

# Health Psychology

## **Effects of Self-Compassion on Stress and Health Behaviors in Daily Life: A Randomized Controlled Trial**

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# Effects of Self-Compassion on Stress and Health Behaviors in Daily Life: A Randomized Controlled Trial

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**Objective:** Daily stress is closely linked to health behaviors in everyday life, yet few interventions have examined how self-compassion shapes the associations at the daily level. This randomized controlled trial evaluated whether a brief expressive-writing self-compassion intervention impacted daily stress, daily health behaviors, and stress-behavior relationships across 7 days. **Methods:** Participants were randomly assigned to either a self-compassion writing condition ( $N = 78$ ) or a control condition ( $N = 88$ ), followed by a 7-day daily diary assessing daily hassles, uplifts, eating, sleep, physical activity, and alcohol use. Self-compassion was measured at baseline and 1 week after completion of the daily diaries. **Results:** The manipulation moderated the associations between daily hassles and snacking and between daily uplifts and snacking. In the control condition, higher daily stress and daily positive experiences were associated with greater total and unhealthy snacking, whereas the associations were diminished or absent in the experimental condition. However, participants in the self-compassion condition reported shorter sleep duration on days characterized by higher uplifts. Multilevel mediation analyses revealed no direct or indirect effects of the intervention on daily stress or daily health behaviors. Mixed analyses of variance indicated that although self-compassion increased over time, the intervention condition did not have greater increases in self-compassion compared with the control condition. **Conclusions:** The findings provide initial evidence that a brief expressive-writing self-compassion intervention may buffer stress-behavior dynamics in daily life. Future research should focus on whether increasing the frequency of self-compassion practices can strengthen and sustain the effects over time and across diverse populations.

## Public Significance Statement

Daily stress can make it difficult for people to maintain healthy behaviors. This intervention found that a brief self-compassion writing task reduced the tendency for daily hassles and positive daily experiences to be associated with greater total and unhealthy snacking. These findings suggest that brief self-compassion writing exercises may help people navigate everyday challenges more effectively and could offer a simple, scalable approach to supporting adaptive behavioral responses in daily life.

**Keywords:** self-compassion, randomized controlled trial, daily diary, daily stress, health behaviors

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The study questions and analysis plan were preregistered on AsPredicted (AsPredicted #216910). Deidentified data are archived on Figshare at <https://figshare.com/s/a6ac46c7cc3e58290db8>. Additional study materials and analytic details are available from the corresponding author. The authors declare no conflicts of interest. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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Jinyi Liu served as lead for data curation, formal analysis, investigation, project administration, writing—original draft, and writing—review and editing and contributed equally to conceptualization, methodology, and visualization. Mark Conner served in a supporting role for conceptualization, formal analysis, methodology, project administration, supervision, and writing—review and editing. Daryl B. O'Connor served as lead for supervision and writing—review and editing, contributed equally to project administration, and served in a supporting role for conceptualization, formal analysis, and methodology.

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Self-compassion refers to responding to personal difficulties with kindness, recognizing that setbacks are part of the shared human experience, and holding painful thoughts and emotions in balanced, mindful awareness (Neff, 2003a). According to Neff's (2003b) dimensional model of self-compassion, a compassionate mindset is grounded in three counterparts: self-kindness versus self-judgment (treating oneself with kindness and understanding rather than self-criticism), common humanity versus isolation (recognizing that suffering is part of being human rather than feeling isolated), and mindfulness versus overidentification (holding difficult thoughts and emotions with balanced awareness rather than avoiding or exaggerating them). Self-compassion has been conceptualized within contemporary psychological theory as an adaptive way of relating to personal suffering, self-criticism, and perceived failure (Neff, 2003a, 2011). Although rooted in Buddhist perspectives emphasizing compassion toward suffering, self-compassion is now widely studied as an emotion-regulation and self-regulation resource that is associated with resilience, health, and well-being (Allen & Leary, 2010; Terry & Leary, 2011).

In other words, a self-compassionate person meets challenges with kindness, accepts struggles as being human, and manages undesired emotions without amplifying the negative impact. Such a supportive mindset is beneficial to reduce emotional reactivity, promote adaptive coping, and support healthier behavioral responses during stressful experiences. A body of research has demonstrated that individuals higher in self-compassion report lower levels of stress and self-criticism, engage in more adaptive coping strategies, and exhibit better overall psychological functioning (Allen & Leary, 2010; Ewert et al., 2021). Self-compassion is also associated with engagement in a broad range of health-related behaviors, including healthier eating patterns, greater physical activity, improved sleep, and reduced engagement in maladaptive responses during times of stress (Brown et al., 2021; Homan & Sirois, 2017; Hu et al., 2018; Liu et al., 2025; Phillips & Hine, 2021).

An important pathway in which self-compassion may support health is through its role in promoting effective self-regulation. By encouraging a balanced and understanding stance toward one's experiences, especially in times of suffering, self-compassion enables individuals to interpret challenging situations with greater clarity and perspective. This enhances emotional resilience under stress and promotes engagement in adaptive behaviors that can help maintain health-related goals (Allen & Leary, 2010; Leary et al., 2007; Terry & Leary, 2011). Such regulatory benefits fuel the ability to manage oneself and suggest that self-compassion may help individuals sustain adaptive health behaviors in the face of difficulty.

Furthermore, a large body of research has established that self-compassion is associated with stress and a broad spectrum of health behaviors. Meta-analytic findings indicate that higher self-compassion is linked with greater engagement in health-promoting behaviors such as healthier eating, greater physical activity, and better sleep, whereas lower self-compassion is associated with increased health-risk behaviors such as alcohol use (Phillips & Hine, 2021). A more recent meta-analysis shows that the associations between self-compassion and health-promoting behaviors and between self-compassion and health-risk behaviors are partially mediated by stress (Liu et al., *in press*).

In addition, observational studies linking self-compassion with stress and health behaviors suggest that it may serve as a

psychological buffer against the ways stress challenges health behaviors. For example, self-compassion attenuates the effects of perceived stress on sleep quality and sleep latency (Hu et al., 2018). Trait self-compassion assessed at baseline also moderates the association between daily hassles and daily total snacks, such that individuals higher in self-compassion show less daily stress-related snacking (Liu et al., 2026). Beyond the buffering role, self-compassion also exerts indirect influences on certain health behaviors via stress. In the domains of alcohol use and physical activity, self-compassion is linked to healthier patterns because individuals with higher self-compassion report lower perceived stress and better emotion regulation (Brooks et al., 2012; Homan & Sirois, 2017).

However, it is worth noting that the stress experience is shaped by different types of stressors triggered by external events or situations and is thus not limited to perceived stress (Inauen et al., 2026). Most research has relied on the perceived stress scale to examine stress in relation to self-compassion and health behaviors (e.g., Benzo et al., 2017; Li et al., 2020; Sirois & Hirsch, 2019). In fact, daily diary research shows that daily stressors, such as daily hassles, can also influence health behaviors and are highly sensitive to real-world fluctuations in stress-related outcomes. For example, recent work by O'Connor and colleagues found that increases in daily hassles were associated with poorer sleep quality and increased morning tiredness after sleep (Liu et al., 2026; O'Connor & Rogerson, 2024). Although emerging daily diary studies demonstrate that self-compassion relates to daily experiences of stress, emotional well-being, and health-related behaviors (Hu et al., 2018; Kelly & Stephen, 2016; Mey et al., 2023), very few have examined whether and how self-compassion is linked specifically to daily hassles or whether it might shape these types of everyday stress-behavior processes. Building on this, the current study utilized a daily diary methodology to help capture how self-compassion functions within the unfolding rhythms of everyday life.

Relatedly, a growing number of interventions demonstrate that self-compassion can be effectively cultivated to reduce stress and support healthier behaviors. Multisession programs such as Mindful Self-Compassion have shown consistent reductions in stress, anxiety, and self-criticism (Neff & Germer, 2013), whereas daily self-compassion meditation has been found to increase daily levels of self-compassion and reduce perceived stress across several weeks (Li et al., 2021). Other interventions have reported improvements in dietary habits like fruit and vegetable intake, as well as better sleep quality with reduced rumination (Butz & Stahlberg, 2018; Rahimi Ardabili, 2018). A commonly proposed mechanism is that self-compassion enhances self-regulation by reducing the emotional impact of stress and fostering more positive emotional states, which in turn facilitate engagement in health-promoting behaviors (Sirois, 2015; Terry & Leary, 2011).

However, there remains a striking lack of interventions that examine self-compassion, stress, and health behaviors concurrently. Although a recent mobile self-compassion intervention reported reductions in perceived stress and eating in response to anxious feelings (Schnepper et al., 2020), few intervention studies have simultaneously assessed self-compassion, stress, and a health behavior. There are even fewer interventions that have examined the effects of a self-compassion intervention on stress and health behavior at the daily level. Moreover, to our knowledge, no previous research has tested a range of health behaviors within the

same framework. This is despite considerable evidence indicating that stress exerts robust influences on eating (Araiza & Lobel, 2018), physical activity (Stults-Kolehmainen & Sinha, 2014), sleep (Hu et al., 2018), and alcohol use (Park et al., 2004). In other words, it remains unclear whether a self-compassion intervention can modify daily stress–behavior dynamics, or whether such interventions can buffer the effects of daily hassles on daily health behaviors or shape multiple daily health behaviors through daily fluctuations in hassles. Therefore, this study initially aimed to focus on whether a self-compassion intervention could influence daily stress (hassles) and daily health behaviors, as well as how daily stress relates to daily health behaviors (i.e., eating, sleep, physical activity, and alcohol use).

