Experimentally enhancing self-compassion: Moderating effects of trait care-seeking and perceived stress

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ABSTRACT
Social mentality theory suggests that the ability to be reassuring and compassionate to oneself relies on the activation of care-seeking and caregiving mentalities. In this experimental study, college students were randomly assigned to recall memories of care-seeking, caregiving, a combination of care-seeking and caregiving, having fun (active control group), or a no-treatment control group. Participants completed the memory recall task twice per day for four days and were assessed on pre- and post-test levels of self-reassurance. Findings showed a moderating effect of individual differences in trait care-seeking and perceived stress. In response to the caregiving interventions, high care-seekers exhibited increased self-reassurance whereas low care-seekers exhibited decreased self-reassurance. In response to the care-seeking interventions, highly stressed individuals showed increased self-reassurance. Findings suggest that fostering self-compassion/self-reassurance can be achieved for certain individuals by activating the interpersonal processes involved in care-seeking and caregiving with others.

Self-reassurance and self-compassion are both terms used to describe an adaptive way of relating to oneself in the face of personal failures and shortcomings. Self-reassurance is defined as the ability to be kind, caring, and supportive towards oneself (Gilbert, Clarke, Hempel, Miles, & Irons, 2004), while self-compassion (Neff, 2003) is more broadly characterized as involving the components of being kind to oneself, viewing one’s difficulties as a shared human experience, and being mindful of one’s distress. Research on self-reassurance and self-compassion have mostly developed as separate lines of inquiry. Not surprisingly, findings have converged on the psychological benefits of having a reassuring and compassionate attitude towards the self. According to two recent meta-analyses, self-compassion is a strong predictor of psychological well-being (Zessin, Dickhäuser, & Garbade, 2015) and a robust protective factor against psychopathology (MacBeth & Gumley, 2012). Similarly, self-reassurance is related to greater positive affect and less stress (Gilbert et al., 2008) and lower levels of depressive and anxious symptomatology (Gilbert, Baldwin, Irons, Baccus, & Palmer, 2006; Gilbert et al., 2004).

Given its documented benefits, researchers and clinicians have begun to examine whether and how self-reassurance and self-compassion can be enhanced. In non-clinical populations, interventions studied so far have varied from brief experimental inductions (e.g. Leary, Tate, Adams, Batts Allen, & Hancock, 2007) to longer-term exercises (e.g. Kelly, Zuroff, & Shapira, 2009; Shapira & Mongrain, 2010) resulting in a variety of positive outcomes, including decreased negative affect and shame, as well as reductions in depression and increases in happiness. There now exist several comprehensive interventions aimed at cultivating self-compassion and self-reassurance, including Neff and Germer’s (2013) Mindful Self-Compassion program for community participants and Gilbert’s (2009) Compassion-Focused Therapy for psychiatric patients. Both interventions involve guided meditations and informal practices (e.g. letter writing, imagery) aimed at stimulating the ability to be kind and reassuring to the self. Preliminary results of these programs suggest that self-reassurance (Judge, Cleghorn, McEwan, & Gilbert, 2012) and self-compassion (Neff & Germer, 2013) can be increased with training and practice.

The interventions studied to date have involved explicit instruction and training in self-compassion. To our knowledge, there is only one study that examines how self-compassion can be promoted through indirect or contextual factors. In a series of four experiments, Breines and Chen (2013) demonstrated that activating caregiving schemas, either by recalling memories of giving support or actually giving support, increased state self-compassion. Thus, findings suggest that a reassuring and compassionate
attitude can be cultivated through indirect means. This is important given emerging evidence that certain individuals display considerable resistance or difficulty engaging in direct self-compassion interventions. For example, Robinson et al. (2016) showed that individuals low in trait self-compassion adopted a negative view of the self after undergoing a self-compassion induction; specifically, they characterized themselves as self-indulgent and lacking motivation and conscientiousness. Also, in a group therapy with chronic mental health patients, Gilbert and Procter (2006) observed that self-compassion work was met with fears and distress related to feelings of not deserving kindness.

