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# The development and validation of the Compassion Scale

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**Abstract**

This article presents a measure of compassion for others called the Compassion Scale (CS), that is based on Neff's (2003b) theoretical model of self-compassion. Compassion was operationalized as experiencing kindness, a sense of common humanity, mindfulness, and lessened indifference toward the suffering of others. Study 1 (N = 465) describes the development of potential scale items and the final 16 CS items chosen based on results from analyses using bifactor exploratory structural equation modeling. Study 2 (N = 510) cross-validates the CS in a second student sample. Study 3 (N = 80) establishes test-retest reliability. Study 4 (N = 1394) replicates results with a community sample, while Study 5 (N = 172) replicates results with a sample of meditators. Study 6 (N = 913) examines the finalized version of the CS in a community sample. Evidence regarding reliability, discriminant, convergent, construct, and known-groups validity for the CS is provided.

**The development and validation of the Compassion Scale**

Constructs stemming from Buddhist philosophical traditions such as mindfulness and self-compassion are being increasingly incorporated into Western psychology to address a variety of mental health concerns and promote well-being (e.g., De Vibe et al., 2017; Zessin, Dickhäuser & Garbade, 2015). Researchers and theorists have also been interested in investigating the impact of compassion for others as conceptualized from these perspectives, especially in terms of understanding the beneficial outcomes of loving-kindness and compassion meditation (e.g., Galante, Galante, Bekkers, & Gallacher, 2014; Luberto et al., 2018) as well as compassion training (Gonzalez-Hernandez et al., 2018; Jazaieri et al., 2018).

A generally accepted definition of compassion is that it is a felt response to suffering that involves caring and an authentic desire to ease distress (Goetz, Keltner & Simon-Thomas, 2010). From a Buddhist perspective, compassion is an outgrowth of wisdom that entails mindfully engaging with another's suffering, experiencing a kind response to their distress, and recognizing human interconnection with others that leads to a genuine desire to alleviate suffering (Feldman, 1995; Jinpa, 2015). Although research on compassion is increasing, to date there is not a self-report measure of compassion that represents the construct in a way that is consistent with a Buddhist perspective.

In this paper, we present a new measure of compassion that is drawn directly from the work of Neff (2003b) on self-compassion called the Compassion Scale (CS). Neff proposes a conceptualization of self-compassion derived from Buddhist principles that can also apply more generally to compassion for others. Self-compassion refers to how people relate to themselves in instances of both perceived inadequacy and general suffering. It is thought to consist of three sets of opposing components representing more compassionate and less uncompassionate self-responding along three different dimensions: emotional response (self-kindness vs. self-

judgment), cognitive understanding (common humanity vs. isolation) and paying attention to personal suffering (mindfulness vs. over-identification). These various elements are thought to interact as a system, and can be measured separately or as a total score. The Self-Compassion Scale (SCS; Neff, 2003a) is designed to measure this definition of the construct.

Our operational definition of compassion for others in the CS was similar to that of self-compassion – measuring compassion for others as entailing more compassionate and less uncompassionate responding to others in terms of emotional responding, cognitive understanding, and paying attention to suffering – but it necessarily differed in order to be more relevant to other-focused attitudes. Whereas self-compassion is highly relevant in contexts of perceived inadequacy, for instance, compassion was conceptualized as a being more focused on others' general life suffering. Kindness was conceptualized in terms of being caring toward and concerned for others who are in pain, accompanied by the desire to support those in need. Common humanity was thought to involve recognizing that all people experience hardship and a sense of connection to those who are suffering. Mindfulness was conceptualized as a type of balanced awareness that neither avoids nor gets lost in others pain, being willing to listen to and pay attention to others when they are suffering. In terms of uncompassionate responding to suffering, there were fewer direct parallels between compassion and self-compassion. For emotional responding it was thought to manifest as indifference rather than judgment; for cognitive understanding it was thought to manifest as feelings of separation from others rather than personal isolation; for attention it was thought to take the form of disengagement from others' pain rather than being over-identified with it. Compassion for others was therefore operationalized as involving kindness vs. indifference, common humanity vs. separation, and mindfulness vs. disengagement in response to the suffering of others. As with the SCS, these elements were thought to interact as a system, to be measured separately or as a total score.

