paying attention'). A mean score was computed, such that higher scores represented greater trait mindfulness.

6.1.2.3. Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996). To measure depressive symptoms within the past two weeks, the 21-item BDI-II was used. For each item, participants were asked to indicate the statement that best described the way they felt during the past two weeks, including the day of scale administration. For example, participants were asked to indicate how often they felt sadness from the following options: 0 ("*I do not feel sad*"), 1 ("*I feel sad much of the time*"), 2 ("*I am sad all of the time*"), or 3 ("*I am so sad or unhappy that I can't stand it*"). Items were scored on a scale from 0 to 3. A composite score was created by summing the items, such that higher scores reflected more depressive symptoms.

6.1.2.4. Beck Anxiety Inventory (BAI; Beck, Epstein, Brown, & Steer, 1988). The 21-item BAI was used to assess participants' experiences of symptoms related to anxiety within the past month. Items (e.g., 'fear of worst happening,' 'hands trembling') were rated on a scale from 0 (*not at all*) to 3 (*severely, it bothered me a lot*). A composite score was created by summing the 21 items, such that larger scores indicated the presence of more severe anxiety.

6.1.2.5. Dysfunctional Attitudes Scale – Short Form 1 (DAS – SF1; Beevers, Strong, Meyer, Pilkonis, & Miller, 2007). The DAS-SF1 is a 9-item

[1] Participants were not asked to report their exact age, and thus their mean age is not provided.

[2] The following measures were also included in the prescreening, but were not relevant to the present study: Attitudes Toward Seeking Professional Help, Acceptance and Action Questionnaire, and the Multidimensional Experiential Avoidance Questionnaire.

Table 1
Means, standard deviations, Cronbach's alphas, and bivariate correlations for all variables in Study 1.

Variable	1	2	3	4	5
1. Social support	–				
2. Mindfulness	0.26*	–			
3. Depression	−0.40*	−0.45*	–		
4. Anxiety	−0.27*	−0.34*	0.69*	–	
5. Dysfunctional attitudes	−0.31*	−0.42*	0.54*	0.41*	–
Mean	5.55	3.61	31.10	13.17	17.36
SD	1.09	0.87	10.43	10.78	4.34
α	0.92	0.87	0.93	0.93	0.85

Note. $N = 975$.
* $p < .001$.

measure used to assess cognitive distortions related to depression. Participants rated how they generally feel about themselves or their world (e.g., 'If I fail at my work, then I am a failure as a person') on a scale from 1 (*totally agree*) to 4 (*totally disagree*). All items were reverse coded and then summed. Higher scores reflected a greater degree of dysfunctional attitudes.

6.2. Results

Means, standard deviations, Cronbach's alphas, and bivariate associations among all key variables are presented in Table 1. Greater perceived social support was associated with higher levels of mindfulness, and lower levels of depression, anxiety, and dysfunctional attitudes. Greater mindfulness was associated with lower levels of depression, anxiety, and dysfunctional attitudes.

6.2.1. Mediation models

To investigate whether mindfulness mediated the association between perceived social support and the psychological well-being outcomes, three separate mediation analyses were conducted using 5000 bootstrapped samples with the PROCESS macro for SPSS (Preacher & Hayes, 2004). In all three models, perceived social support was entered as the independent variable, mindfulness as the mediator, and one of the psychological well-being outcomes (i.e., depression, anxiety, dysfunctional attitudes) as the dependent variable. No covariates were included. See Fig. 1 for the conceptual model tested.

6.2.1.1. Depression. Perceived social support explained a significant amount of variance in mindfulness (25.8%), and the overall model explained 53.7% of the variance in depressive symptomology, $F(2, 972) = 197.86$, $p < .001$. There was a significant indirect effect of perceived social support on depressive symptomology through mindfulness ($b = -0.911$, 95% CI [−1.192, −0.675]). After including the significant indirect path, the direct effect ($b = -3.84$, $p < .001$) between perceived social support and depressive symptomology was reduced ($b = -2.93$, $p < .001$), suggesting that the association between greater perceived social support and less depressive symptomology was partially accounted for by greater mindfulness.

6.2.1.2. Anxiety. The overall model explained 39.2% of the variance in anxiety symptomology, $F(2, 972) = 88.38$, $p < .001$. There was a significant indirect effect of perceived social support on anxiety through mindfulness ($b = -0.75$, 95% CI [−1.023, −0.522]). After including the significant indirect path, the direct effect ($b = -2.67$, $p < .001$) between social support and anxiety was reduced ($b = -1.93$, $p < .001$), suggesting that the association between greater perceived social support and less anxiety symptomology was partially accounted for by greater mindfulness.

6.2.1.3. Dysfunctional attitudes. The overall model explained 46.8% of the variance in dysfunctional attitudes, $F(2, 972) = 135.89$, $p < .001$. There was a significant indirect effect of perceived social support on dysfunctional attitudes through mindfulness ($b = -0.37$, 95% CI [−0.490, −0.274]). After including the significant indirect path, the direct effect ($b = -1.23$, $p < .001$) between perceived social support and dysfunctional attitudes was reduced ($b = -0.86$, $p < .001$), suggesting that the association between greater perceived social support and less dysfunctional attitudes was also partially accounted for by greater mindfulness.