Gilbert (1998, 2000) has theorized that self-compassion/reassurance relies on innate psychobiological systems, termed social mentalities, that originally evolved to guide care-seeking and caregiving with others. Analogous to behavioural systems described by Bowlby (1969/1982), the function of the care-seeking social mentality is to coordinate interactions with others who can provide support and resources necessary for survival, while the function of the caregiving social mentality is to coordinate the provision of support and resources to others who are in need. Humans have also evolved higher-order cognitive capacities that allow for intrapersonal or ‘self-to-self’ relating in the absence of external others. Social mentalities are thought to be activated when relating to the self in the same way they are activated when relating to others (Gilbert, 1998, 2000). Thus, when one is being self-compassionate, both care-seeking and caregiving mentalities are activated (Gilbert, 2005). The care-seeking mentality signals distress and need for care, and the caregiving mentality responds by generating and directing compassion inward.

Recent findings have provided support for Gilbert’s social mentality theory of self-reassurance/compassion. A cross-sectional study found that individuals with high trait levels of self-reassurance/compassion were those who were both high care-seekers as well as high caregivers (Hermanto & Zuroff, 2016). Similarly, a daily diary study showed that individuals who, on average across the week, gave more social support and received more social support than others were more self-reassuring (Hermanto, Zuroff, Kelly, & Leyman, 2017). Other studies have shown the link between self-compassion/reassurance and care-seeking and caregiving constructs separately. Self-compassion (Neff & McGehee, 2010) and self-reassurance (Irons, Gilbert, Baldwin, Baccus, & Palmer, 2006) are positively associated with attachment security, which suggests the willingness and ability to seek care from others. In terms of caregiving constructs, self-compassionate individuals endorse greater compassionate motivation toward their roommate (Crocker & Canevello, 2008) and greater concern for others in general (Neff & Pommier, 2012), and are perceived by their romantic partners to be more caring (Neff & Beretvas, 2012). Additionally, recalling memories of giving support or actually giving support to others can increase state self-compassion (Breines & Chen, 2013).

With the exception of the experimental study by Breines and Chen (2013), previous findings were correlational and do not permit conclusions about causality. There is also a lack of experimental studies that examine the contextual factors that promote self-compassion. Social mentality theory suggests that self-compassion arises from the activation of care-seeking and caregiving mentalities. Thus, the objective of the current study is to extend the findings of Breines and Chen (2013) in the context of social mentality theory. In the current study, participants’ levels of self-reassurance were assessed at pre- and post-intervention. An experimental methodology similar to Breines and Chen’s was used involving a memory recall and writing task intended to activate the following social mentalities: (1) caregiving (adapted from Breines and Chen); (2) care-seeking (novel condition); (3) combination of caregiving and care-seeking (novel condition); (4) having fun (active control group adapted from Breines and Chen); and (5) no-treatment control group (novel condition). We hoped to induce relatively enduring changes in self-reassurance rather than fleeting state changes as examined by Breines and Chen. Thus, participants completed the memory recall task twice per day across four days rather than a one-time manipulation. Lastly, we were interested in understanding for whom the interventions would be beneficial. Therefore, we examined individual differences in care-seeking, caregiving, and perceived stress as potential moderators.

We formulated a series of hypotheses based on theory and empirical findings. First, we expected the active conditions (care-seeking, caregiving, and combination) to increase self-reassurance more compared to the control conditions (having fun and no-treatment control). Second, we hypothesized that individual differences in trait care-seeking and caregiving would moderate the effect of condition. Social mentality theory (Gilbert, 2005) and empirical findings (Hermanto & Zuroff, 2016; Hermanto et al., 2017) suggest that the simultaneous activation of both care-seeking and caregiving mentalities facilitates self-reassurance. Thus, we hypothesized that the match of an individuals’ level of trait care-seeking or caregiving with a complementary intervention type would lead to greater levels of self-reassurance. Specifically, we expected high care-seekers in the caregiving conditions to exhibit greater self-reassurance compared to conditions without a caregiving component. Similarly, we expected high caregivers in the care-seeking conditions to exhibit greater self-reassurance compared to conditions without a care-seeking component. Previous findings demonstrated
deficits in self-reassurance to be predicted by the combination of low care-seeking and high caregiving (Hermanto & Zuroff, 2016; Hermanto et al., 2017). Thus, we expected low care-seekers in the caregiving conditions to exhibit decreased self-reassurance compared to conditions without a caregiving component. Lastly, we were interested in examining whether the interventions might be beneficial for individuals vulnerable to psychopathology. We used perceived stress as an indicator of vulnerability given the strong positive correlations between stress and depression and anxiety in college students (Roberti, Harrington, & Storch, 2006). When dealing with difficult life circumstances, self-reassurance may serve as a coping strategy to promote resilience. Therefore, we sought to determine which interventions were effective for highly stressed individuals. We did not have specific hypotheses about the pattern of effects given the exploratory nature of this final research objective.