In addition to daily stress, positive daily experiences arising from uplifts may also play an important role in shaping everyday behaviors. Uplifts are pleasant, satisfying events or situations (DeLongis et al., 1982) that have been linked to a range of health outcomes. For example, uplifts enhance positive affect and reduce physiological arousal, which has been associated with improved sleep quality and shorter sleep onset latency (Tomfohr et al., 2011; Weller & Avinir, 1993). Daily uplifts can also influence eating behavior, because positive emotions are closely linked to treat-based eating patterns such as increased snacking and they can even buffer the impact of daily hassles on snacking (Moss et al., 2021, 2025). In brief, positive emotions can hinder stress responses and reduce reliance on food as a coping strategy. Although uplifts have been less frequently examined in relation to physical activity and alcohol use, limited evidence suggests that exercise itself is often regarded as an uplift (Eklund et al., 2022). Despite the relevance, uplifts are rarely involved in intervention research on self-compassion and health behaviors. However, existing daily diary evidence has shown that daily self-compassion can be positively associated with daily uplifts but negatively linked with daily hassles (Liu et al., 2026). Hence, examining uplifts offers a more comprehensive understanding of the daily affective context in which health behaviors occur and possibly reflects whether self-compassion enhances not only stress resilience but also positive daily experiences. Therefore, this study further aimed to address this gap by including daily uplifts in the study design, allowing us to examine whether a self-compassion intervention influences different daily affective experiences and health behaviors from a broader perspective.

Taken together, the current study utilized an expressive-writing self-compassion intervention and examined its effects at the daily level through a 7-day daily diary design. Earlier work has indicated that self-compassion can be effectively induced through writing tasks, with participants who write about stressful events from a self-compassionate perspective usually experiencing less negative affect and rumination than those in control conditions (Leary et al., 2007). Additional studies have also evidenced that emotional expression and cognitive processing during writing can lead to measurable benefits for physical and psychological health (Imrie & Troop, 2012; Rivkin et al., 2006; Stanton et al., 2002). The benefits are often characterized by the increased use of cognitive mechanism words and emotionally meaningful language, such as *because*, *think*, *feel*, or *understand* (Tausczik & Pennebaker, 2010).

Besides, in the context of eating behavior, stress-related responses are commonly conceptualized in terms of eating styles, which reflect relatively stable tendencies in how people respond to

stress-related emotional demands (O'Connor et al., 2008). Self-compassion has been shown to relate to both maladaptive and adaptive eating styles. Lower levels of self-compassion are associated with greater emotional and uncontrolled eating in response to emotional triggers, which are linked to poorer psychological and physical health outcomes (Gouveia et al., 2019; Webb & Forman, 2013). In contrast, higher self-compassion has been associated with reduced rigid cognitive restraint aimed at weight or body image regulation (Bourke & Pila, 2023). Accordingly, eating styles were assessed at baseline to provide background information on stress-related eating patterns rather than as primary intervention outcomes.

Based on the above rationale, the current study followed an expressive-writing approach and aimed to investigate: (a) Does a self-compassion intervention improve levels of self-compassion? (b) Does a self-compassion intervention improve daily levels of stress and daily health behaviors (i.e., eating, sleep, physical activity, and alcohol use)? (c) Does a self-compassion intervention moderate daily stress–daily health behavior relationships? (d) Are the effects of a self-compassion intervention on daily health behaviors mediated through daily stress levels? The main research questions were preregistered on AsPredicted (AsPredicted #216910), whereas analyses involving daily uplifts and health behaviors were not preregistered and were conducted as additional exploratory analyses.

## Method

### Participants

Participants were U.K.-based adults (aged  $\geq 18$ ), fluent in English, who completed an online baseline survey and a 7-day daily diary. Participants were primarily recruited via Prolific, with additional recruitment conducted through the University participant pool and social media platforms (e.g., Instagram). More than 93.4% of participants who completed the baseline survey and were randomized into study conditions were recruited via Prolific. Participants recruited through the University participant pool received course credit, whereas individuals recruited through social media participated voluntarily without compensation or academic credit. Statistical baseline comparisons indicated that although participants recruited via Prolific differed from non-Prolific participants on several demographic characteristics (i.e., age, body mass index [BMI], and education level), no significant differences were observed on self-compassion or eating variables central to the study aims.

We aimed to recruit approximately 150 participants based on G\*power sample size calculation (Kang, 2021). A minimum of 120 participants (60 per group) was required to detect a medium-to-large effect ( $d = 0.46$ ) with 80% power and  $\alpha = .05$ . The effect size estimate was informed by previous research using a brief self-compassion writing intervention, which reported medium-sized effects on sleep-related outcomes (Butz & Stahlberg, 2018). Given the limited availability of comparable randomized controlled trials (RCTs) examining self-compassion, daily stress, and health behaviors with daily diary methodology when this current study was designed, the effect size was selected based on the most comparable intervention evidence available. To account for an anticipated 20% dropout rate, missing data, or potential technical issues, we further planned to target a final sample of 150 participants (75 per

group). Participants recruited on Prolific were reimbursed through payments.

Participants recruited through Prolific received up to £10 compensation in total. Compensation was divided into two stages: £2 for completing the baseline survey and enrolling in the diary study, and £8 for completing all the 7-day diary entries. To encourage flexible participation and reduce attrition, participants who did not complete the whole 7-day diary study still received partial reimbursement (£0.50 per completed diary entry). Participants continued to receive diary reminders with survey links even if they missed entries during the study period, unless they chose to withdraw by replying "OPTOUT."

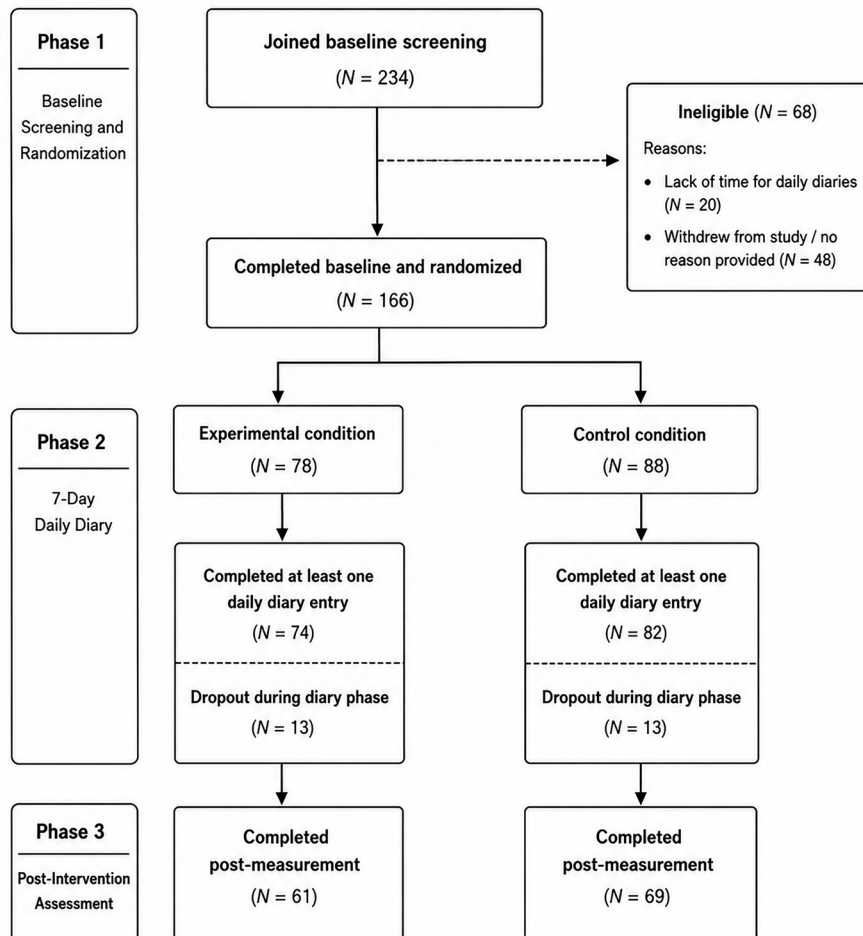
A total of 234 individuals showed interest in this study. One hundred sixty-six participants completed the baseline survey and were subsequently randomized into one of the study conditions. The sample had a mean age of 40.24 years, was 53.6% female, 26.5% reported being on a diet, 49.4% were married, 58.5% held a qualification above an undergraduate degree, and 69.9% were employed. The study was approved by the University Departmental Research Ethics Committee.

## Procedure

In Phase 1, participants provided online informed consent and completed baseline measures. They were then randomly assigned to the experimental or control condition via the Qualtrics randomizer, immediately after completing demographic questions and the preintervention measures of self-compassion and eating (see Figure 1 for the study flow diagram). The intervention compared two guided writing tasks that have been adapted from established expressive-writing and self-compassion intervention paradigms (Butz & Stahlberg, 2018). The experimental group completed an expressive-writing exercise based on self-compassion instructions, whereas the control group was asked to reflect on past daily activities/routines and objectively describe a future plan.