6.3. Discussion

Study 1 provided preliminary evidence of the positive association between perceived social support and mindfulness. Both perceived social support and mindfulness were negatively related to depression, anxiety, and dysfunctional attitudes. More importantly, there was a significant indirect effect of perceived social support on all three measures of negative psychological outcomes through mindfulness. That is, individuals who had greater perceived social support scored higher in mindfulness, which partly accounted for the negative associations between perceived social support and depression, anxiety, and dysfunctional attitudes.

7. Study 2

The purpose of Study 2 was to conceptually replicate and extend the preliminary findings from Study 1 using different measures of psychological well-being and including self-compassion and savoring as mediators. It was expected that perceived social support would be positively correlated with mindfulness, self-compassion, and savoring. Further, social support, mindfulness, self-compassion, and savoring were expected to be positively correlated with psychological well-being and subjective happiness, as well as negatively correlated with depression and perceived stress. Additionally, mindfulness, self-

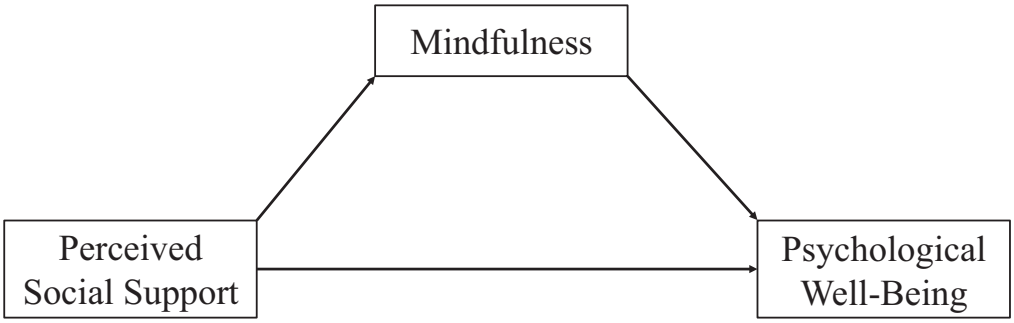

Fig. 1. Conceptual mediation model of Study 1, testing mindfulness as a mediator of the perceived social support and psychological well-being (i.e., depression, anxiety, and dysfunctional attitudes) relation.

compassion, and savoring were each hypothesized to statistically account for the relation between perceived social support and better well-being.

7.1. Method

7.1.1. Participants

Participants were 228 undergraduate psychology students (75.9% female; M_{age} = 19.84 years, SD = 2.75) from a university in the South Atlantic region of the US. Participants were 85.5% Caucasian/White, 7.5% Asian, 5.7% African American/Black, and 1.3% Hispanic. There were no missing data.

7.1.2. Procedure

Upon arrival, participants were seated at individual computers and provided informed consent. This study was part of a larger project, which involved a time perspective manipulation (i.e., participants wrote a short essay about a typical weekend in the past, present, or future). Participants then completed several questionnaires, including the primary measures of interest presented in a randomized order, except for demographic questions which appeared last (see Supplemental material for a list of all study measures).[34] Participants received extra credit for their time.

7.1.3. Measures

As described in Study 1, the MSPSS was used to assess perceived social support. The full version of the 15-iem MAAS was used to measure mindfulness. Participants provided basic demographic information.

7.1.3.1. Cognitive and Affective Mindfulness Scale – Revised (CAMS-R; Feldman et al., 2007). To assess present orientation and attention to internal experiences, participants completed a revised version of the 12-item CAMS. Participants rated each item (e.g., 'It's easy for me to keep track of my thoughts without judging them') on a scale from 1 (*rarely/not at all*) to 4 (*almost always*). One item was reverse coded, and a composite score was created by averaging the items. Higher overall scores indicated greater mindfulness.

7.1.3.2. Self-compassion (SC; Neff, 2003). The 26-item SC scale was used to assess how participants typically act towards themselves in difficult times. On a scale from 1 (*almost never*) to 5 (*almost always*), participants rated the frequency with which they behave in the manner stated in each statement (e.g., 'When times are really difficult, I tend to be tough on myself'). To compute a composite score, the negative items were reversed scored, and the sum across all items was computed. Higher scores indicated greater self-compassion.

7.1.3.3. Savoring Beliefs Inventory (SBI; Bryant, 2003). To assess participants' beliefs about their capacity to savor positive events, the 24-item SBI was used. On a scale from 1 (*strongly disagree*) to 7 (*strongly agree*), participants rated each item (e.g., 'I know how to make the most of a good time'). Twelve items were reverse scored, and a mean of all items was computed. Higher scores reflected greater perceived ability to savor.

7.1.3.4. Scale of Psychological Well-Being (SPWB; Ryff & Keyes, 1995). The SPWB is an 18-item scale used to assess well-being by measuring how participants feel about their lives and themselves. Participants rated the degree to which they agreed with 18 statements (e.g., 'for me, life has been a continuous process of learning, changing and growth') on a scale from 1 (*strongly disagree*) to 6 (*strongly agree*). A composite score was computed by averaging all items. Higher scores indicated greater psychological well-being.