Method

Participants

Participants were recruited through advertisements posted online on the university classifieds webpage, Facebook, and flyers posted around campus. Participants were required to be students of the university who were 18 years or older and fluent in written English. One-hundred and eighty-six students of the university who were 18 years or older and fluent in written English. One-hundred and eighty-six participants began the study. Five participants (2.7%) did not complete the post-test measures and were eliminated. Thirteen participants (7.0%) failed at least one of three attention check items embedded in the self-report measures and were omitted to eliminate possible sources of random responding. The final sample consisted of 168 participants (41 men, 127 women) with a mean age of 20.9 (SD = 3.28). Participants’ ethnicities were varied, including Caucasian (47.2%), Chinese (21.6%), South Asian (7.8%), Southeast Asian (6.0%), Korean (4.8%), Black (4.2%), Latin American (3.6%), Arab (1.8%), West Asian (1.8%), and Aboriginal (1.2%).

Procedure

The study took place over six days. On Day 1, participants came into the laboratory in groups of up to four and completed self-report measures of self-reassurance, stress, and trait care-seeking and caregiving while seated at individual computer stations. Then, they received an explanation from the research assistant about the experimental protocol for the next four days. To help participants adhere to the protocol, they completed an implementation intentions exercise in which they were asked to write down when and where they expected to complete the upcoming daily tasks of the study. Participants were randomly assigned by the survey software to one of the following five experimental conditions: (1) caregiving; (2) care-seeking; (3) combination of caregiving and care-seeking; (4) having fun (active control group to control for the general effects of a positive interpersonal interaction); and (5) no-treatment control group.

On Days 2, 3, 4, and 5, participants completed a memory recall writing task based on the procedure used by Breines and Chen (2013). Participants received an email at 9 am and another email at 5 pm with the survey link to the experimental task. The survey link was accessible between 9 am and 3 pm and between 5 pm and 11 pm. Participants were encouraged to complete the writing task on a computer. If participants were unable to do so, they were allowed to use their cell phones provided they were attentively focused on the task. Participants were shown the instructions:

On the next page, you will be asked to write about a memory of interacting with someone. It can be a recent event or something that happened long ago, but try to pick an event that best fits the instructions on the next page. Do not worry about proper spelling or grammar.

Then, participants were shown the appropriate prompt for their condition: (1) caregiving: ‘Think of a time when you were with someone who was upset and you gave them emotional support. By emotional support, we mean kindness, care, encouragement, reassurance or understanding’; (2) care-seeking: ‘Think of a time when you were upset and someone gave you emotional support’; (3) combination caregiving and care-seeking consisted of the caregiving prompt in the earlier part of the day and the care-seeking prompt in the later part of the day; (4) fun: ‘Think of a time when you had fun with someone’; (5) control: ‘You do not have to complete a writing task.’ Participants were asked to remember this event as vividly as possible and provided the following questions to help guide the writing process, ‘What happened? Where were you? Who was there? What did you do? What did you say? What were you thinking? What were you feeling?’ Participants completed the writing task in a free-form text box for the duration of at least three minutes. Because participants did the writing task repeatedly, they were asked to try to pick a different memory to write about each time.