## Study 1

The first study was designed to create a scale that captured our proposed theoretical definition of compassion. We also examined validity for the scale along a variety of dimensions. First, gender differences in compassion were examined in order to establish known-groups validity, given that women have been found to show more empathic concern than males (Eisenberg & Lennon, 1983). We also examined the link between the CS and the SCS. However, we did not expect a strong correlation between the two scales despite their structural similarity. Individuals tend to display more compassion to others than to themselves (Neff, 2003a), and the two constructs do not necessarily go hand in hand. Moreover, several researchers have found that self-compassion has a small or insignificant relationship with empathic concern or other measures of compassion (López, Sanderman, Ranchor & Schroevers, 2018; Neff & Pommier, 2013). Although the experience of compassion is similar when aimed at self or others, because of the differing levels of compassion shown to oneself versus others, a robust link between the two scales is not necessary for evidence of construct validity.

Correlational analyses were conducted with a number of other measures to provide support for construct validity, including convergent and discriminant validity. Discriminant validity was established by examining the degree to which the CS was correlated with a measure of social desirability, which we expected to be small. Convergent validity was examined through associations with two other commonly-used measures of compassion, a measure of compassionate love (Sprecher & Fehr, 2005) and empathic concern (Davis, 1980). In order to establish the nominological network for the CS (Cronbach & Meehl, 1955), we examined its association with functionally related constructs such as empathy, which underlies the ability for a compassionate response. We also expected to find a link with wisdom, given that compassion is seen as an outgrowth of wisdom from a Buddhist perspective, and social connectedness, which

should arise from feelings of interdependence with others. In addition, the CS was expected to be significantly linked with the "four immeasurables" – positive qualities experienced toward others that are emphasized in Buddhist psychology (loving-kindness, compassion, joy, equanimity) and inversely associated with negative qualities considered their opposite (hatred and cruelty).

## Method

### Participants and Procedures

Survey measures were administered on-line to a group of 465 students (65% women, $M_{age}$ = 20.6 years; $SD_{age}$ = 1.82). Participants were drawn from an educational-psychology subject pool at a large Southwestern University, and appropriate Institutional Review Board approval was obtained. The ethnic distribution of the sample was 53% Caucasian, 7% Asian, 21% Hispanic, 7% African American, 5% Mixed Ethnicity, and 7% other. No data were excluded from analyses.

### Measures

**The Compassion Scale**. The CS was developed by first creating a pool of items that corresponded to each of the proposed theoretical factors of compassion. A panel of eight experts (6 researchers and 2 practitioners familiar with Buddhist compassion practice) examined the initial pool of items to establish content validity. Items were examined for theoretical fit to both the specific subscale factor and general global compassion factor. Utilizing feedback from the experts, some of the items were re-written or dropped. The final pool included 80 items, with 11-15 potential items per subscale. These items were then given to participants, who were instructed to "Please read each statement carefully before answering. Indicate how often you feel or behave in the stated manner on a scale from 1 'Almost Never' to 5 'Almost Always.' Please answer according to what really reflects your experience rather than what you think your experience should be." Anchors were not provided for responses of 2, 3, or 4 to allow for more intuitive responses, mimicking the SCS. Our approach to selecting items for the CS also followed the

approach originally employed for the SCS (Neff, 2003a).

Exploratory Factor Analysis (EFA) was used to examine factor loadings within sets of items written for a particular subscale to select best-fitting items rather than using EFA to determine the factors themselves, appropriate in the case of an a priori theoretical factor structure. Four items were selected for the kindness, indifference, common humanity, separation, mindfulness, and disengagement subscales. Each item exceeded a factor loading of .50, suggesting that all items were good representations of their respective dimension. The 24 items selected for the present study are presented in Table 1. See Pommier (2010) for more information on CS item development. Note that indifference, separation and disengagement items were reverse-coded to represent lower levels of these three forms of uncompassionate responding.