7.1.3.5. Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999). To measure participants' subjective happiness, the 4-item SHS was used. Items "Compared with most of my peers, I consider myself…" were rated on a scale from 1 (*less happy*) to 7 (*more happy*). A mean score was computed, with higher scores representing greater subjective happiness.

7.1.3.6. Center for Epidemiological Studies – Depression Scale (CES-D; Radloff, 1977). The 20-item CES-D was used to assess how participants felt during the past week. Participants rated each item (e.g., 'I had trouble keeping my mind on what I was doing') on a scale from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). Four items were reverse scored, and then a composite score was computed by summing all items. Higher scores reflected the presence of more depressive symptomology.

7.1.3.7. Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983). The 14-item PSS was used to assess participants' feelings and thoughts during the last month. Participants rated the frequency with which they experienced each statement (e.g., "in the last month, how often have you felt nervous and 'stressed'?") on a scale from 0 (*never*) to 4 (*very often*). Seven items were reverse scored, and a composite score was computed by averaging all items. Higher scores indicated greater perceived stress.

7.2. Results

Means, standard deviations, Cronbach's alphas, and bivariate associations among all key variables are presented in Table 2. Perceived social support was positively associated with mindfulness, self-compassion, and savoring. Mindfulness, self-compassion, and savoring were all positively associated with each other. Greater perceived social support, mindfulness, self-compassion, and savoring were all associated with higher levels of psychological well-being and subjective happiness, as well as lower levels of depression and perceived stress.

7.2.1. Mediation models

To investigate whether mindfulness, self-compassion, and savoring mediated the relation between perceived social support and well-being, four parallel mediation analyses with 5000 bootstrapped samples were conducted using the PROCESS macro for SPSS. In all four models, perceived social support was entered as the independent variable; mindfulness, self-compassion, and savoring were entered as three simultaneous parallel mediators; and one of the psychological well-being outcomes was entered as the dependent variable. No covariates were included. See Fig. 2 for the conceptual model tested and Table 3 for the indirect effects. Because the MAAS and CAMS-R were strongly correlated (r = 0.55, p < .001), a composite mindfulness score was created (Ford & Shook, 2018). Each of the mindfulness measures were first standardized and then averaged (α = 0.89).[5]

[3] The following measures were included in the larger project, but were not relevant to the present study: Toronto Mindfulness Scale, Time Perspective Manipulation Check, Thinking About Time, Future Time Perspective, Positive Affect Negative Affect Schedule, and the Short Grit Scale.

[4] There was a significant difference in scores on the CAMS-R between the three groups (p = .048). Analyses were conducted controlling for time perspective condition; however, the pattern of results was similar. Thus, the results are reported without controlling for condition. None of the other primary variables significantly differed by condition.

[5] Additional analyses were conducted using the MAAS and CAMS-R as individual measures of mindfulness. All patterns of results were the same, except for the parallel mediation that tested the indirect effect of perceived social support on depression through the MAAS, self-compassion, and savoring. The indirect effect through the MAAS was not significant. However, when the MAAS

Table 2
Means, standard deviations, Cronbach's alphas, and bivariate correlations for all variables in Study 2.

Variable	1	2	3	4	5	6	7	8	9
1. Social support	–								
2. MAAS	0.23*	–							
3. CAMS-R	0.25*	0.55*	–						
4. Self-compassion	0.28*	0.50*	0.67*	–					
5. Savoring	0.45*	0.41*	0.54*	0.50*	–				
6. Psych well-being	0.46*	0.50*	0.64*	0.63*	0.73*	–			
7. Subjective happiness	0.32*	0.40*	0.60*	0.67*	0.63*	0.66*	–		
8. Depression	−0.34*	−0.45*	−0.64*	−0.61*	−0.63*	−0.68*	−0.65*	–	
9. Perceived stress	−0.30*	−0.53*	−0.71*	−0.73*	−0.53*	−0.67*	−0.63*	0.75*	–
Mean	5.75	3.54	2.56	75.14	5.41	4.50	4.75	18.54	2.57
SD	1.09	0.83	0.52	19.11	0.94	0.67	1.38	10.62	0.55
α	0.91	0.87	0.73	0.94	0.93	0.84	0.89	0.89	0.84

Note. MAAS = Mindful Attention Awareness Scale; CAMS -R = Cognitive and Affective Mindfulness Scale – Revised. $N = 228$.
* $p < .001$.