On Day 6, participants received an email with the link to the post-test assessment of self-reassurance. They were thanked for their participation and provided information about receiving compensation in the laboratory. Participants were compensated according to their level of participation. They received $12 for the Day 1 pre-test assessment, $1 for each writing task (up to $2 daily for Days 2, 3, 4, and 5), and $10 for the Day 6 post-test assessment. Participants who completed all portions of the study received a $5 bonus. Therefore, participants were compensated up to $35 for full completion of the study.
Measures

Self-reassurance

The ability to be kind and compassionate to oneself was assessed using the Reassured Self subscale of the Forms of Self-Criticism/Self-Reassuring Scale (FSCRS; Gilbert et al., 2004). The Reassured Self subscale consists of 8 items (e.g. ‘I am gentle and supportive with myself’) rated on a 5-point Likert scale ranging from 0 (not at all like me) to 4 (extremely like me). The FSCRS has demonstrated good psychometric properties (Baião, Gilbert, McEwan, & Carvalho, 2014). In our study, Cronbach’s alpha was .87 for the subscale score.

Perceived stress

The extent to which participants perceived life circumstances as uncontrollable and overwhelming was assessed using the Perceived Stress Scale (PSS; Cohen & Williamson, 1988). The PSS is a 10-item measure rated on a 5-point Likert scale ranging from 0 (never) to 4 (very often). Items include, ‘In the last week, how often have you found that you could not cope with all the things that you had to do?’ and ‘In the last week, how often have you felt nervous and stressed?’ The PSS has been shown to exhibit good psychometric properties for assessment of college student samples (Roberti et al., 2006). Cronbach’s alpha in the current study was .86.

Trait care-seeking and caregiving

Care-seeking and caregiving variables were derived based on procedures by Hermanto and Zuroff (2016). Hermanto and Zuroff factor analyzed conceptually relevant care-seeking and caregiving composite scores with good internal consistency and construct validity. Thus, the care-seeking variable in the present study comprised measures of seeking support (emotional and instrumental), receiving support (emotional and instrumental), distress disclosure, and the inverse of fear of receiving compassion. The caregiving variable in the present study comprised measures of giving support (emotional and instrumental), compassionate love, and compassionate goals. Approximate factor scores were computed for the trait care-seeking and caregiving variables by taking the mean of the standardized scores of the constituent measures. The Cronbach’s alphas for the trait care-seeking and caregiving variables were .88 and .78 respectively. Constituent measures of trait care-seeking and caregiving are described below.

Receiving and giving social support. Experiences of receiving and giving social support were assessed using the 2-Way Social Support Scale (2-WSS; Shakespeare-Finch & Obst, 2011). The 2-WSS includes 20 items rated on a 6-point Likert scale ranging from 0 (not at all) to 5 (always). It consists of four factors of social support, including receiving emotional support (e.g. ‘When I am feeling down there is someone I can lean on’), receiving instrumental support (e.g. ‘There is someone who can help me fulfil my responsibilities when I am unable’), giving emotional support (e.g. ‘I give others a sense of comfort in times of need’), and giving instrumental support (e.g. ‘I am a person others turn to for help with tasks’). The four subscales have been shown to have moderate to high internal reliability and good convergent validity (Shakespeare-Finch & Obst, 2011). In the present study, Cronbach’s alphas were .93 for receiving emotional support, .70 for receiving instrumental support, .85 for giving emotional support, and .78 for giving instrumental support. Subscale scores for receiving emotional and instrumental support contributed to the care-seeking variable, and subscale scores for giving emotional and instrumental support contributed to the caregiving variable.

Compassionate love. Compassionate love for others (i.e. strangers and humanity) was assessed using the Compassionate Love Scale (CLS; Sprecher & Fehr, 2005). The CLS is a 21-item questionnaire rated on a seven-point Likert scale ranging from 1 (not at all true of me) to 7 (very true of me). Items include ‘I very much wish to be kind and good to fellow human beings’ and ‘I often have tender feelings toward people when they seem to be in need.’ The CLS has been found to have good convergent and discriminant validity (Sprecher & Fehr, 2005). Cronbach’s alpha for the CLS in our study was .94. The CLS total score contributed to the caregiving variable.