**Self-Compassion**. The SCS (Neff, 2003a) is a 26-item measure in which responses are given on a five-point scale from 1 "Almost Never" to 5 "Almost Always" (no other anchors). It includes six subscales: Self-Kindness, "I try to be loving towards myself when I'm feeling emotional pain;" Self-Judgment, "I'm disapproving and judgmental about my own flaws and inadequacies;" Common Humanity, "When things are going badly for me, I see the difficulties as part of life that everyone goes through;" Isolation, "When I think about my inadequacies it tends to make me feel more separate and cut off from the rest of the world;" Mindfulness, "When something upsets me I try to keep my emotions in balance;" and Over-Identification, "When I'm feeling down I tend to obsess and fixate on everything that's wrong." Self-Judgment, Isolation, and Over-identification items are reverse-coded to represent a lack of uncompassionate self-responding, so that higher scores represent greater self-compassion. The SCS has good reliability and its factor structure was confirmed in 20 international samples (Neff et al., 2019).

**Social Desirability.** The Marlowe-Crowne Social Desirability Scale (Short Form) (Strahan & Gerbasi, 1972) is a well-known measure used to assess socially desirable responding.

**Compassionate Love for Strangers**. The Compassionate Love Scale (Sprecher & Fehr, 2005), strangers version was used which instructs participants to "think about all of humanity or humankind and specific strangers." An example item is "I would rather suffer myself than see someone else (a stranger) suffer."

**Empathic Concern.** The subscale of the Interpersonal Reactivity Index (Davis, 1980) that assesses empathetic concern for others was used. A sample item is: "I often have tender, concerned feelings for people less fortunate than me."

**Empathy.** The Questionnaire Measure of Empathic Tendency (Mehrabian & Epstein, 1972) is a commonly used measure to assess empathy. A sample item is: "I tend to get emotionally involved with a friend's problems."

**Wisdom.** The three-Dimensional Wisdom Scale (Ardelt, 2003) measures cognitive, reflective, and affective indicators of a Buddhist conceptualization of wisdom. Sample items include: "You can classify almost all people as either honest or crooked" (Cognitive); "I try to look at everybody's side of a disagreement before I make a decision" (Reflective); and "I can be comfortable with all kinds of people" (Affective).

**Social Connectedness.** The Social Connectedness Scale (Lee & Robbins, 1995) measures feelings of closeness between individuals and others including peers, strangers, friends and society in general. A sample item is: "I feel disconnected to the world around me."

**Positive and Negative Qualities.** The Self-Other Immeasurables Scale (SOFI; Kraus & Sears, 2008) assesses positive (i.e. friendly, joyful, accepting, compassionate) and negative (i.e., mean, angry, hateful, cruel) qualities toward others.

## Psychometric Analyses

**Analyses of the Factor Structure of the CS.** Neff et al. (2019) propose that the most theoretically consistent way to model the system-level interaction of the elements of compassion

is with bifactor Exploratory Structural Equation Modeling (ESEM). This framework was designed to account for two possible sources of construct-relevant psychometric multidimensionality, namely the assessment of global levels of compassion and specific levels of the various facets of compassion (Morin, Arens, & Marsh, 2016). Bifactor analyses model the direct association of a general factor and specific factors on individual item responses. ESEM (Marsh, Morin, Parker, & Kaur, 2014) allows for the explicit expression of item cross-loadings, which are to be expected in an interactive system. A recent study examining the factor structure of the SCS in 20 international samples using the bifactor ESEM framework found excellent fit for a model including one global factor and six specific factors in every sample examined (Neff et al., 2019). This finding has been supported in other research (Neff, Tóth-Király, & Colosimo, 2018; Tóth-Király, Bőthe, & Orosz, 2017), suggesting that bifactor-ESEM might also be the best fitting method to establish the factor structure of the CS.

For this reason, we examined a six-factor correlated model (representing the hypothesized six components of compassion), and a bifactor model (representing a general compassion factor as well as the six hypothesized components) using CFA as well as ESEM. All analyses were performed in Mplus 7.4 (Muthén & Muthén, 1998-2017) with the weighted least squares mean- and variance-adjusted estimator (WLSMV) as it is more suitable for ordered-categorical items with five or less response options (e.g., Bandalos, 2014).