In Phase 2, all participants received notifications via text message or Prolific containing links to complete the diary surveys twice daily for 7 consecutive days. Morning surveys were sent at 12:00 p.m., and evening surveys were sent at 8:00 p.m. The daily diary assessed hassles, uplifts, sleep, physical activity, eating, and drinking behaviors. Participants were instructed to complete their

**Figure 1**  
*Flow Diagram of Participant Progress Throughout the Phase of the Study*



*Note.* N = number of participants.

diaries as close as possible to the notification time, and no later than 2:00 p.m. for the morning diary and 2:00 a.m. for the evening diary. In Phase 3, following the final daily diary entry, all participants were invited to complete questionnaires assessing their levels of self-compassion on that day, trait-like self-compassion, and a manipulation check. The postintervention measures were completed after the 7-day daily diary period.

## Measures

### Demographics

Data were collected on participants' age, sex, dietary restrictions, education level, employment, and marital status. Participants also self-reported their height and weight, which were converted into BMI scores.

**Self-Compassion.** In Phase 1, the 12-item Self-Compassion Scale–Short Form (SCS-SF; Raes et al., 2011) was utilized to assess levels of self-compassion. The SCS-SF includes items that measured self-kindness (e.g., “I try to be understanding and patient toward those aspects of my personality I don’t like”), common humanity (e.g., “I try to see my failings as part of the human condition”), and mindfulness (e.g., “When something upsets me, I try to keep my emotions in balance”). All items indicate how a person acts toward the self on a scale ranging from 1 (*almost never*) to 5 (*almost always*). Cronbach’s  $\alpha$  for the scale in the current study was .912.

**Eating Styles.** The Three Factor Eating Questionnaire-R18 (Anglé et al., 2009) was used to assess three eating styles: cognitive restraint (e.g., “I deliberately take small helpings as a means of controlling my weight”), uncontrolled eating (e.g., “Sometimes when I start eating, I just can’t seem to stop”), and emotional eating (e.g., “When I feel anxious, I find myself eating”). The scale consists of 18 items rated on a 4-point Likert scale (1 = *definitely true* to 4 = *definitely false*), with higher scores reflecting greater levels of each respective eating style. In this study, internal consistency was good for all subscales (Cronbach’s  $\alpha$  = .894 for uncontrolled eating, .830 for cognitive restraint, and .894 for emotional eating).

**Self-Compassion Intervention.** The self-compassion intervention was adapted from Butz and Stahlberg (2018), who demonstrated that brief writing-based exercises can increase self-compassion. All participants completed a writing task. Participants in the experimental group were asked to reflect on a stressful situation and then complete a guided self-compassion writing exercise targeting self-kindness, common humanity, and mindfulness (see Supplemental Material S1 for full writing instructions). Specifically, they were instructed to respond to the situation with kindness and understanding toward themselves, acknowledge their thoughts and emotions mindfully, and consider the experience within a broader human context. Following the writing task, participants adjusted a cursor on a scale to reflect their level of self-compassion, whereas participants in the control group were guided to objectively describe the main activities they engaged in and to reflect on how they might manage their time more effectively and plan for the future (see Supplemental Material S2 for full writing instructions). The writing tasks took a similar amount of time to complete.

### Daily Diary Measures

In Phase 2, online daily diaries were completed twice per day for 7 consecutive days, during which participants reported their

daily hassles, uplifts, sleep, between-meal snacks, fruit and vegetable intake, physical activity, and alcohol use. In particular, sleep was reported in the morning diary, whereas physical activity and alcohol use were reported in the evening diary. All other variables were assessed in both the morning and evening surveys. At the beginning of the study, participants were provided with instructions outlining the diary contents, how they would receive daily access, and guidance on how to complete the items, including definitions and examples.

Several quality control procedures were implemented throughout the daily diary period. Attention check items were embedded within each diary survey, and participants who failed an attention check were automatically exited from the survey. Regarding attention checks, participants were asked to select specific response options (e.g., if you are paying attention, select “Grapes” as your answer). Prolific prescreening filters (e.g., age, country, and English fluency) were also applied before recruitment. In addition, participants were required to provide their Prolific ID following each completed diary entry. Combined with Prolific’s automatic participant identification system, this facilitated participant verification and matching across repeated assessments. Diary completion and participant engagement were also monitored daily throughout the study period.

**Daily Hassles and Uplifts.** Participants were asked to report up to 10 daily hassles and 10 daily uplifts twice a day (e.g., “How many hassles have you experienced today?”). Also, participants rated their intensity on a 5-point scale ranging from 1 (*not at all intense*) to 5 (*very intense*). The total number of both hassles and uplifts was recorded on a 0–10 scale. Daily hassles were defined as *events, thoughts, or situations that evoke negative emotions such as irritation, worry, or frustration or that hinder goal achievement* (O’Connor et al., 2008), whereas daily uplifts referred to *positive experiences, such as feelings of joy from receiving affection, relief from good news, or the comfort of a restful night’s sleep* (Moss et al., 2025).

**Daily Sleep Outcomes.** Daily sleep was assessed each morning using six self-report items reflecting the previous night’s sleep, consistent with prior daily diary research (e.g., O’Connor et al., 2025; O’Connor & Rogerson, 2024). Participants reported their sleep duration (“Last night, how many hours of actual sleep did you get?”), sleep onset latency (“How long in minutes did it take you to fall asleep last night?”), morning tiredness (“How tired do you feel this morning?”; 1 = *not at all*, 7 = *very good*), and overall sleep quality (“Last night, how would you rate your sleep quality overall?”; 1 = *very bad*, 7 = *very good*). These items were adapted from the Consensus Sleep Diary (Carney et al., 2012) and the Pittsburgh Sleep Quality Index (Buysse et al., 1989), both of which demonstrate strong reliability and validity.

Presleep arousal was measured with two items assessing cognitive and presleep arousal (“As you were trying to go to sleep last night, did thoughts keep running through your mind?”; “As you were trying to go to sleep last night, did you experience a jittery, nervous feeling in your body?”; 1 = *not at all*, 10 = *very much so*). These items were adapted from the Presleep Arousal Scale (Nicassio et al., 1985; Cronbach’s  $\alpha$  = .765).

**Daily Eating.** Participants reported up to 10 between-meal snacks, 10 fruit portions, and 10 vegetable portions twice daily. For each snack, participants recorded the time of consumption, brand/type, and size or quantity. Fruit and vegetable portion sizes

were estimated according to U.K. National Health Service “5 A day portion sizes.” Snack classification followed established nutritional guidelines in previous research (McCance & Widdowson, 2014; Moss et al., 2025; O'Connor et al., 2008). Items involving more than 22.5 g of sugar per 100 g or more than 17.5 g of fat per 100 g were coded as unhealthy snacks/drinks. This category also included high-sugar or high-calorie beverages (e.g., fizzy drinks, energy drinks). Daily snack outcomes were calculated as the total number of snacks consumed, along with separate counts of healthy and unhealthy snacks. Fruit and vegetable intake was measured as the total number of portions consumed.

**Daily Physical Activity.** Participants reported the type and duration of physical activity they engaged in each day during the evening diary. Physical activity was assessed by three categories: vigorous activity, moderate activity, and walking. For example, participants were asked about “How many minutes of vigorous physical activity did you do today?” (with instructions to write 0 if none). Clear definitions of each category were provided (e.g., “Vigorous activity is defined as an activity that makes you breathe much harder than normal, such as weighted, running, gym cycling, swimming”; “Moderate activity is defined as an activity that makes you breathe a bit harder than normal, such as easy bicycling, double tennis, light weighted”). The three self-report items were adapted from the International Physical Activity Questionnaire, which is a widely used measure with established reliability and validity (Craig et al., 2003).

**Daily Alcohol Use.** Participants reported their alcohol consumption in each evening diary. If they indicated any alcohol consumption, they were asked to provide a brief description of the drink (e.g., “1 pint of Stella Artois lager”). Daily alcohol consumption was calculated as the total number of alcohol units, based on the U.K. National Health Service “Alcohol Units” guidelines.

### Postintervention Questionnaire

In Phase 3, all participants completed a postintervention questionnaire after the final daily diary entry, following the 7-day daily diary (Phase 2). The postintervention assessment included measures of daily self-compassion, a manipulation check, and an overall self-compassion scale. Daily self-compassion was assessed by using six items selected for their high factor loadings from each subscale of the original 26-item Self-Compassion Scale. Items were adapted from previous daily diary research (Li et al., 2020) and rephrased to capture daily experiences in a stressful context (e.g., “Today, when I saw aspects of myself that I didn't like, I got down on myself”). A total daily self-compassion score was calculated by averaging the subscale items, with negative items reverse-coded (Cronbach's  $\alpha = .785$ ). A manipulation check was completed after the daily self-compassion assessment following a procedure used by Butz and Stahlberg (2018; see Supplemental Material S3 for full manipulation check materials). Participants were instructed to describe their current emotional status and to rate 13 self-compassionate adjectives (e.g., balanced, mindful, connected, isolated) on a scale from 1 = *strongly disagree* to 5 = *strongly agree* (Cronbach's  $\alpha = .904$ ).

Finally, the 12-item SCS-SF (Raes et al., 2011), previously administered in Phase 1, was repeated to assess overall levels of self-compassion after a 7-day daily diary. Participants were

instructed to “Please think about how often you felt or behaved in the manner described below during the last 7 days.”