Compassionate goals. The motivation to support and benefit close others was assessed using the Compassionate Goals subscale of the Compassionate and Self-Image Goals Scale (CSIG; Crocker & Canevello, 2008). Items begin with the phrase, ‘In the past week, in the area of friendships, how much did you want to or try to … ’. The subscale consists of seven items (e.g. ‘make a positive difference in someone else’s life’) rated on a 5-point Likert scale ranging from 1 (not at all) to 5 (extremely). In the present study, Cronbach’s alpha was .76 for the subscale. The subscale score for compassionate goals contributed to the caregiving variable.

Distress disclosure. The tendency to disclose one’s personal distress was measured using the Distress Disclosure Index (DDI; Kahn & Hessling, 2001). The DDI is a 12-item questionnaire rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Items on the DDI include, ‘I try to find people to talk with about my problems’ and ‘When I feel upset I usually confide in my friends.’ The DDI has been shown to exhibit
good internal consistency, test-retest reliability, and criterion-related and construct validity (for a review, see Kahn, Huckle, Bradley, Glinski, & Malak, 2012). Cronbach's alpha in the current study was .95. The DDI total score contributed to the care-seeking variable.

Support-seeking. The tendency to seek social support during difficult times was assessed using the Emotional Support-Seeking subscale (e.g., 'If I am depressed I know who I can call to help me feel better') and the Instrumental Support-Seeking subscale (e.g., 'Information I get from others has often helped me deal with my problems') of the Proactive Coping Inventory (PCI; Greenglass, Schwarzer, & Taubert, 1999). The Emotional Support-Seeking subscale is comprised of five items and the Instrumental Support-Seeking subscale is comprised of eight items. Items are scored on a 4-point Likert scale ranging from 1 (not at all) to 4 (completely). The PCI has demonstrated good psychometric properties (e.g., Greenglass, 2002). In the present study, Cronbach’s alpha was .85 for both subscales. Subscale scores for seeking emotional and instrumental support contributed to the care-seeking variable.

Fear of receiving compassion. Fear of receiving compassion from others was assessed using the corresponding subscale of the Fears of Compassion Scales (FOCS; Gilbert, McEwan, Matos, & Rivas, 2011). The FOCS subscale consists of 13 items (e.g., 'If someone is being kind and caring towards me, I put up a barrier') rated on a 5-point Likert scale ranging from 0 (don't agree at all) to 4 (completely agree). In the present study, the subscale demonstrated good internal consistency with Cronbach's alpha of .90. The inverse score for fear of receiving compassion contributed to the care-seeking variable.

**Results**

**Descriptive statistics**

Means, standard deviations, and correlations are presented in Table 1. As expected, self-reassurance correlated positively with care-seeking and negatively with stress; however, there was no relationship between self-reassurance and caregiving. There was a moderate positive association between care-seeking and caregiving as previously documented (Hermanto & Zuroff, 2016). Additionally, care-seeking was negatively related to stress, while caregiving was unrelated to stress.

Table 2 present means and SD's, separately for the five conditions, for baseline self-reassurance, trait care-seeking and caregiving, stress, as well as adherence to the intervention (i.e., a count of completed writing tasks up to a maximum of eight). To test for equality of means across conditions, we conducted separate analyses of variance (ANOVA) for each of these variables (see Table 2). There were no significant differences between the conditions on baseline self-reassurance, trait care-seeking, stress, and adherence; thus, these variables do not confound our primary analyses. There was a difference across conditions for trait caregiving. Tukey’s tests indicated marginally greater trait caregiving in the caregive condition compared to the control condition, p = .06. To account for this difference in our primary analyses, we included caregiving as a covariate in the final model. Results of the final model remained unchanged with or without the inclusion of caregiving as a covariate.