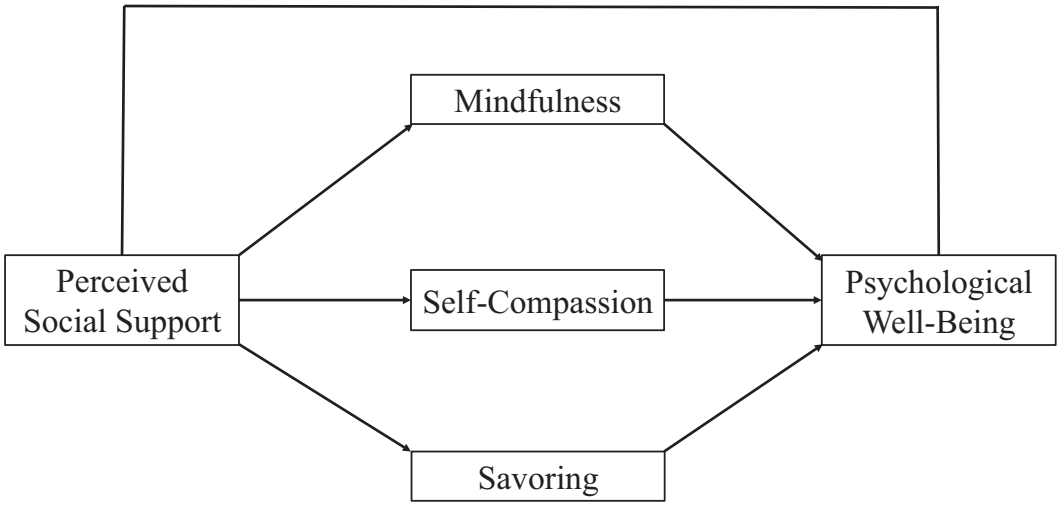

Fig. 2. Conceptual parallel mediation model of Study 2, testing mindfulness, self-compassion, and savoring as mediators of the perceived social support and psychological well-being (i.e., psychological well-being, subjective happiness, depression, and perceived stress) relation.

Table 3
Indirect effects of perceived social support on well-being through mindfulness, self-compassion, and savoring in Study 2.

Outcome	Mediators	Indirect effects			
		b	SE	95% LCI	95% UCI
Psychological well-being	Mindfulness	0.031	0.013	0.010	0.060
	Self-compassion	0.040	0.014	0.018	0.071
	Savoring	0.117	0.022	0.079	0.168
Subjective happiness	Mindfulness	0.023	0.022	−0.012	0.076
	Self-compassion	0.152	0.042	0.080	0.248
	Savoring	0.208	0.047	0.127	0.307
Depression	Mindfulness	−0.341	0.198	−0.854	−0.055
	Self-compassion	−0.860	0.300	−1.552	−0.388
	Savoring	−1.567	0.402	−2.502	−0.918
Perceived stress	Mindfulness	−0.033	0.013	−0.063	−0.014
	Self-compassion	−0.068	0.019	−0.110	−0.037
	Savoring	−0.027	0.013	−0.057	−0.005

Note. Beta coefficients are unstandardized, as recommended by Hayes (2013). LCI = lower confidence interval; UCI = upper confidence interval. $N = 228$.

(*footnote continued*)
was entered as an individual mediator, the indirect effect of perceived social support on depression was significant, replicating Study 1 results. The pattern of results remained the same when controlling for the time perspective manipulation.

7.2.1.1. Psychological well-being. Perceived social support explained significant proportions of variance in mindfulness (23.4%), self-compassion (28.1%), and savoring (44.5%). The overall model explained 81.5% of the variance in psychological well-being, $F(4, 223) = 110.62$, $p < .001$. There was an indirect effect of perceived social support on psychological well-being through all three mediators. After including all three significant indirect paths, the direct effect ($b = 0.284$, $p < .0001$) of perceived social support on psychological well-being was reduced ($b = 0.095$, $p = .0004$). This finding suggests that the association between perceived social support and greater psychological well-being was partially accounted for by greater mindfulness, self-compassion, and savoring.

7.2.1.2. Subjective happiness. The overall model explained 75.3% of the variance in subjective happiness, $F(4, 223) = 73.08$, $p < .001$. There was a significant indirect effect of social support on subjective happiness through self-compassion and savoring. There was not a significant indirect effect through mindfulness. After including the significant indirect paths of self-compassion and savoring, the direct effect ($b = 0.400$, $p < .0001$) of perceived social support on subjective happiness was no longer significant ($b = 0.018$, $p = .78$). Results indicate that both self-compassion and savoring mediated the relation between perceived social support and subjective happiness.

7.2.1.3. Depression. The overall model explained 72.7% of the variance in depressive symptomology, $F(4, 223) = 62.37$, $p < .001$. There was a

significant indirect effect of social support on depression through all three mediators. After including all three significant indirect paths, the direct effect ($b = -3.448$, $p < .001$) of social support on depression was no longer significant ($b = -0.680$, $p = .18$). This finding suggests that the association between higher perceived social support and lower levels of depressive symptomology was statistically accounted for by greater mindfulness, self-compassion, and savoring.

7.2.1.4. Perceived stress. The overall model explained 78.6% of the variance in perceived stress, $F(4, 223) = 89.90$, $p < .001$. There was a significant indirect effect of perceived social support on perceived stress through all three mediators. After including all three significant indirect paths, the direct effect ($b = -0.149$, $p < .001$) of perceived social support on perceived stress was no longer significant ($b = -0.021$, $p = .37$). Thus, greater mindfulness, self-compassion, and savoring accounted for the relation between greater perceived social support and less perceived stress.