### Data Analyses

A total of 166 participants completed the baseline questionnaire and were randomized into the experimental and control conditions (Phase 1; Level 2), of which 156 completed at least 1 day of the daily diary (Phase 2; Level 1), had matched Level 2 data, and were included in the final hierarchical linear modeling (HLM) analyses (Woltman et al., 2012). A final sample of 130 participants completed the postintervention questionnaire (Phase 3) due to dropout across 7 days. Participants who did not complete the postintervention questionnaire ( $n = 26$ ) were retained in the analyses. The missing observations were treated as missing data. Participants were excluded only if baseline data were missing or diary entries were insufficient. This is because of a lack of usable diary entries for HLM analyses, or because diary IDs could not be matched to baseline responses.

First, independent samples  $t$  tests were conducted in SPSS to compare baseline differences between completers and noncompleters, allowing us to evaluate whether dropout was systematic and may bias the findings of this RCT. Furthermore, a series of 2 (group: experimental vs. control)  $\times$  2 (time: preintervention vs. postintervention) mixed analyses of variance were conducted to examine whether levels of self-compassion improved following the intervention.

Second, following previous diary-based RCT work (O'Connor et al., 2015), HLM was used to examine both the direct effects of the intervention and whether intervention condition moderated the within-person associations between daily stress variables and daily health behaviors. The cross-level models employed a two-level hierarchical structure, with repeated daily observations (e.g., daily hassles, daily uplifts, and daily health behaviors such as the number of daily snacks) nested within individuals. Daily hassles and daily uplifts were entered as Level 1 predictors and group-mean centered, whereas intervention condition (experimental vs. control) was entered as a Level 2 predictor and uncentered. The models used a two-level multilevel framework in which Level 1 and Level 2 predictors were estimated simultaneously. Cross-level interaction terms were included to test whether intervention condition moderated the associations between daily stress variables and daily health behaviors. BMI, age, and gender were also included as Level 2 covariates in the hierarchical models. An example of the cross-level moderation model is shown as the following equation:

$$\begin{aligned} \text{The number of daily snacks} = & \beta_{00} + \beta_{01}(\text{experimental vs. control}) \\ & + \beta_{10}(\text{daily hassles}) \\ & + \beta_{11}(\text{experimental vs. control} \\ & \quad \times \text{daily hassles}) + r_{0i} \\ & + r_{1i}(\text{daily hassles}) + e. \end{aligned}$$

Any statistically significant effects of cross-level interactions were further decomposed by using simple slopes (Preacher et al., 2003). Note that the results remained substantively the same when age, gender, and BMI were included as covariates in the models. Therefore, to be parsimonious, the results are presented without these additional variables included. Finally, a multilevel mediation analysis was conducted using the Rockwood MLmed macro in

SPSS (Rockwood, 2017) to examine whether the intervention had indirect effects on daily health behaviors via daily hassles or daily uplifts. A 2-1-1 mediation design was tested with the experimental versus control group entered as the Level 2 predictor, daily hassles or daily uplifts as the Level 1 mediators, and daily health behaviors as the Level 1 outcome variables.

### Transparency and Openness Statement

In this article, we report how we determined our sample size, all data exclusions, all manipulations, and all measures included in the study, and we followed Consolidated Standards of Reporting Trials guidelines for reporting parallel group randomized trials. Deidentified datasets are available via Figshare at <https://figshare.com/s/a6ac46c7cc3e58290db8>. Additional study materials and analytic details are available from the corresponding author. Data were analyzed using IBM SPSS Statistics (Version 31) and HLM (Version 7.0). The study hypotheses and analysis plan were preregistered on AsPredicted (AsPredicted #216910).

## Results

### Descriptive Statistics, Dropout Analysis, and Baseline Correlations

On average, participants in the experimental group reported fewer daily hassles and consumed fewer total and unhealthy snacks compared with those in the control group. They also engaged in more minutes of physical activity, including vigorous, moderate, and walking. Baseline self-compassion scores indicated moderate levels in both groups, with no notable group differences. Mean scores on the eating-style measures, along with participants' age, gender distribution, and BMI, are also reported. BMI values in both groups were within the overweight range for most adults (Experimental:  $M = 26.46$ ; Control:  $M = 27.76$ ), regardless of age. Independent samples  $t$  tests were conducted to compare participants who completed the postintervention questionnaire with those who dropped out. No significant differences emerged for age, gender, BMI, dieting status, or baseline self-compassion (all  $p > .05$ ). Therefore, dropout did not follow a systematic pattern, suggesting that attrition is unlikely to have introduced substantial bias into the RCT results. Full descriptive statistics for all Level 1 and Level 2 variables are presented in Table S1 in the online supplemental materials.

Table 1 displays the Pearson correlations between baseline self-compassion and other Level 2 variables. Trait level of self-compassion was negatively associated with uncontrolled and emotional eating, indicating that participants with higher self-compassion reported fewer maladaptive eating patterns. Self-compassion was also negatively related to BMI and female gender, but positively related to age. This suggests that younger adults, women, and individuals with higher BMI reported lower self-compassion.

### Change in Levels of Self-Compassion Between Groups

A 2 (group: experimental vs. control)  $\times$  2 (time: preintervention vs. postintervention) repeated-measures analysis of variance revealed a significant main effect of time,  $F(1, 128) = 38.58, p < .001, \eta_p^2 = .23$ , indicating an overall change in self-compassion from baseline to postintervention. However, the Time  $\times$  Condition interaction was not significant,  $F(1, 128) = 1.12, p = .292, \eta_p^2 = .01$ , indicating that changes in self-compassion did not differ between the experimental and control groups.

### Direct Effects of the Intervention on Daily Stress and Daily Health Behaviors

The results of HLM analysis regarding whether the self-compassion intervention directly influenced participants' daily stress and daily health behaviors showed no significant between-group differences were observed (all  $p > .05$ ). This indicates that the intervention did not directly change daily stress or any of the daily health behaviors across 7 days. Full model coefficients are presented in Table S2 in the online supplemental materials.

### Moderating Effects of Intervention on Relationships Between Daily Stress and Daily Health Behaviors

Tests examining whether the self-compassion intervention moderated the associations between daily hassles and daily health behaviors, as well as daily uplifts and the same daily variables, are presented in Tables S3 and S4 in the online supplemental materials. The intervention significantly moderated the impact of daily hassles on total snacks and unhealthy snacks (respectively,  $B = -0.215, SE = 0.093, p = .023$ ;  $B = -0.192, SE = 0.077, p = .014$ ), indicating that self-compassion reduced stress-related snacking behaviors, as shown in Table S3 in the online supplemental materials. Similarly, the intervention was also found to moderate the effects of daily uplifts on total snacks and unhealthy snacks (respectively,  $B = -0.248,$

**Table 1**  
*Correlations Between Self-Compassion and Key Background Variables*

| Variable               | 1       | 2       | 3     | 4      | 5     | 6     | 7 |
|------------------------|---------|---------|-------|--------|-------|-------|---|
| 1. Self-compassion     | —       |         |       |        |       |       |   |
| 2. Uncontrolled eating | -.256** | —       |       |        |       |       |   |
| 3. Cognitive restraint | .037    | .018    | —     |        |       |       |   |
| 4. Emotional eating    | -.393** | .681**  | .153* | —      |       |       |   |
| 5. BMI                 | -.175*  | .373**  | -.081 | .369** | —     |       |   |
| 6. Gender              | -.251** | .115    | .082  | .180*  | -.109 | —     |   |
| 7. Age                 | .176*   | -.213** | .047  | -.132  | .063  | -.088 | — |

Note. Gender was coded as 1 = male, 2 = female. BMI = body mass index.

\*  $p < .05$ . \*\*  $p < .001$ .

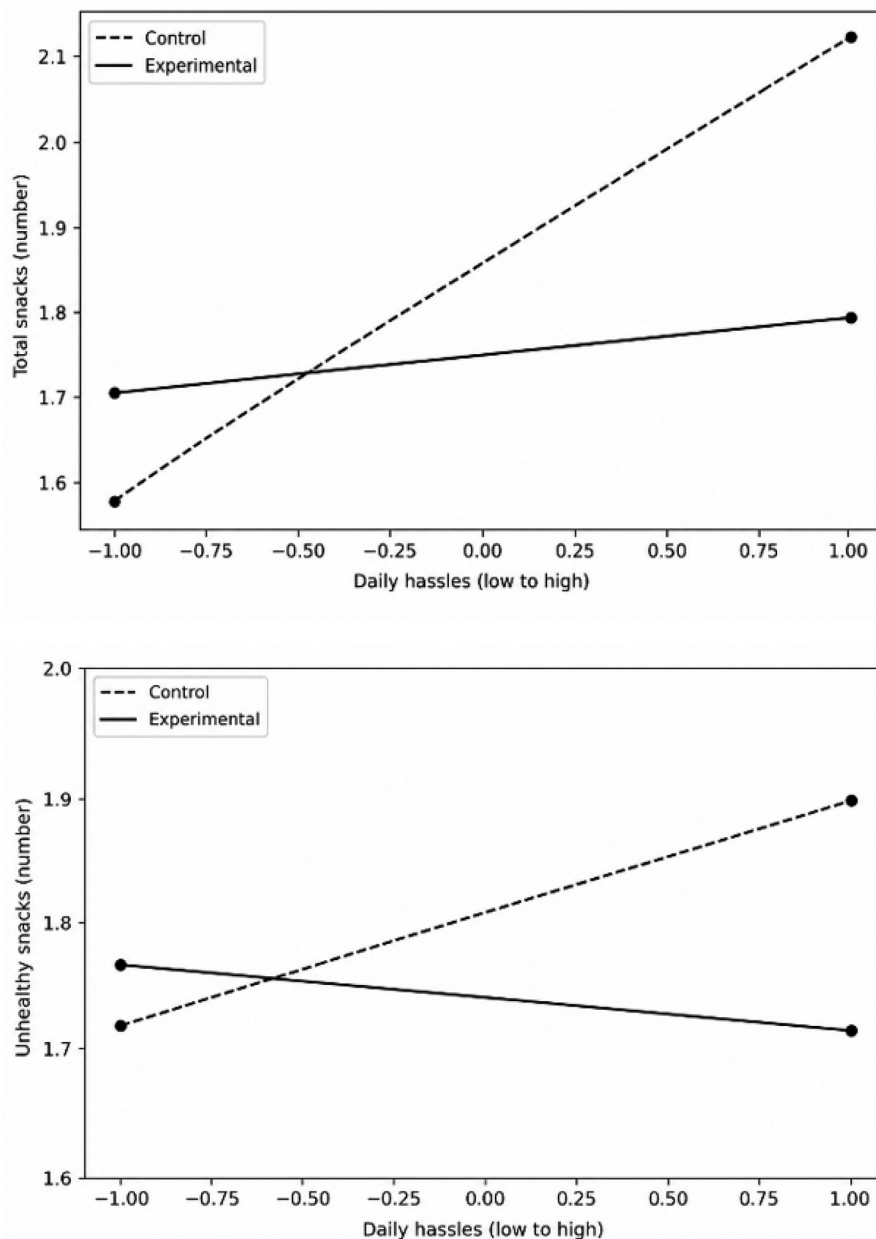
$SE = 0.113, p = .030; B = -0.201, SE = 0.092, p = .030$ ), as shown in Table S4 in the online supplemental materials. In addition, the intervention moderated the relationship between daily uplifts and sleep duration ( $B = -0.265, SE = 0.119, p = .028$ ).