Analytic strategy

We conducted analysis of covariance (ANCOVA) to examine residual change in post-test self-reassurance by adjusting for baseline self-reassurance scores. In all models described below, post-test self-reassurance served as the outcome variable. Our first set of analyses examined whether there was a main effect of condition on post-test...
self-reassurance. Our second set of analyses examined whether individual differences in trait care-seeking, trait caregiving, and perceived stress moderated the effect of condition on post-test self-reassurance. All continuous predictors were standardized to facilitate interpretation of results.

The general assumptions for linear models (i.e. linearity, homoscedasticity, independence, and normality of the error distribution) and specific assumptions for ANCOVA (i.e. homogeneity of regression slopes) were met.

**Main effect of condition**

Predictors in the model were pre-test self-reassurance and condition. There was no main effect of condition, $F(4, 162) = 0.18, p = .95$, indicating that post-test self-reassurance scores did not differ across conditions. Therefore, results do not support our hypothesis that the active conditions (care-seeking, caregiving, and combination) would lead to increased self-reassurance compared to the control conditions.

**Effect of condition moderated by trait care-seeking and caregiving**

Predictors in the model were pre-test self-reassurance, condition, care-seeking, caregiving, condition $\times$ care-seeking interaction, and condition $\times$ caregiving interaction. There was a moderating effect of care-seeking on condition in predicting post-test self-reassurance, $F(4, 152) = 2.67, p = .03$, partial $\omega^2 = .038$. There was no moderating effect of caregiving on condition, $F(4, 152) = 0.44, p = .78$.

**Effect of condition moderated by stress**

Predictors in the model were pre-test self-reassurance, condition, stress, and the condition $\times$ stress interaction. There was a moderating effect of condition $\times$ stress in predicting post-test self-reassurance, $F(4, 157) = 3.10, p = .02$, partial $\omega^2 = .048$.

**Final model with both moderating effects**

Prior models indicated separate moderating effects of condition by care-seeking and of condition by stress. To conduct a more stringent test in our final model, we included both moderating effects in predicting post-test self-reassurance. Predictors in the final model were pre-test self-reassurance, condition, care-seeking, stress, condition $\times$ care-seeking interaction, and condition $\times$ stress interaction. The overall model was significant, $R^2 = .754$, $F(15, 152) = 31.08, p < .001$.

Trait care-seeking interacted with condition to predict post-test self-reassurance, $F(4, 152) = 3.11, p = .02$, partial $\omega^2 = .048$. A series of post-hoc comparisons were conducted to examine the nature of the interaction. First, we examined differences in self-reassurance scores within each condition at low ($-1$ SD) and high ($+1$ SD) trait care-seeking. In the caregiving condition, high care-seekers ($M = 21.68, SE = 0.84$) had greater self-reassurance than low care-seekers ($M = 17.03, SE = 0.97$), $t(152) = 3.33, p = .001, d = .54$. Similarly, high care-seekers ($M = 21.62, SE = 0.81$) had greater self-reassurance than low care-seekers ($M = 18.28, SE = 0.90$) in the combination condition, $t(152) = 2.48, p = .014, d = .40$. There were no significant differences in self-reassurance between high and low care-seekers within the other conditions.

The moderating effect of trait care-seeking was evident in the two conditions with a caregiving component (i.e. the caregiving and combined conditions) and was not evident in the other three conditions without a caregiving component (i.e. the care-seeking, fun, and control conditions). Thus, as a next step in probing the interaction, we computed contrasts to test differences between the mean of the two caregiving conditions versus the mean of the three other conditions at low ($-1$ SD) and high ($+1$ SD) trait care-seeking (see Figure 1). High care-seeking individuals in the caregiving conditions ($M = 21.65, SE = 0.59$) had greater self-reassurance than their high care-seeking peers in the other conditions ($M = 19.91, SE = 0.48$), $t(152) = 2.32, p = .02, d = .38$. Conversely, low care-seeking individuals in the caregiving conditions ($M = 17.65, SE = 0.67$) had lower self-reassurance than their low care-seeking peers in the other conditions ($M = 19.57, SE = 0.44$), $t(152) = 2.44, p = .02, d = .40$. Finally, within the caregiving conditions, high care-seekers had greater self-reassurance than low care