7.3. Discussion

Evidence from Study 2 suggests that perceived social support is positively associated with mindfulness, self-compassion, and savoring. Social support and all three of these factors were related to greater psychological well-being and subjective happiness, as well as less depression and stress. More importantly, there was a significant indirect effect of perceived social support on all measures of well-being through mindfulness, self-compassion, and/or savoring. That is, individuals who had greater perceived social support scored higher in mindfulness, self-compassion, and savoring, which in turn accounted for the association between perceived social support and better psychological well-being.

8. General discussion

The current studies examined three potential pathways through which perceived social support is associated with better psychological well-being. Consistent with extant literature, findings across both studies showed that perceived social support was positively related to psychological well-being and subjective happiness, as well as negatively related to depression and anxiety symptomology, dysfunctional attitudes, and stress (Klainin-Yobas et al., 2016; Siedlecki et al., 2014). Study 1 showed that mindfulness partially accounted for the association between greater perceived social support and less depression, anxiety, and dysfunctional attitudes. Study 2 extended the preliminary findings by testing self-compassion and savoring as additional mediating factors, along with mindfulness, on multiple outcomes of well-being. The results from Study 2 suggest that all three factors contribute to the association between perceived social support and better psychological well-being. These findings are novel as very little research has empirically investigated the pathways through which social support may confer psychological benefits.

Consistent with prior research, perceived social support was positively associated with mindfulness in both studies (Klainin-Yobas et al., 2016; Mettler et al., 2017). The present findings add to the limited research linking perceived social support and mindfulness by replicating the findings across two different measures of mindfulness. Moreover, mindfulness statistically reduced the associations between greater perceived social support and less depression, anxiety, dysfunctional attitudes, and stress. Mindfulness also reduced the association between perceived social support and greater psychological well-being. However, mindfulness did not account for a significant amount of variance in the perceived social support-subjective happiness association, when self-compassion and savoring were included as parallel mediators. Previous work has demonstrated that the relation between mindfulness and positive affect is mediated by other factors, such as the use of approach coping (Weinstein, Brown, & Ryan, 2009), which may explain this exception.

Overall, these findings replicate previous work (Stallman et al., 2018), and provide stronger evidence for the role of mindfulness by utilizing two different multi-item measures of mindfulness that both have strong construct validity and reliability (Brown & Ryan, 2003; Feldman et al., 2007), rather than a single item assessment (Cronbach & Meehl, 1955; Nunnally & Bernstein, 1978). Social support may promote acceptance and lead to better emotion regulation, which may then facilitate an individual's ability to be nonjudgmentally aware in the present while also letting go of negative thoughts (Feeney & Collins, 2014a).

Our results also contribute to the growing evidence that self-compassion is associated with better well-being (Baer et al., 2012), as well as greater perceived social support. This finding also aligns with prior research, demonstrating that a single-item measure of self-kindness, a key component of self-compassion, was related to *received* social support (Stallman et al., 2018). Moreover, Stallman et al. (2018) found that self-kindness reduced the association between *received* social support and psychological distress. It has been posited that self-compassion builds during the experience of positive emotions and engagements, and outlasts experiences of negative events (Feeney & Collins, 2014b). Further, perceived support from others predicts feelings of being capable to achieve one's goals (Tomlinson et al., 2016). The present work expands on prior findings by showing that a multidimensional measure of self-compassion accounts for significant variance in the relation of perceived social support and multiple measures of well-being, independent of mindfulness and savoring.

Consistent with previous research, savoring was associated with better well-being (Bryant, 2003), and this finding was constant across several measures of well-being. Savoring and social support have both been shown to promote positive feelings (Eşkisu, 2014), although no research has empirically investigated the association between savoring and perceived social support. The present findings add to the literature by showing that savoring was positively associated with perceived social support. Savoring involves the use of positive emotion regulation strategies to enhance positive affect and decrease negative affect (Bryant & Veroff, 2007). These strategies often lead to more frequent and intense happiness (Bryant, 2003; Feeney & Collins, 2014a). Furthermore, in the present findings, savoring accounted for significant variance in the relation of perceived social support and multiple measures of well-being, and that variance accounted for is also unique from the variance accounted for by mindfulness and self-compassion. To our knowledge, this is the first study to investigate the relation between perceived social support and savoring, as well as test savoring as a factor that explains how perceived social support is related to better psychological well-being.

Feeney and Collins (2014a, 2014b) proposed a theoretical model with eight pathways by which social support leads to better psychological well-being. They suggest that social support promotes enhanced emotion-regulation and positive affect, increased self-efficacy and self-esteem, and appraisals of events as positive and meaningful. The present studies focused on the first three pathways (e.g., emotional state, self-perceptions, and appraisals of events), which conceptually manifest aspects of mindfulness, self-compassion, and savoring. Taken together, the findings from the present studies align with and provide empirical evidence for Feeney and Collins' (2014a) integrative model of social support by demonstrating how perceived social support is a catalyst for promoting better well-being through three unique psychological pathways. However, it is important to note that the larger theoretical model considers additional pathways (Feeney & Collins, 2014a), which were not explored in the present studies. As our data provided evidence of partial mediations, there are undoubtedly other variables that contribute to and may also account for the relation between perceived social support and better psychological well-being. Future research should empirically replicate the present findings, as well as extend our work by examining the other pathways.