We systematically tested and compared alternative models following the guidelines of Morin and colleagues (Morin et al., 2016; Morin, Arens, Tran, & Caci, 2016; Tóth-Király, Morin, Bőthe, Orosz, & Rigó, 2018). In CFA, items only load on one target factor, cross-loadings are not estimated, and factors are allowed to correlate. In ESEM, target loadings, cross-loadings, and factor correlations were all estimated, and cross-loadings are “targeted” to be close to zero (Browne, 2001). In bifactor-CFA, items loaded on one general-factor and one a priori specific-

factor, and all factors are specified as orthogonal. The bifactor-ESEM model was specified similarly, but cross-loadings were allowed on other specific-factors and "targeted" to be as close to zero as possible (a schematic representation of these models can be seen in Figure 1).

**Assessment of Model Fit.** Rather than relying on the chi-square test which is sensitive to sample-size (Marsh, Hau, & Grayson, 2005), commonly applied goodness-of-fit indices were examined with their respective thresholds (Hu & Bentler, 1999; Marsh et al., 2005): the Comparative Fit Index (CFI; ≥ .95 for good, ≥ .90 for acceptable), the Tucker–Lewis index (TLI; ≥.95 for good, ≥ .90 for acceptable), and the Root-Mean-Square Error of Approximation (RMSEA; ≤ .06 for good, ≤ .08 for acceptable) with its 90% confidence interval.

Analyses of data should not be based solely on fit indices, however. The close inspection of parameter estimates (e.g., factor loadings, cross-loadings and inter-factor correlations) may also reveal valuable information about measurement models (e.g., Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004; Morin, Arens, et al., 2016). When examining parameter estimates with first-order CFA and ESEM models, the emphasis should be on comparison of factor correlations, target loadings and cross-loadings for subscales. When examining a bifactor model, the general factor should also be well-defined by meaningful factor loadings. Additionally, reduced cross-loadings and some well-defined specific factors provide support for the bifactor model.

**Reliability.** We assessed reliability with Cronbach's alpha using the commonly-reported cut-off values of .70 and .80 (Nunnally, 1978). When a factor only includes a few items (Cortina, 1993; Nunnally & Bernstein, 1994), however, values between .60 and .70 are considered acceptable (Hair, Black, Babin, & Anderson, 2014). We also calculated 95% confidence intervals for each alpha value. Apart from Cronbach's alpha, McDonald's (1970) model-based composite reliability (CR) was also calculated from the standardized factor loadings and measurement errors (see Morin, Myers, & Lee, 2018 or Tóth-Király, Bőthe, Rigó, & Orosz, 2017) to more precisely

assess the reliability of the bifactor models (and the specific factors in particular).

In the case of the bifactor models, omega index (ω), which is a ratio of true score variance to total variance and corresponds to internal consistency reliability (Hancock & Mueller, 2001), represents the percentage of variance in total scores accounted for by the general factor in addition to subscale factors. Omega hierarchical (omegaH, $\omega_H$) is an index used to estimate the percentage of variance in the total scores that is attributed to the general factor. To determine the amount of reliable variance (i.e., not due to error) in CS scores attributed to the general factor, omegaH is divided by omega. Reise, Bonifay, and Haviland (2013) suggest 75% or higher as the ideal amount of variance to justify use of a total score. Finally, to estimate the remaining reliable variance attributed to specific factors, omegaH is subtracted from omega (Rodriguez et al., 2016).

**Associations with validity measures**. To assess the degree of association of the CS with various validity measures, partial correlations were conducted controlling for age and gender. Effect sizes were evaluated according to Cohen's (1988) benchmarks: correlations of $r$ = .10 - .30 were considered small, .30 - .50 were considered medium, and over .50 were considered large.