![Figure 1. Interaction of trait care-seeking and condition in predicting post-test self-reassurance while controlling for pre-test self-reassurance.](image)

Notes: Estimated values were calculated for low ($-1$ SD) and high ($+1$ SD) care-seeking within the conditions. Error bars represent standard errors.
The present study sought to examine whether the activation of care-seeking and caregiving social mentalities would lead to increased self-reassurance. Overall, results demonstrated that recalling memories of care-seeking and caregiving with others influences the ability to reassuring to the self, albeit in a complex way with multiple moderating influences. Contrary to our primary hypothesis, there was no main effect of condition, indicating there were no differences in self-reassurance between the active conditions (care-seeking, caregiving, and combination care-seeking and caregiving) and the control conditions (having fun and no-treatment). However, the overall null finding masked the moderating effect of key individual differences. Results showed that certain interventions were beneficial for certain individuals leading to increased self-reassurance and were detrimental to other individuals leading to decreased self-reassurance.

Consistent with our first moderation hypothesis, the caregiving conditions led to increased self-reassurance for individuals high on trait care-seeking compared to the other conditions. In other words, high care-seekers who over the course of four days repeatedly recalled memories of caregiving had greater self-reassurance compared to their high care-seeking peers who recalled memories unrelated to caregiving. Thus, a caregiving intervention was particularly beneficial for those who were already high care-seekers. Bowlby (1988) suggested that it is only when one’s own attachment (or care-seeking) needs are met that one can engage in caregiving with others. By virtue of scoring high on trait care-seeking, these individuals...
are presumably activating their care-seeking mentalities on a regular basis. As a result of the intervention, these individuals were repeatedly activating their complementary caregiving mentalities, which led to increased self-reassurance. This finding is consistent with social mentality theory that suggests the simultaneous activation of both care-seeking and caregiving mentalities facilitates the ability to be compassionate to oneself.

The converse moderating effect of trait caregiving was not significant as we had hypothesized. In other words, a care-seeking intervention did not result in greater self-reassurance for those who were already high caregivers. It is possible that high caregivers may have had difficulties accessing memories of receiving care which is consistent with the notion of compassion fatigue, in which professional caregivers tend to disregard self-care when overly focusing on the needs of their patients (Figley, 2002). It is also important to note that the combination care-seeking and caregiving intervention did not lead to increased self-reassurance as hypothesized. By alternating between the care-seeking and caregiving memory recall, it is possible that the separate mentalities were not sufficiently activated to yield significant changes in self-reassurance.

Consistent with our third moderation hypothesis, low care-seekers in the caregiving interventions reported decreased self-reassurance compared to their low care-seeking peers in interventions without a caregiving component. Thus, the caregiving interventions appeared to be detrimental to individuals low in trait care-seeking. This experimental finding is consistent with previous cross-sectional (Hermanto & Zuroff, 2016) and daily diary research (Hermanto et al., 2017) showing that a deficit in self-reassurance for those who were already high caregivers. This finding is consistent with social mentality theory that suggests the simultaneous activation of both care-seeking and caregiving mentalities facilitates the ability to be compassionate to oneself.

Lastly, findings revealed another moderating effect in which recalling memories of care-seeking led to increased self-reassurance for highly stressed individuals. This is notable given the difficulty of being self-reassuring when stressed as demonstrated by the strong negative correlation between these two constructs in the present study. The stress buffering hypothesis of social support (Cohen, 1992; Cohen & Wills, 1985) suggests that social support may inhibit stress appraisals of negative events. When events are appraised as stressful, feelings of helplessness and inability to cope can arise. Recalling memories of receiving care from others may counterbalance that threat to self and serve as a reminder that one can turn to available others in times of distress. This acceptance by others may then facilitate self-acceptance, as perceived availability of social support has been shown to be positively correlated with self-compassion (Neely, Schallert, Mohammed, Roberts, & Chen, 2009). Additionally, recalling how others were supportive can cue similar supportive thoughts and emotions directed inward toward the self. By definition, self-reassurance can be conceptualized as a form of self-directed kindness and support.