Although we have suggested that social support enhances

mindfulness, self-compassion, and savoring, the link between these constructs may not be unidirectional. It is conceivable that greater mindfulness, self-compassion, and savoring may engender greater social support – perceived or received. That is, the associations may be reciprocal or bidirectional. In Study 1, alternative models whereby mindfulness was entered as the predictor variable and perceived social support as the mediator were also tested (see Supplemental material for alternative analyses). These models showed that perceived social support reduced the inverse relation between mindfulness and negative psychological outcomes. Thus, there was evidence of a bidirectional effect between perceived social support and mindfulness. However, it should be noted that previous research has found that mindfulness is a stronger predictor of both psychological well-being (Klainin-Yobas et al., 2016) and emotional adjustment (Mettler et al., 2017) than perceived social support. Future work should explore the causal and potentially bidirectional relation between perceived social support and trait mindfulness.

8.1. Implications for practitioners

Evidence from the present research has several implications for practitioners. Primarily, fostering perceived social support may have multifaceted effects. That is, by encouraging individuals to recognize different sources of support (e.g., family, friends, etc.), there may be consequent changes in mindfulness, self-compassion, and savoring. Each of these has important implications for improving and maintaining better psychological well-being. Cultivating mindfulness skills, such as the ability to be nonjudgmentally aware and let go of negative thoughts, results in more adaptive coping and management of undesirable stimuli (Brown & Ryan, 2003). Promoting self-compassion through nurturing kindness and acceptance towards the self can aid in the development of a positive view of the self to refer to during negative experiences (Barnard & Curry, 2011). Encouraging individuals to socially share and reminisce on positive experiences (i.e., savor) may enhance their regulation of positive feelings and more frequent experiences of happiness (Bryant & Veroff, 2007). Therefore, increasing awareness of social support and fostering the use of techniques related to mindfulness, self-compassion, and savoring may lead to greater psychological well-being and should be integrated into interventions.

8.2. Limitations and future directions

There were several limitations of these two studies. First, both studies used undergraduate convenient samples, which may limit the generalizability of the current findings. Second, the present studies were cross-sectional and correlational, which do not meet the temporal and causal assumptions of mediation analyses (Doty & Glick, 1998). Future research should attempt to replicate these findings using longitudinal and experimental designs to establish causal mechanisms. While there is evidence that a mindfulness-based stress reduction training can enhance self-compassion (Birnie, Speca, & Carlson, 2010), there is also evidence that a brief self-compassion intervention can increase mindfulness (Mantelou & Karakasidou, 2017; Smeets et al., 2014). Thus, future work should explore the temporal ordering of mindfulness, self-compassion and savoring. Third, both studies used only self-report measures, which can be subject to biases (e.g., social desirability) and raises concerns about shared method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Indeed, some of our variables were highly correlated, which parallels findings within the literature (e.g., Bryant, 2003), but indicate a narrow operationalization of psychological well-being and lack of discriminant validity of the constructs. Shared method variance may also inflate the size of these associations. Future work should include other, more broad measures of psychological well-being (e.g., Scale of Positive and Negative Affect; Diener et al., 2010) and utilize non-self-report measures of psychological well-being to replicate these findings.

8.3. Conclusions

Across two studies, our results highlight three psychological factors that are important for understanding the relation between perceived social support and better psychological well-being. To our knowledge, this is the first study to explore whether mindfulness, self-compassion, and savoring concurrently explain the relation between perceived social support and well-being. Moreover, our findings were consistent among multiple measures of psychological well-being. These findings have both theoretical and practical implications for well-being. Theoretically, it provides support for Feeney and Collins' (2014a) integrative model of social support, by suggesting that perceived social support may encourage mindfulness, self-compassion, and savoring, which promote well-being. Further, psychological well-being interventions or therapies that incorporate social support may be enhanced by focusing on the aspects of social support that aid in the development of being mindful, having self-compassion, and enhancing capabilities to savor.

Funding

On behalf of all authors, the corresponding author states that there is no financial support for the research, authorship, and/or publication of this article.

Declaration of competing interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.paid.2019.109568.

References

Baer, R. A., Lykins, E. L., & Peters, J. R. (2012). Mindfulness and self-compassion as predictors of psychological wellbeing in long-term meditators and matched non-meditators. *The Journal of Positive Psychology, 7*, 230–238. https://doi.org/10.1080/17439760.2012.674548.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191–215. https://doi.org/10.1037/0033-295X.84.2.191.

Barnard, L. K., & Curry, J. F. (2011). Self-compassion: Conceptualizations, correlates, & interventions. *Review of General Psychology, 15*, 289. https://doi.org/10.1037/a0025754.

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56*, 893–897. https://doi.org/10.1037/0022-006X.56.6.893.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck depression inventory-II. San Antonio. Vol. 78*, 490–498.