## Results and Discussion

### Factor Structure of the CS

We were mainly interested in examining fit for the theoretical model proposed for the CS, which posited six factors representing self-kindness, common humanity, mindfulness, indifference, separation, and disengagement.[1] The six-factor correlated CFA and ESEM models

[1] For comparison purposes, we also estimated 1-factor (i.e., general compassion), 2-factor (i.e., compassionate and uncompassionate responding), and 3-factor (i.e., kindness-indifference, common humanity-separation, and mindfulness-disengagement) CFA and ESEM models for the sake of completeness. All CFA models had poor fit to the data. ESEM models also demonstrated substantially worse fit when compared to their six-factor ESEM counterpart as per typical guidelines (Chen, 2007; Cheung & Rensvold, 2002): 1-factor model (ΔCFI > .083, ΔTLI > .085, ΔRMSEA > .049); 2-factor model (ΔCFI > .038, ΔTLI > .040, ΔRMSEA > .031); and 3-factor model (ΔCFI > .021, ΔTLI > .024, ΔRMSEA > .019). These results point to the conclusion that the hypothesized six-factor model was the most adequate for the initial stages of the analyses.

both had excellent fit (CFA: CFI = .954, TLI = .946, RMSEA = .060 [90% CI .055-.066]; ESEM: CFI = .992, TLI = .985, RMSEA = .031 [90% CI .022-.040]), though the former had identification issues. When examining the parameter estimates of the six-factor models (see Table S1 of the supplement), the six-factor CFA solution had factors that were well-defined by their target loadings ($\lambda$ = .445 to .863, *M* = .658), but correlations between these factors were so high (r = .419 to 1.021, *M* = .750) that their discriminant validity became questionable. While these correlations substantially decreased in the six-factor ESEM model (r = .021 to .615, *M* = .300), the factors representing uncompassionate responding (i.e., indifference, separation and disengagement) were not well-defined and multiple statistically significant cross-loadings were present that were either close to or larger than the target loadings. In particular, half of these items strongly loaded on other uncompassionate factors which could indicate that these items do not tap solely into their a priori constructs (see Table S1). This suggests that the three subscales representing uncompassionate responding were not well-differentiated.

Perhaps this is not surprising, given the overlap between being indifferent to others in pain, feeling separated from them, and being disengaged from their suffering. In many respects all three forms of uncompassionate response appear to be part of a general state of indifference, or the lack of a compassionate response to others' suffering. For this reason, we decided to collapse the 12 items representing the different forms of uncompassionate responding into a single four-item subscale termed "indifference." To select the optimal indicators of the indifference factor, we re-specified a four-factor ESEM model incorporating the three compassionate factors (with four items each) and one indifference factor (including 12 uncompassionate items). We then chose four items (out of 12) that (1) had strong target loadings, (2) relatively low cross-loadings, and (3) adequate content validity. (The eight items that were dropped are indicated in Table 1).

Note that several researchers (e.g., Hildebrandt, McCall & Singer, 2017; Neff & Germer, 2013; Sanchez, Haynes, Parada & Demir, 2018) have employed the 24-item CS initially developed by Pommier (2010) for her dissertation before it was reduced to its present 16-item form. This should have few implications for their findings, however, given that the 24 and 16-item versions were found to have a near perfect correlation ($r = .965$, $p < .001$).

The four-factor correlated first-order model had excellent fit using both CFA and ESEM (see Table 2). Factor loadings are presented in Table 3. While the four-factor CFA model had adequate fit, the four-factor ESEM model showed substantial improvement in terms of fit indices. Both the CFA and ESEM models had well-defined factors (CFA: $\lambda = .472$ to $.858$, $M = .685$; ESEM: $\lambda = .179$ to $.973$, $M = .584$), but the ESEM model resulted in decreased factor correlations ($r = .293$ to $.528$, $M = .459$) compared to the CFA one ($r = .520$ to $.811$, $M = .675$). The zero-order correlations between the four subscales (see Table 4) ranged from $r = .520$-$.811$ using standardized CFA factors and $r = .293$-$.528$ using standardized ESEM factors. All correlations were significant and large in the CFA analyses and most were medium to large in the ESEM analyses. This suggests that the subscale factors are operating in concert, but are not redundant.