The significant cross-level moderation effects were decomposed using simple slopes. As indicated in Figure 2, the analysis showed that daily hassles were only positively associated with snacking among participants in the control group (for total snacks,  $B = 0.27, p < .001$ ; for unhealthy snacks,  $B = 0.19, p < .001$ ). In contrast, the associations were attenuated and

nonsignificant in the experimental group (all  $p > .05$ ). Similar to hassle–snacking relationships (see Figure 3), daily uplifts were only associated with total and unhealthy snacks in the control group ( $B = 0.29, p < .001; B = 0.17, p = .009$ ), rather than the experimental group. However, uplifts were unrelated to sleep duration in the control group ( $B = 0.049, p = .431$ ). They were only associated with fewer sleep hours in the experimental group ( $B = -0.204, p = .027$ ), as shown in Figure S1 in the online supplemental materials. Overall, the pattern of simple slopes suggested that the intervention primarily weakened the

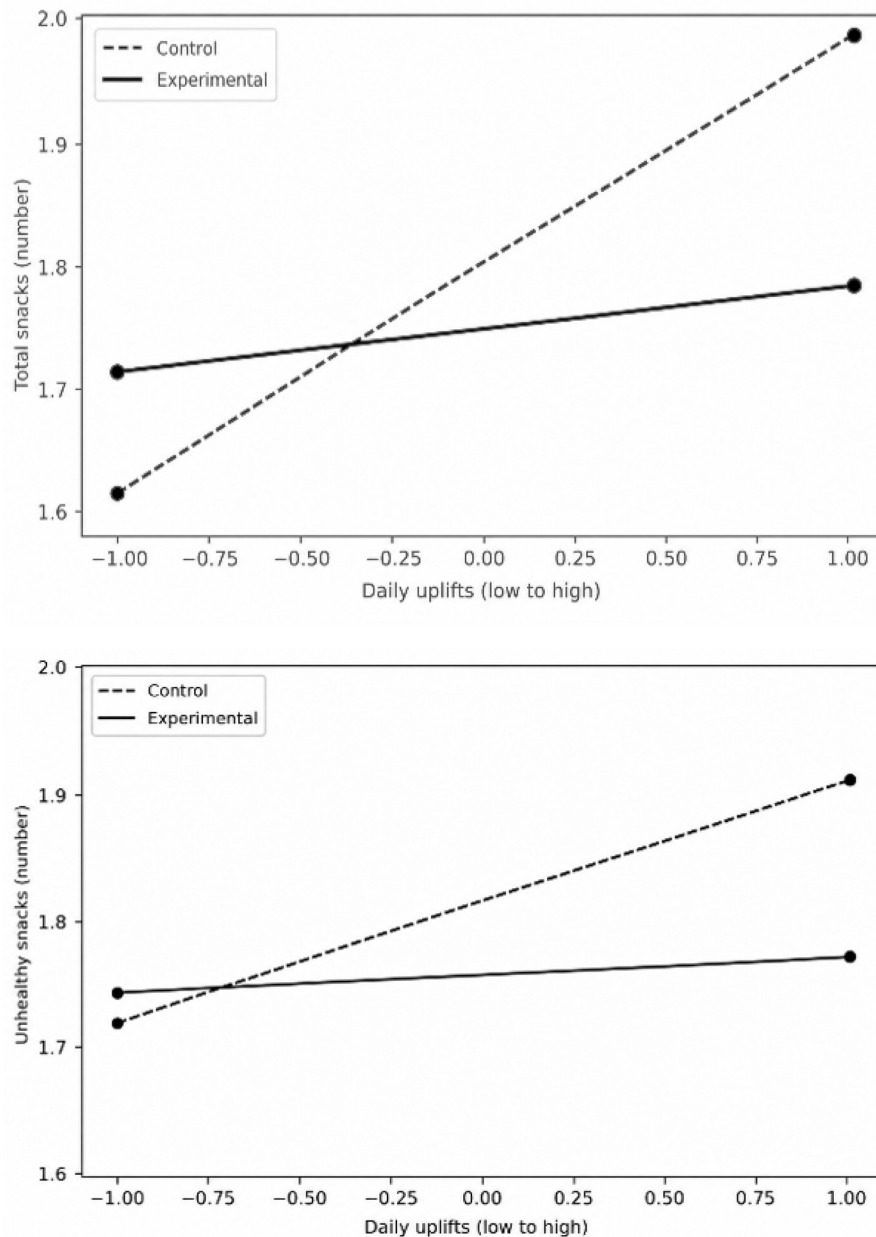
**Figure 2**

*Moderating Effects of the Self-Compassion Intervention on the Daily Hassles–Snacking Relationship (Upper Panel) and the Daily Hassles–Unhealthy Snacking Relationship (Lower Panel)*



**Figure 3**

*Moderating Effects of the Self-Compassion Intervention on the Daily Uplifts–Snacking Relationship (Upper Panel) and the Daily Uplifts–Unhealthy Snacking Relationship (Lower Panel)*



associations between daily emotional experiences and snacking behaviors.

### Indirect Effects of Intervention on Daily Health Behaviors via Daily Stress

Finally, tests examining whether the effects of the self-compassion intervention on daily health behaviors were mediated via daily hassles or daily uplifts showed that the intervention had no indirect effects on the health behaviors through

either daily hassles or daily uplifts over the 7-day diary period. Full mediation results are presented in [Tables S5 and S6 in the online supplemental materials](#).

### Discussion

This study examined whether a brief self-compassion intervention delivered via expressive writing could increase self-compassion, reduce daily stress, and influence daily health behaviors, as well as modify associations between daily stressors and

health behaviors across a 7-day diary period. In addition, the study investigated whether baseline trait self-compassion was associated with various eating styles. Results indicated consistent moderation effects on both hassle–snacking and uplift–snacking relationships. That is, in the experimental group, associations between daily hassles and snacking, and between daily uplifts and snacking, were attenuated and no longer statistically significant, whereas in the control group higher daily hassles and daily uplifts were associated with greater consumption of total and unhealthy snacks. Also, the intervention modified the uplift–sleep association, such that participants in the experimental condition reported fewer sleep hours on days when they experienced more uplifts.

Consistent with previous research, baseline findings indicated that individuals with higher trait self-compassion reported lower levels of uncontrolled and emotional eating (i.e., Liu et al., 2025, 2026). Younger adults, women, and people with higher BMI seemed to report lower self-compassion (Braun et al., 2016; Homan, 2016; Yarnell et al., 2015). However, contrary to hypotheses, the intervention did not produce greater improvements in self-compassion relative to the control condition, nor did it directly improve daily stress or daily health behaviors, although self-compassion increased over time across both groups. Finally, mediation analyses provided no evidence for the indirect effects of the intervention on daily health behaviors via daily hassles or daily uplifts.

From a self-compassion and self-regulation perspective, self-compassion is expected to be most beneficial under conditions of difficulty or threat, when emotional regulation demands are highest (Allen & Leary, 2010; Terry & Leary, 2011). Consistent with the theories, this current study showed that a brief self-compassion writing exercise moderated the way daily stress was linked to daily health behaviors, particularly by reducing participants' tendency to snack when stressed. Daily hassles were associated with higher total and unhealthy snacking only in the control group, whereas these associations were reduced or absent in the experimental group. Daily uplifts showed a similar pattern, with uplift–snacking associations present only in the control group. This pattern suggests that self-compassion training may influence how individuals respond to both negative (hassles) and positive (uplifts) emotional triggers for snacking, potentially by strengthening emotional and behavioral regulation in daily life even before measurable increases in self-compassion occur. Indeed, this finding aligns with previous diary research demonstrating that hassle-related and uplift-related snacking are well-established behavioral responses, and that trait self-compassion moderates the impact of daily hassles on snacking (Liu et al., 2026; Moss et al., 2021, 2025). Importantly, this study extends existing literature by showing that a brief one-off self-compassion writing task can buffer the effects of proximal daily experiences on snacking, which has not been explored in previous interventions.