Our findings have clinical implications for how to promote well-being and a more adaptive way of relating to the self. Broadly speaking, the present research complements findings showing that giving and receiving compassion can lead to benefits to the self, including enhanced self-esteem and positive mood (Sprecher & Fehr, 2006). More specifically, the present findings indicate that recalling memories of care-seeking and caregiving can lead to increased self-reassurance. This is consistent with imagery exercises utilized in Compassion-Focused Therapy (Gilbert, 2009) in which clients imagine receiving compassion from an ‘ideal compassionate figure’ as well as imagine giving compassion while embodying the ‘compassionate self.’ It also echoes recent advances in virtual reality technology in which individuals practice delivering compassion in a virtual body and then practice receiving that compassionate response in another virtual body (Falconer et al., 2014, 2016). Akin to our objective in the present study, the aim of these interventions is to indirectly stimulate the capacity for self-compassion and self-kindness in order to reduce distress. This is particularly important given that certain individuals struggle with fostering self-compassion through direct and explicit instruction (e.g. Gilbert & Procter, 2006; Robinson et al., 2006). Perhaps recalling memories of care-seeking and caregiving with others may be a less threatening and more accessible way of fostering self-compassion for such individuals. However, therapists should be attuned to individuals who have difficulties accessing positive memories of care-seeking and caregiving or lack such memories altogether. In these cases, interactions within the therapeutic relationship can provide opportunity for individuals to experience a model of caregiving as well as to receive and internalize care from the therapist. Furthermore, individuals can be encouraged to seek out and engage in opportunities for care-seeking and caregiving in their relationships with others. It is important, however, to balance the amount of
care-seeking and caregiving to avoid developing deficits in self-reassurance.

There are several limitations of the present study. First, although we used a chronic activation approach, the 4-day duration of the intervention was short. It would be worthwhile to examine the impact of a similar intervention over a longer period of time or to examine a stronger manipulation such as having participants behaviourally care-seek and caregive with others. Second, findings indicated that trait self-reassurance was amenable to change, extending past research that primarily examined state changes (e.g. Breines & Chen, 2013; Leary et al., 2007). However, without a follow-up assessment, we do not know for how long these changes in self-reassurance persist over time. Third, participants were encouraged to focus on the memory recall tasks for the full duration of the 3 minutes each time, but these were completed outside of the laboratory setting where many factors could have impacted attention. Future studies may consider using more structured prompts so that participants receive a more standardized intervention. Fourth, we did not examine whether characteristics of the recalled care-seeking and caregiving interactions differentially predicted self-reassurance. For example, research by Schwartz and Sendor (1999) showed that helping similar others versus dissimilar others fosters increased self-confidence and self-acceptance. Additionally, autonomous motivation for helping others and for receiving help predicts increased self-esteem while controlled motivation does not (Weinstein & Ryan, 2010). Future studies should examine the aspects of care-seeking and caregiving that may facilitate or impede self-compassion to further elucidate moderating effects. Fifth, the sample in the present study consisted entirely of college students. Future research should examine clinical populations or populations at risk of psychopathology to add to the present findings concerning perceived stress. Lastly, the study may have been underpowered to detect interaction effects that are small to moderate in magnitude. Future studies should aim to recruit larger numbers of participants to increase confidence in the robustness of the findings.

In conclusion, findings show that recalling memories of care-seeking and caregiving with others influences the capacity to be kind and caring towards oneself, but that the size and direction of such effects are strongly moderated by individual differences in trait care-seeking and perceived stress. In the caregiving interventions, high care-seekers exhibited increased self-reassurance whereas low care-seekers exhibited decreased self-reassurance. Findings are mostly consistent with the social mentality theory of self-reassurance/compassion (Gilbert, 2005), while also demonstrating the potentially detrimental effects of priming compulsive caregiving (Bowlby, 1977). Lastly, highly stressed individuals showed increased self-reassurance as a result of the care-seeking interventions. Thus, findings of the present study suggest how to foster a compassionate and caring way of relating to the self by activating the interpersonal processes involved in care-seeking and caregiving with others.

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