We also examined a bifactor model to determine if use of a general score was warranted in addition to four subscale scores (see Table 2). The bifactor CFA and ESEM models had excellent fit, but the fit of the latter was superior and this model was not plagued by identification issues, supporting the adequacy of that solution. Parameter estimates for the bifactor ESEM model (see Table 3) revealed a well-defined general factor ($\lambda = .298$ to $.731$, $M = .562$, CR = .919) reflecting a global level of compassion. As for the specific factors, common humanity ($\lambda = .458$ to $.626$, $M = .515$, CR = .687) and mindfulness ($\lambda = .121$ to $.605$, $M = .406$, CR = .581) retained a higher degree of specificity (as apparent by the magnitude of factor loadings and higher levels of composite reliability) once the effect of the global factor was taken into account,

whereas kindness (λ = .056 to .519, *M* = .270, CR = .432) and indifference (λ = .025 to .767, *M* = .322, CR = .483) retained a lower degree of specificity.

Table 5 presents internal consistency reliability alphas for the total CS and four subscales. It also presents omega and omegaH indices for items in the bifactor in ESEM model. 89% of the reliable variance in item responding was attributable to a general factor of compassion, while 10% was attributable to the specific factors once the general factor was accounted for. This suggests that the specific factors assess relevant variance over and above a total score. These reliability estimates provide support for use of a total CS score and four subscale scores.

**Validity Analyses**

Descriptive statistics can be found in Table 6, including mean values for the overall CS score and four subscales. Most participants had high compassion scores that were above the midpoint of the scale, which ranged from 1 to 5. To establish known-groups validity, it was hypothesized that women would have more compassion than men. An independent-samples t-test indicated that women (*M* = 3.975, SD = 0.436) had significantly higher compassion scores than men (*M* = 3.643, SD = 0.483), $t(435) = 7.338$, $p < 001$, as expected (Eisenberg & Lennon, 1983). There was a nonsignificant association between CS scores and age, $r = -.060$, $p = .210$.

Table 7 presents partial correlations (controlling for age and gender) between the CS and related variables to provide convergent and discriminant validity. Findings indicated that there was a significant positive correlation between self-compassion and compassion for others, but that the size of the correlation was small. Although it might be expected that the link would be stronger given that the scales are structurally and theoretically similar, because individuals treat themselves and others quite differently, this is not the case (Neff, 2003a). In general, individuals had higher levels of compassion for others (*M* = 3.858, SD = 0.480) than self-compassion (*M* = 3.029, SD = 0.560). Findings are similar to those of Neff and Pommier (2013) who found that

self-compassion and other-focused concern were unrelated among students.

There was a small but significant correlation between the CS and socially desirable responding. Given that compassion itself is a socially desirable construct, this finding was not entirely surprising. Still, the small size of the link suggests that the CS is not overly tainted by social desirability, providing discriminant validity. The CS had a small to medium correlation with compassionate love for strangers. This may be because use of the word "strangers" undermined its association with the CS, which taps into feelings of shared humanity and increased feelings of familiarity and connection. The CS evidenced a large association with empathic concern, supporting convergent validity. The CS had a medium to large correlation with empathy, a medium correlation with cognitive and reflective wisdom, a large correlation with affective wisdom, and a medium correlation with social connectedness and the Buddhist "immeasurable" positive and negative qualities towards others, supporting construct validity. These findings suggest that the CS measures compassion as hypothesized.

## Study 2

Study 2 was designed to cross-validate the factor structure of the CS in a second student sample. We again examined the association of scores on the CS with social desirability. To further establish discriminant validity, we also included a measure of secure attachment, which assesses a positive self-other schema but is distinct from compassion so should have a small association. To provide additional support for construct validity, we included measures of the functionally related constructs of altruism and forgiveness. Compassion can lead to altruistic behavior arising from the motive to alleviate suffering, although the two are distinct and contextual factors may impact their link (Batson, Van Lange, Ahmad, & Lishner, 2003). For instance, when listening to another who is experiencing suffering, a compassionate individual might choose *not* to take action, especially in the form of problem-solving or advice-giving

(Goldsmith & Fitch, 1997). Forgiveness involves a prosocial motivational change that takes place after an interpersonal transgression such that an individual becomes less vengeful and more benevolent towards the transgressor (McCullough, 1991). While people may sometimes forgive without experiencing compassion, forgiveness is more likely when there is something in the situation that allows the victim to have compassion for the transgressor (Worthington et al., 1991). Thus, we expected to find small to medium positive correlations of the CS with altruism and forgiveness.