Specifically, self-compassion may support emotional regulation and reduce reactivity, which could help individuals maintain behavioral stability when stressed (Allen & Leary, 2010; Terry & Leary, 2011). Snacking, especially unhealthy snacking (e.g., high fat/sugar food), is highly associated with individual emotional coping responses regardless of emotion type (Evers et al., 2018; Wallis & Hetherington, 2009). Although expressive writing often asks participants to articulate their deep thoughts and feelings, it

can be perceived as a process that a person naturally engages in cognitive reappraisal (Imrie & Troop, 2012; Tausczik & Pennebaker, 2010). Applying this method to a self-compassion intervention can similarly reinforce a self-compassionate mindset by providing guidance on how to practice and develop such a skill with written reflection. In doing so, people are likely to act more self-compassionately, regulate their emotional responses more effectively, and then reduce snacking driven by stress or other emotional experiences.

This current study also found that the self-compassion intervention altered the daily uplift–sleep relationship. That is, days with more uplifts were associated with fewer sleep hours only in the experimental group. It is inconsistent with previous research suggesting that uplifts are related to better subjective sleep quality because positive daily events seem to have a protective effect on negative emotional load accumulated during the day (Tomfohr et al., 2011). One possible explanation is that the self-compassion intervention encouraged the awareness of personal needs, emotional experiences, and engagement in meaningful activities. Days characterized by more uplifts can also be linked to more active and social engagement (DeLongis et al., 1982), which may contribute to reduced sleep duration. In other words, participants may have allowed themselves to engage more in enjoyable or socially rewarding activities and to feel psychologically restorative on high-uplift days. This potentially extends evening activity and delays sleep time. Future research is needed to determine whether uplift–sleep pattern is reliable and replicable across studies.

However, contrary to hypotheses, the current study did not find improvement in levels of self-compassion in individuals allocated to the self-compassion intervention, nor did it directly improve daily stress and daily health behaviors. A likely explanation is that a one-off writing exercise might be limited in sustaining broader trait-level changes. Although expressive-writing tasks have been found to be effective in inducing compassionate responses toward the self immediately (Leary et al., 2007), the effects may fade within a few days if the practice is not repeated. Trait self-compassion is generally regarded as an individual's stable attitude and tendency. Interventions that have shown direct self-compassion benefits for stress or a health behavior typically involve multiple writing sessions or guided meditation practices, which allow participants to rehearse and reinforce a self-compassionate attitude over time (Butz & Stahlberg, 2018; Dreisoerner et al., 2021; Schnepfer et al., 2020).

Alternatively, behavior change often requires time and consistent support. Daily stress-related behaviors are particularly dynamic and context-dependent. This again suggests that future interventions should consider repeated self-compassion practice to help people cultivate a more enduring self-compassionate mindset, which, in turn, may more directly support and maintain improvements in stress and health behaviors in daily life. Meanwhile, cost-effective approaches such as brief daily writing prompts, app-based microinterventions, or simple questions involving self-compassion statements within daily diaries might help reinforce the habitual use of self-compassion skills and further support health-promoting behaviors when people encounter daily stress.

Finally, the intervention did not indirectly influence any daily health behaviors through daily stress pathways. Although observational evidence suggests that stress regulation is one possible mechanism linking self-compassion to health behaviors (Homan & Sirois, 2017; Sirois, 2020), studies explicitly testing whether stress reductions mediate the effects of self-compassion on health

behaviors in daily life remain scarce. Therefore, future research should continue to explore this potential pathway on a larger scale with more intensive self-compassion interventions. To our knowledge, this is the first RCT to combine a self-compassion intervention with daily diary methods.

### Limitations

Three main limitations should be acknowledged. First, the self-compassion intervention consisted of a single expressive-writing exercise, which appeared to be insufficient to improve levels of self-compassion (at least as assessed at the end of the study period), daily stress, or daily health behaviors. It is likely that repeated and consecutive practice is needed to train self-compassion as a flexible daily resource. However, the use of expressive writing remains a strength of this RCT, as it reduced maladaptive snacking patterns in response to daily emotional triggers. This highlights the potential value of it as a low-cost, scalable intervention with longer term benefits that is grounded in established mechanisms of emotional expression and cognitive reappraisal (Pennebaker & Francis, 1996).

In other words, future interventions should consider frequent, focused but low-burden approaches, such as digital microinterventions and unrestricted access per day, to enhance accessibility and flexibility (Baumel et al., 2020). It would allow individuals to engage with self-compassion practices at times when emotional load is high, rather than being limited to fixed intervention schedules. Such approaches might also be suitable for clinical populations, as patients may feel more comfortable completing writing exercises at home and online (Frattaroli, 2006; Imrie & Troop, 2012). Hence, flexibility could be especially important in contexts where in-person emotional support (e.g., from clinical staff or hospice services) may not be immediately available during emotionally challenging situations.

However, it should also be noted that individual differences in literacy, motivation, reflective capacity, and willingness to engage with repeated diary procedures may influence participants' engagement with intensive longitudinal interventions. Completing repeated self-reflective writing tasks over several days may require sustained motivation, emotional engagement, and comfort with introspection, which may not be equally acceptable or manageable for all individuals (Smith et al., 2025). This further highlights the potential value of flexible, focused, and accessible self-compassion practices that allow individuals to reengage following missed entries or periods of difficulty, while also addressing the psychological challenges that may undermine sustained long-term behavior change. Future research should continue to examine how such approaches can be implemented in ways that maximize both engagement and feasibility across different populations.

Second, daily self-compassion was assessed only at the end of the daily diary, which limited the ability to capture day-to-day fluctuations in self-compassion. The current study adopted not to assess self-compassion each day to reduce measurement reactivity. The repeated self-reporting of self-compassion itself could act as a form of intervention by regularly reminding participants to think self-compassionately in both the experimental and control conditions. Future interventions could address this limitation by including very brief, low-impact measures of state self-compassion or alternative designs, such as a single-item indicator or random

prompts without being explicitly tied to stress or diary completion (Shiffman et al., 2008).

Third, the current study relied on self-report measures to assess engagement with the self-compassion writing task. Informal inspection of participants' written responses suggested that many participants in the intervention condition engaged meaningfully with the exercise and frequently used compassionate and reflective language. Future studies may consider incorporating linguistic analysis approaches (e.g., Linguistic Inquiry and Word Count) to examine whether linguistic indicators of self-compassion (e.g., compassion-related text or positive emotion words) are associated with intervention engagement and effectiveness.

In addition, reliance on self-report measures alone may not fully capture daily dynamics in health behaviors and emotional experiences. Future studies may benefit from incorporating a wider range of methodologies, such as ecological momentary assessment or wearable devices, to complement and strengthen the assessment of daily experiences and health behaviors. Such approaches might be particularly useful for assessing sleep quality and exercise duration, where objective measures could improve the accuracy of capturing daily fluctuations. Finally, although the analyses were guided by study hypotheses and previous literature, the number of analyses conducted might increase the possibility of chance findings. Therefore, future studies should replicate these findings in larger samples to confirm the robustness and reliability of the observed effects.

To conclude, the findings of the current study suggest that a self-compassion intervention integrating expressive writing with a daily diary design can modify the impact of daily stress and emotional experiences on health behaviors, particularly snacking. This theory-driven and scalable approach may help support stress-behavior dynamics in daily life. Future research should examine whether repeatable self-compassion practice that is delivered through cost-effective approaches could strengthen and sustain the effects over time.

### Abstracto

**Objetivo:** El estrés diario está estrechamente relacionado con los comportamientos de salud en la vida cotidiana; sin embargo, pocas intervenciones han examinado cómo la autocompasión influye en estas relaciones a nivel diario. Este ensayo controlado aleatorizado evaluó si una breve intervención de autocompasión mediante escritura expresiva tuvo un impacto en el estrés diario, los comportamientos de salud cotidianos y la relación entre el estrés y el comportamiento a lo largo de 7 días. **Métodos:** Los participantes fueron asignados aleatoriamente a un grupo de escritura sobre autocompasión ( $N = 78$ ) o a un grupo de control ( $N = 88$ ), seguido por un diario durante 7 días para evaluar las molestias, los momentos positivos, la alimentación, el sueño, la actividad física y el consumo de alcohol. La autocompasión se midió al inicio del estudio y una semana después de completar los diarios. **Resultados:** La manipulación moderó las asociaciones entre las molestias diarias y el consumo de aperitivos, y entre las experiencias positivas diarias y el consumo de aperitivos. En la condición de control, un mayor estrés diario y experiencias positivas diarias se asociaron con un mayor consumo total y de aperitivos poco saludables, mientras que estas asociaciones disminuyeron o desaparecieron en la condición experimental. Sin embargo, los participantes en la condición de autocompasión informaron una menor duración del sueño en los días caracterizados por mayores experiencias positivas. Los análisis multinivel y de mediación no revelaron efectos directos ni indirectos de la intervención sobre el estrés diario ni sobre los comportamientos de salud diarios. Los ANOVA mixtos indicaron que, si bien la autocompasión aumentó con el tiempo, la condición de intervención

no presentó mayores incrementos en la autocompasión en comparación con la condición de control. **Conclusiones:** Los hallazgos proporcionan evidencia inicial de que una breve intervención de autocompasión mediante la escritura expresiva puede mitigar la dinámica estrés-conducta en la vida diaria. Investigaciones futuras deberían centrarse en si aumentar la frecuencia de las prácticas de autocompasión puede fortalecer y mantener los efectos a lo largo del tiempo y en diversas poblaciones.