Beevers, C. G., Strong, D. R., Meyer, B., Pilkonis, P. A., & Miller, I. W. (2007). Efficiently assessing negative cognition in depression: An item response theory analysis of the Dysfunctional Attitude Scale. *Psychological Assessment, 19*, 199–209. http://doi.org/10.1037/1040-3590.19.2.199.

Birnie, K., Speca, M., & Carlson, L. E. (2010). Exploring self-compassion and empathy in the context of mindfulness-based stress reduction (MBSR). *Stress and Health, 26*(5), 359–371. https://doi.org/10.1002/smi.1305.

Bluth, K., Campo, R. A., Futch, W. S., & Gaylord, S. A. (2017). Age and gender differences in the associations of self-compassion and emotional well-being in a large adolescent sample. *Journal of Youth and Adolescence, 46*, 840–853. https://doi.org/10.1007/s10964-016-0567-2.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822–848. https://doi.org/10.1037/0022-3514.84.4.822.

Bryant, F. (2003). Savoring Beliefs Inventory (SBI): A scale for measuring beliefs about savouring. *Journal of Mental Health, 12*, 175–196. https://doi.org/10.1080/0963823031000103489.

Bryant, F. B., & Veroff, J. (2007). *Savoring: A new model of positive experience.* New York: Psychology Presshttps://doi.org/10.4324/9781315088426.

Chen, E., & Miller, G. E. (2012). "Shift-and-persist" strategies: Why low socioeconomic status isn't always bad for health. *Perspectives on Psychological Science, 7*, 135–158. https://doi.org/10.1177/1745691612436694.

Chu, P. S., Saucier, D. A., & Hafner, E. (2010). Meta-analysis of the relationships between