Finally, a measure of the Big Five personality traits was included so as to be able to position the CS within a larger personality framework. It was expected that the CS would have the strongest association with agreeableness, which assesses the tendency to be compassionate and cooperative toward others rather than suspicious or antagonistic. We made no predictions regarding the association of the CS with other aspects of personality, however, and this examination was exploratory.

## Method

### Participants and Procedures

Survey measures were administered on-line to a group of 510 students (53% women; *M* age = 21.4 years; *SD* = 3.29) who were drawn from an educational psychology subject pool at a large Southwestern university. The ethnic breakdown of the sample was 50% Caucasian, 20% Asian, 16% Hispanic, 6% African American, 4% Mixed Ethnicity, 2% Foreign, and 2% other. No data were excluded from analyses.

### Measures

The CS and social desirability (Strahan & Gerbasi, 1972) were included (see Study 1).

**Secure Attachment.** The Relationship Questionnaire (Bartholomew & Horowitz, 1991), measures secure attachment (e.g., “It is easy for me to become emotionally close to others…”)

**Altruism.** The Self-Report Altruism Scale (Rushton, Chrisjohn & Fekken, 1981) assesses behaviors that are helpful, kind, and selfless: e. g. "I have given a stranger a lift in my car."

**Forgiveness.** The Heartland Forgiveness Scale (Thompson et al., 2005) assesses forgiveness of others, e.g. "I continue to be hard on others who have hurt me."

**NEO Five Factor (NEO-FFI).** The NEO Five Factor Inventory (Costa & McCrae, 1990) measures the big five personality traits: extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience.

## Results and Discussion

Model fit for the four-factor correlated first-order and bifactor CFA and ESEM models are presented in Table 2, and factor loadings for this study are presented in Table S2 of the supplement. As found in Study 1, the bifactor ESEM model was superior to other solutions in terms of model fit. Moreover, the specific factors of Common Humanity (λ = .490 to .568, *M* = .528, CR = .697) and Mindfulness (λ = .340 to .570, *M* = .415, CR = .594) retained a higher degree of specificity apart from the well-defined global factor (λ = .250 to .731, *M* = .587, CR = .931), while Kindness (λ = .280 to .541, *M* = .395, CR = .662) retained a moderate degree and Indifference (λ = .021 to .706, *M* = .305, CR = .511) retained a lower amount of specificity.

Omega and omegaH indices for items in the bifactor ESEM model suggested that 91% of the reliable variance in item responding was attributable to a general factor of compassion, while 9% was attributable to the specific factors once the general factor was accounted for (see Table 5). Overall, findings replicated well for this cross-validation student sample.

Table 6 indicates that once again average compassion levels were above the midpoint of the scale. Similar to the first study, an independent-samples t-test indicated that women have significantly more compassion (*M* = 4.008, SD = 0.453) than men (*M* = 3.688, SD = 0.479), *t*(508) = 7.745, *p* < 001. The link between the CS and age was nonsignificant (*r* = .019, *p* = .668).

Partial correlations (see Table 7) indicated that the CS had a small but significant association with social desirability and secure attachment, helping to establish discriminate validity. It also had a significant positive relationship with the functionally related constructs of altruism and forgiveness, as expected, although the size of the correlations was small. Because the CS does not assess helping behavior as an essential aspect of compassion, it does not appear to tap into altruism substantially. Similarly, because items do not focus on responses to the transgressions of others, it does not appear to be strongly related to forgiveness. As predicted, the CS was found to have the strongest association with the personality trait of agreeableness, which partly entails compassionate attitudes toward others. While we did not make predictions regarding the other personality traits, we found that the CS had a moderate positive correlation with extraversion, a small positive link with conscientiousness and openness to experience, and a small negative link with neuroticism. Although it is unclear exactly why these patterns emerged, it may be in part because compassion is a type of dispositional positive affect (Shiota, Keltner & John, 2006), and positive affect tends to be positively linked to extraversion, openness to experience, and conscientiousness and negatively linked to neuroticism (McCrae & Costa, 1991). Overall, findings add further evidence of construct validity for the CS established in Study 1.