## References

- Allen, A. B., & Leary, M. R. (2010). Self-compassion, stress, and coping. *Social and Personality Psychology Compass*, 4(2), 107–118. <https://doi.org/10.1111/j.1751-9004.2009.00246.x>
- Anglé, S., Engblom, J., Eriksson, T., Kautiainen, S., Saha, M.-T., Lindfors, P., Lehtinen, M., & Rimpelä, A. (2009). Three factor eating questionnaire-R18 as a measure of cognitive restraint, uncontrolled eating and emotional eating in a sample of young Finnish females. *The International Journal of Behavioral Nutrition and Physical Activity*, 6(1), Article 41. <https://doi.org/10.1186/1479-5868-6-41>
- Araiza, A. M., & Lobel, M. (2018). Stress and eating: Definitions, findings, explanations, and implications. *Social and Personality Psychology Compass*, 12(4), Article e12378. <https://doi.org/10.1111/spc3.12378>
- Baumel, A., Fleming, T., & Schueller, S. M. (2020). Digital micro interventions for behavioral and mental health gains: Core components and conceptualization of digital micro intervention care. *Journal of Medical Internet Research*, 22(10), Article e20631. <https://doi.org/10.2196/20631>
- Benzo, R. P., Kirsch, J. L., & Nelson, C. (2017). Compassion, mindfulness, and the happiness of healthcare workers. *Explore*, 13(3), 201–206. <https://doi.org/10.1016/j.explore.2017.02.001>
- Bourke, M., & Pila, E. (2023). Body-related self-conscious emotions, self-compassion, and dietary restraint in Canadian undergraduate university students: A multilevel mediation and moderation analysis. *International Journal of Eating Disorders*, 56(11), 2131–2141. <https://doi.org/10.1002/eat.24049>
- Braun, T. D., Park, C. L., & Gorin, A. (2016). Self-compassion, body image, and disordered eating: A review of the literature. *Body Image*, 17, 117–131. <https://doi.org/10.1016/j.bodyim.2016.03.003>
- Brooks, M., Kay-Lambkin, F., Bowman, J., & Childs, S. (2012). Self-compassion amongst clients with problematic alcohol use. *Mindfulness*, 3(4), 308–317. <https://doi.org/10.1007/s12671-012-0106-5>
- Brown, L., Houston, E. E., Amonoo, H. L., & Bryant, C. (2021). Is self-compassion associated with sleep quality? A meta-analysis. *Mindfulness*, 12(1), 82–91. <https://doi.org/10.1007/s12671-020-01498-0>
- Butz, S., & Stahlberg, D. (2018). Can self-compassion improve sleep quality via reduced rumination? *Self and Identity*, 17(6), 666–686. <https://doi.org/10.1080/15298868.2018.1456482>
- Buyse, D. J., Reynolds, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research*, 28(2), 193–213. [https://doi.org/10.1016/0165-1781\(89\)90047-4](https://doi.org/10.1016/0165-1781(89)90047-4)
- Carney, C. E., Buysse, D. J., Ancoli-Israel, S., Edinger, J. D., Krystal, A. D., Lichstein, K. L., & Morin, C. M. (2012). The consensus sleep diary: Standardizing prospective sleep self-monitoring. *Sleep*, 35(2), 287–302. <https://doi.org/10.5665/sleep.1642>
- Craig, C. L., Marshall, A. L., Sjöström, M., Bauman, A. E., Booth, M. L., Ainsworth, B. E., Pratt, M., Ekelund, U., Yngve, A., Sallis, J. F., & Oja, P. (2003). International Physical Activity Questionnaire: 12-country reliability and validity. *Medicine and Science in Sports and Exercise*, 35(8), 1381–1395. <https://doi.org/10.1249/01.MSS.0000078924.61453.FB>
- DeLongis, A., Coyne, J. C., Dakof, G., Folkman, S., & Lazarus, R. S. (1982). Relationship of daily hassles, uplifts, and major life events to health status. *Health Psychology*, 1(2), 119–136. <https://doi.org/10.1037/0278-6133.1.2.119>
- Dreisöerner, A., Junker, N. M., & van Dick, R. (2021). The relationship among the components of self-compassion: A pilot study using a compassionate writing intervention to enhance self-kindness, common humanity, and mindfulness. *Journal of Happiness Studies*, 22(1), 21–47. <https://doi.org/10.1007/s10902-019-00217-4>
- Eklund, R., Bondjers, K., Hensler, I., Bragesjö, M., Johannesson, K. B., Arnberg, F. K., & Sveen, J. (2022). Daily uplifts during the COVID-19 pandemic: What is considered helpful in everyday life? *BMC Public Health*, 22(1), Article 85. <https://doi.org/10.1186/s12889-022-12506-4>
- Evers, C., Dingemans, A., Junghans, A. F., & Boevé, A. (2018). Feeling bad or feeling good, does emotion affect your consumption of food? A meta-analysis of the experimental evidence. *Neuroscience and Biobehavioral Reviews*, 92, 195–208. <https://doi.org/10.1016/j.neubiorev.2018.05.028>
- Ewert, C., Vater, A., & Schröder-Abé, M. (2021). Self-compassion and coping: A meta-analysis. *Mindfulness*, 12(5), 1063–1077. <https://doi.org/10.1007/s12671-020-01563-8>
- Frattaroli, J. (2006). Experimental disclosure and its moderators: A meta-analysis. *Psychological Bulletin*, 132(6), 823–865. <https://doi.org/10.1037/0033-2909.132.6.823>
- Gouveia, M. J., Canavarro, M. C., & Moreira, H. (2019). Associations between mindfulness, self-compassion, difficulties in emotion regulation, and emotional eating among adolescents with overweight/obesity. *Journal of Child and Family Studies*, 28(1), 273–285. <https://doi.org/10.1007/s10826-018-1239-5>
- Homan, K. J. (2016). Self-compassion and psychological well-being in older adults. *Journal of Adult Development*, 23(2), 111–119. <https://doi.org/10.1007/s10804-016-9227-8>
- Homan, K. J., & Sirois, F. M. (2017). Self-compassion and physical health: Exploring the roles of perceived stress and health-promoting behaviors. *Health Psychology Open*, 4(2), Article 2055102917729542. <https://doi.org/10.1177/2055102917729542>
- Hu, Y., Wang, Y., Sun, Y., Arteta-Garcia, J., & Purol, S. (2018). Diary study: The protective role of self-compassion on stress-related poor sleep quality. *Mindfulness*, 9(6), 1931–1940. <https://doi.org/10.1007/s12671-018-0939-7>
- Imrie, S., & Troop, N. A. (2012). A pilot study on the effects and feasibility of compassion-focused expressive writing in Day Hospice patients. *Palliative and Supportive Care*, 10(2), 115–122. <https://doi.org/10.1017/S1478951512000181>
- Inauen, J., Allan, J., Aulbach, M. B., Bamert, M., Blechert, J., Lüthi, S., Powell, D., Ruf, A., & O'Connor, D. B. (2026). Investigating stress and health behaviour relationships in daily life: Towards a framework for advancing future research. *Health Psychology Review*, 1–23. <https://doi.org/10.1080/17437199.2026.2637421>
- Kang, H. (2021). Sample size determination and power analysis using the G\* Power software. *Journal of Educational Evaluation for Health Professions*, 18, Article 17. <https://doi.org/10.3352/jeehp.2021.18.17>
- Kelly, A. C., & Stephen, E. (2016). A daily diary study of self-compassion, body image, and eating behavior in female college students. *Body Image*, 17, 152–160. <https://doi.org/10.1016/j.bodyim.2016.03.006>
- Leary, M. R., Tate, E. B., Adams, C. E., Allen, A. B., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology*, 92(5), 887–904. <https://doi.org/10.1037/0022-3514.92.5.887>
- Li, Y., Deng, J., Lou, X., Wang, H., & Wang, Y. (2020). A daily diary study of the relationships among daily self-compassion, perceived stress and health-promoting behaviours. *International Journal of Psychology*, 55(3), 364–372. <https://doi.org/10.1002/ijop.12610>
- Li, Y., Hu, Y., Yang, W., & Wang, Y. (2021). Daily interventions and assessments: The effect of online self-compassion meditation on