social support and well-being in children and adolescents. *Journal of Social and Clinical Psychology, 29*, 624–645. https://doi.org/10.1521/jscp.2010.29.6.624.
Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 385–396. https://www.jstor.org/stable/2136404.
Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52*, 281–302. https://doi.org/10.1037/h0040957.
DeGarmo, D. S., & Martinez, C. R., Jr. (2006). A culturally informed model of academic well-being for Latino youth: The importance of discriminatory experiences and social support. *Family Relations, 55*, 267–278. https://doi.org/10.1111/j.1741-3729.2006.00401.x.
Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010). New well- being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research, 97*(2), 143–156. https://doi.org/10.1007/s11205-009-9493-y.
Doty, D. H., & Glick, W. H. (1998). Common methods bias: Does common methods variance really bias results? *Organizational Research Methods, 1*, 374–406. https://doi.org/10.1177/109442819814002.
Eşkisu, M. (2014). The relationship between bullying, family functions, perceived social support among high school students. *Procedia-Social and Behavioral Sciences, 159*, 492–496. https://doi.org/10.1016/j.sbspro.2014.12.412.
Feeney, B. C. (2007). The dependency paradox in close relationships: Accepting dependence promotes independence. *Journal of Personality and Social Psychology, 92*, 268–285. https://doi.org/10.1037/0022-3514.92.2.268.
Feeney, B. C., & Collins, N. L. (2014a). A new look at social support: A theoretical perspective on thriving through relationships. *Personality and Social Psychology Review, 19*, 113–147. https://doi.org/10.1177/1088868314544222.
Feeney, B. C., & Collins, N. L. (2014b). A theoretical perspective on the importance of social connections for thriving. In M. Mikulincer, & P. R. Shaver (Eds.). *The Herzliya series on personality and social psychology. Mechanisms of social connection: From brain to group* (pp. 291–314). Washington, DC, US: American Psychological Association. https://doi.org/10.1037/14250-017.
Feldman, G., Hayes, A., Kumar, S., Greeson, J., & Laurenceau, J. P. (2007). Mindfulness and emotion regulation: The development and initial validation of the Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). *Journal of Psychopathology and Behavioral Assessment, 29*, 177–190. https://doi.org/10.1007/s10862-006-9035-8.
Ford, J., Klibert, J. J., Tarantino, N., & Lamis, D. A. (2017). Savouring and self-compassion as protective factors for depression. *Stress and Health, 33*, 119–128. https://doi.org/10.1002/smi.2687.
Ford, C. G., & Shook, N. J. (2018). Negative cognitive bias and perceived stress: Independent mediators of the relation between mindfulness and emotional distress. *Mindfulness, 10*(1), 100–110. https://doi.org/10.1007/s12671-018-0955-7.
Friedlander, L. J., Reid, G. J., Shupak, N., & Cribbie, R. (2007). Social support, self-esteem, and stress as predictors of adjustment to university among first-year undergraduates. *Journal of College Student Development, 48*, 259–274. https://doi.org/10.1353/csd.2007.0024.
Gable, S. L., Reis, H. T., Impett, E. A., & Asher, E. R. (2004). What do you do when things go right? The intrapersonal and interpersonal benefits of sharing positive events. *Journal of Personality and Social Psychology, 87*, 228–245. https://doi.org/10.1037/0022-3514.87.2.228.
Hayes, A. F. (2013). *Methodology in the social sciences. Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* New York: Guilford Press.
Karademas, E. C. (2006). Self-efficacy, social support and well-being: The mediating role of optimism. *Personality and Individual Differences, 40*, 1281–1290. https://doi.org/10.1016/j.paid.2005.10.019.
Klainin-Yobas, P., Ramirez, D., Fernandez, Z., Sarmiento, J., Thanoi, W., Ignacio, J., & Lau, Y. (2016). Examining the predicting effect of mindfulness on psychological well-being among undergraduate students: A structural equation modelling approach. *Personality and Individual Differences, 91*, 63–68. https://doi.org/10.1016/j.paid.2015.11.034.
Liu, H., Li, S., Xiao, Q., & Feldman, M. W. (2014). Social support and psychological well-being under social change in urban and rural China. *Social Indicators Research, 119*, 979–996. https://doi.org/10.1007/s11205-013-0534-1.
Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research, 46*, 137–155. https://doi.org/10.1023/A:1006824100041.
Mantelou, A., & Karakasidou, E. (2017). The effectiveness of a brief self-compassion intervention program on self-compassion, positive and negative affect and life satisfaction. *Psychology, 8*, 590–610. https://doi.org/10.4236/psych.2017.84038.
Mettler, J., Carsley, D., Joly, M., & Heath, N. L. (2017). Dispositional mindfulness and adjustment to university. *Journal of College Student Retention: Research, Theory & Practice*. https://doi.org/10.1177/1521025116688905.
Neely, M. E., Schallert, D. L., Mohammed, S. S., Roberts, R. M., & Chen, Y. J. (2009). Self-kindness when facing stress: The role of self-compassion, goal regulation, and support in college students' well-being. *Motivation and Emotion, 33*, 88–97. https://doi.org/10.1007/s11031-008-9119-8.
Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223–250. https://doi.org/10.1080/15298860309027.
Nunnally, J. C., & Bernstein, I. H. (1978). *Psychometric theory* (2nd ed.). New York, NY: McGraw-Hill.
Podsakoff, P., MacKenzie, S., Lee, J. Y., & Podsakoff, N. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology,* (5), 879–903. https://doi.org/10.1037/0021-9010.88.5.879.
Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36*, 717–731. https://doi.org/10.3758/BF03206553.
Quoidbach, J., Berry, E. V., Hansenne, M., & Mikolajczak, M. (2010). Positive emotion regulation and well-being: Comparing the impact of eight savoring and dampening strategies. *Personality and Individual Differences, 49*, 368–373. https://doi.org/10.1016/j.paid.2010.03.048.
Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385–401. https://doi.org/10.1177/014662167700100306.
Reis, H. T., Smith, S. M., Carmichael, C. L., Caprariello, P. A., Tsai, F. F., Rodrigues, A., & Maniaci, M. R. (2010). Are you happy for me? How sharing positive events with others provides personal and interpersonal benefits. *Journal of Personality and Social Psychology, 99*, 311–329. http://doi.org/10.1037/a0018344.
Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology, 69*, 719–727.
Siedlecki, K. L., Salthouse, T. A., Oishi, S., & Jeswani, S. (2014). The relationship between social support and subjective well-being across age. *Social Indicators Research, 117*, 561–576. https://doi.org/10.1007/s11205-013-0361-4.
Smeets, E., Neff, K., Alberts, H., & Peters, M. (2014). Meeting suffering with kindness: Effects of a brief self-compassion intervention for female college students. *Journal of Clinical Psychology, 70*, 794–807. https://doi.org/10.1002/jclp.22076.
Stallman, H. M., Ohan, J. L., & Chiera, B. (2018). The role of social support, being present, and self-kindness in university student psychological distress. *Australian Psychologist, 53*, 52–59. https://doi.org/10.1111/ap.12271.
Taylor, S. E. (2011). Social support: A review. In H. S. Friedman (Ed.). *Oxford library of psychology. The Oxford handbook of health psychology* (pp. 189–214). New York, NY, US: Oxford University Press.
Tomlinson, J. M., Feeney, B. C., & Van Vleet, M. (2016). A longitudinal investigation of relational catalyst support of goal strivings. *The Journal of Positive Psychology, 11*, 246–257. https://doi.org/10.1080/17439760.2015.1048815.
Uchino, B. N. (2004). *Social support and physical health: Understanding the health consequences of relationships.* New Haven: Yale University Press.
Uchino, B. N. (2009). Understanding the links between social support and physical health: A life-span perspective with emphasis on the separability of perceived and received support. *Perspectives on Psychological Science, 4*, 236–255. https://doi.org/10.1111/j.1745-6924.2009.01122.x.
Van Dam, N. T., Sheppard, S. C., Forsyth, J. P., & Earleywine, M. (2011). Self-compassion is a better predictor than mindfulness of symptom severity and quality of life in mixed anxiety and depression. *Journal of Anxiety Disorders, 25*, 123–130. https://doi.org/10.1016/j.janxdis.2010.08.011.
Weinstein, N., Brown, K. W., & Ryan, R. M. (2009). A multi-method examination of the effects of mindfulness on stress attribution, coping, and emotional well-being. *Journal of Research in Personality, 43*, 374–385. https://doi.org/10.1016/j.jrp.2008.12.008.
Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment, 52*, 30–41. https://doi.org/10.1207/s15327752jpa5201_2.