- psychological health. *Applied Psychology: Health and Well-Being*, 13(4), 906–921. <https://doi.org/10.1111/aphw.12278>
- Liu, J., Conner, M., & O'Connor, D. B. (2025). Trait self-compassion, daily stress and eating behaviours: A daily diary study. *Psychology and Health*, 1–16. <https://doi.org/10.1080/08870446.2025.2575070>
- Liu, J., Conner, M., Lainidi, O., Yu, S., & O'Connor, D. B. (in press). Self-compassion, stress and health behaviours: A systematic review and meta-analysis. *Health Psychology Review*.
- Liu, J., Conner, M., & O'Connor, D. B. (2026). *The effects of trait and daily self-compassion on daily stress, eating behaviours and sleep: A daily diary study* [Manuscript under review].
- McCance, R. A., & Widdowson, E. M. (2014). *McCance and Widdowson's the composition of foods*. Royal Society of Chemistry.
- Mey, L. K., Wenzel, M., Morello, K., Rowland, Z., Kubiak, T., & Tüscher, O. (2023). Be kind to yourself: The implications of momentary self-compassion for affective dynamics and well-being in daily life. *Mindfulness*, 14(3), 622–636. <https://doi.org/10.1007/s12671-022-02050-y>
- Moss, R. H., Conner, M., & O'Connor, D. B. (2021). Exploring the effects of daily hassles and uplifts on eating behaviour in young adults: The role of daily cortisol levels. *Psychoneuroendocrinology*, 129, Article 105231. <https://doi.org/10.1016/j.psyneuen.2021.105231>
- Moss, R. H., Conner, M., & O'Connor, D. B. (2025). Daily hassles and eating behaviours in adults: Exploring the buffering effects of daily uplifts. *Psychological Reports*, 128(2), 539–550. <https://doi.org/10.1177/00332941231161794>
- Neff, K. D. (2003a). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity*, 2(2), 85–101. <https://doi.org/10.1080/15298860309032>
- Neff, K. D. (2003b). The development and validation of a scale to measure self-compassion. *Self and Identity*, 2(3), 223–250. <https://doi.org/10.1080/1529886030909027>
- Neff, K. D. (2011). Self-compassion, self-esteem, and well-being. *Social and Personality Psychology Compass*, 5(1), 1–12. <https://doi.org/10.1111/j.1751-9004.2010.00330.x>
- Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self-compassion program. *Journal of Clinical Psychology*, 69(1), 28–44. <https://doi.org/10.1002/jclp.21923>
- Nicassio, P. M., Mendlowitz, D. R., Fussell, J. J., & Petras, L. (1985). The phenomenology of the pre-sleep state: The development of the pre-sleep arousal scale. *Behaviour Research and Therapy*, 23(3), 263–271. [https://doi.org/10.1016/0005-7967\(85\)90004-x](https://doi.org/10.1016/0005-7967(85)90004-x)
- O'Connor, D. B., Armitage, C. J., & Ferguson, E. (2015). Randomized test of an implementation intention-based tool to reduce stress-induced eating. *Annals of Behavioral Medicine*, 49(3), 331–343. <https://doi.org/10.1007/s12160-014-9668-x>
- O'Connor, D. B., Branley-Bell, D., Green, J. A., Ferguson, E., O'Carroll, R. E., & O'Connor, R. C. (2025). Effects of childhood trauma on sleep quality and stress-related variables in adulthood: Evidence from two multilevel studies. *Psychology and Health*, 40(6), 975–996. <https://doi.org/10.1080/08870446.2023.2281712>
- O'Connor, D. B., Jones, F., Conner, M., McMillan, B., & Ferguson, E. (2008). Effects of daily hassles and eating style on eating behavior. *Health Psychology*, 27(1, Suppl), S20–S31. <https://doi.org/10.1037/0278-6133.27.1.S20>
- O'Connor, D. B., & Rogerson, O. (2024). Loneliness, sleep and daily stress: Evidence of direct and indirect effects. *Applied Psychology: Health and Well-Being*, 16(4), 2302–2318. <https://doi.org/10.1111/aphw.12586>
- Park, C. L., Armeli, S., & Tennen, H. (2004). The daily stress and coping process and alcohol use among college students. *Journal of Studies on Alcohol*, 65(1), 126–135. <https://doi.org/10.15288/jsa.2004.65.126>
- Pennebaker, J. W., & Francis, M. E. (1996). Cognitive, emotional, and language processes in disclosure. *Cognition and Emotion*, 10(6), 601–626. <https://doi.org/10.1080/026999396380079>
- Phillips, W. J., & Hine, D. W. (2021). Self-compassion, physical health, and health behaviour: A meta-analysis. *Health Psychology Review*, 15(1), 113–139. <https://doi.org/10.1080/17437199.2019.1705872>
- Preacher, K. J., Curran, P. J., & Bauer, D. J. (2003). *Simple intercepts, simple slopes, and regions of significance in MLR 2-way interactions*. QuantPsy. <http://quantpsy.org/interact/hlm2.htm>
- Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the self-compassion scale. *Clinical Psychology and Psychotherapy*, 18(3), 250–255. <https://doi.org/10.1002/cpp.702>
- Rahimi Ardabili, H. (2018). *Effects of online behavioural interventions for improving dietary habits in people who are overweight or obese: A focus on self-compassion, and goal setting*. UNSW.
- Rivkin, I. D., Gustafson, J., Weingarten, I., & Chin, D. (2006). The effects of expressive writing on adjustment to HIV. *AIDS and Behavior*, 10(1), 13–26. <https://doi.org/10.1007/s10461-005-9051-9>
- Rockwood, N. J. (2017). *Advancing the formulation and testing of multilevel mediation and moderated mediation models* [Master's thesis, The Ohio State University]. OhioLINK Electronic Theses and Dissertations Center. [https://rave.ohiolink.edu/etdc/view?acc\\_num=osu1489578419777238](https://rave.ohiolink.edu/etdc/view?acc_num=osu1489578419777238)
- Schnepper, R., Reichenberger, J., & Blechert, J. (2020). Being my own companion in times of social isolation—A 14-day mobile self-compassion intervention improves stress levels and eating behavior. *Frontiers in Psychology*, 11, Article 595806. <https://doi.org/10.3389/fpsyg.2020.595806>
- Shiffman, S., Stone, A. A., & Hufford, M. R. (2008). Ecological momentary assessment. *Annual Review of Clinical Psychology*, 4(1), 1–32. <https://doi.org/10.1146/annurev.clinpsy.3.022806.091415>
- Sirois, F. M. (2015). A self-regulation resource model of self-compassion and health behavior intentions in emerging adults. *Preventive Medicine Reports*, 2, 218–222. <https://doi.org/10.1016/j.pmedr.2015.03.006>
- Sirois, F. M. (2020). The association between self-compassion and self-rated health in 26 samples. *BMC Public Health*, 20(1), Article 74. <https://doi.org/10.1186/s12889-020-8183-1>
- Sirois, F. M., & Hirsch, J. K. (2019). Self-compassion and adherence in five medical samples: The role of stress. *Mindfulness*, 10(1), 46–54. <https://doi.org/10.1007/s12671-018-0945-9>
- Smith, M. A., Hout, L. M., Rippon, D., O'Brien, N., Branley-Bell, D., Byrne-Davis, L., Collins, C., Gallagher, S., Kinman, G., Mark, A., O'Connor, D. B., Vedhara, K., Williams, G. P., & Wetherell, M. A. (2025). Facilitators and barriers to engaging in expressive writing among health and social care professionals. *PLoS One*, 20(8), Article e0328801. <https://doi.org/10.1371/journal.pone.0328801>
- Stanton, A. L., Danoff-Burg, S., Sworowski, L. A., Collins, C. A., Branstetter, A. D., Rodriguez-Hanley, A., Kirk, S. B., & Austenfeld, J. L. (2002). Randomized, controlled trial of written emotional expression and benefit finding in breast cancer patients. *Journal of Clinical Oncology*, 20(20), 4160–4168. <https://doi.org/10.1200/JCO.2002.08.521>
- Stults-Kolehmainen, M. A., & Sinha, R. (2014). The effects of stress on physical activity and exercise. *Sports Medicine*, 44(1), 81–121. <https://doi.org/10.1007/s40279-013-0090-5>
- Tausczik, Y. R., & Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of Language and Social Psychology*, 29(1), 24–54. <https://doi.org/10.1177/0261927X09351676>
- Terry, M. L., & Leary, M. R. (2011). Self-compassion, self-regulation, and health. *Self and Identity*, 10(3), 352–362. <https://doi.org/10.1080/15298868.2011.558404>
- Tomfohr, L., Ancoli-Israel, S., Pung, M. A., Natarajan, L., & Dimsdale, J. E. (2011). Uplifts and sleep. *Behavioral Sleep Medicine*, 9(1), 31–37. <https://doi.org/10.1080/15402002.2011.533992>
- Wallis, D. J., & Hetherington, M. M. (2009). Emotions and eating. Self-reported and experimentally induced changes in food intake under stress. *Appetite*, 52(2), 355–362. <https://doi.org/10.1016/j.appet.2008.11.007>

- Webb, J. B., & Forman, M. J. (2013). Evaluating the indirect effect of self-compassion on binge eating severity through cognitive-affective self-regulatory pathways. *Eating Behaviors*, 14(2), 224–228. <https://doi.org/10.1016/j.eatbeh.2012.12.005>
- Weller, L., & Avinir, O. (1993). Hassles, uplifts, and quality of sleep. *Skills*, 76(2), 571–576. <https://doi.org/10.2466/pms.1993.76.2.571>
- Woltman, H., Feldstain, A., MacKay, J. C., & Rocchi, M. (2012). An introduction to hierarchical linear modeling. *Tutorials in quantitative methods for psychology*, 8(1), 52–69. <https://doi.org/10.20982/TQMP.08.1.P052>
- Yarnell, L. M., Stafford, R. E., Neff, K. D., Reilly, E. D., Knox, M. C., & Mullarkey, M. (2015). Meta-analysis of gender differences in self-compassion. *Self and Identity*, 14(5), 499–520. <https://doi.org/10.1080/15298868.2015.1029966>

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