## Study 3

The purpose of Study 3 was to conduct test-retest reliability to support the stability of the CS over approximately one month.

## Method

### Participants

Participants included 80 undergraduate students (46% women; *M* age = 31.4 years; *SD* = 14.78) from a small Midwestern University who volunteered to fill out the CS in class at the beginning (Time 1) and at the end (Time 2) of a month-long course. The ethnic breakdown of the

sample was 59% Caucasian, 11% African American, 9% Asian, 9% Hispanic, and 9% other. No data were excluded from analyses.

## Results and Discussion

Good test-retest reliability was found between Time 1 and Time 2 for the CS total score ($r = .81$, $p < .01$). Subscale test-retest correlations were: Kindness ($r = .75$, $p < .01$), Common Humanity ($r = .62$, $p < .01$), Mindfulness ($r = .60$, $p < .01$), and Indifference ($r = .75$, $p < .01$). These findings suggest that the CS is a stable of measure of compassion over time.

## Study 4

The purpose of Study 4 was to cross-validate the CS factor structure with a community sample, given that undergraduates are not representative of the general population. We expected the link between the CS and SCS to be stronger in the community sample, given that Neff and Pommier (2013) found a stronger link between self-compassion and other-focused concern in community adults compared to undergraduates. To see if findings of construct validity would be replicated in a community sample, we examined the association of scores on the CS with social desirability, empathic concern, altruism and forgiveness. To further establish divergent validity, we included a measure of submissive compassion (Caterino et al., 2014) which is motivated by desire for social acceptance rather than true concern for others and should not be significantly related to the CS. To provide additional support for convergent validity, we gave participants a measure of compassionate love focused more on humanity than on strangers (Hwang, Plante, & Lackey, 2008). To further establish construct validity, we included measures of mindfulness and fear of compassion. While mindfulness refers to the ability to pay attention in an open, accepting manner to present moment experience in general (Bishop et al., 2004), in the context of compassion it involves paying balanced attention to the experience of suffering in particular (Neff & Dahm, 2014). Fear of compassion entails the belief that compassion means showing weakness,

that it lets people off the hook, or makes one vulnerable to being taken advantage of (Gilbert, McEwan, Matos & Rivis, 2011). We expected that individuals with higher CS scores to have greater mindfulness and less fear of compassion.

## Method

### Participants and Procedures

The community sample included 1,394 participants (65% women; $M_{age}$ = 36 years; *SD* = 12.88) recruited from Mechanical Turk. Participants needed to meet specified criteria (18 years or older and a US citizen) and were paid 75 cents to complete the study. Mechanical Turk respondents have been shown to provide reliable data at low levels of remuneration (Buhrmester, Kwang, & Gosling, 2011). The ethnic distribution of the sample was 77% Caucasian, 9% African American, 6% Asian, 6% Hispanic, and 2% other. No data were excluded from analyses.

### Measures

In addition to the CS, participants were given measures used in prior studies: social desirability (Strahan & Gerbasi, 1972); self-compassion (Neff, 2003a); empathic concern (Davis, 1980); altruism (Rushton, Chrisjohn & Fekken, 1981) and forgiveness (Thompson et al., 2005).

**Compassionate Love for Humanity.** The Santa Clara Brief Compassion Scale (Hwang et al., 2008) is a short version of the Compassionate Love Scale (strangers version) (Sprecher & Fehr, 2005) but instructs participants "when completing the following items, please think about all of humanity or humankind.". A sample item is "I often have tender feelings toward people when they seem to be in need."

**Mindfulness.** The Mindfulness Attention and Awareness Scale (MAAS) (Brown & Ryan, 2003) measures the lack of thinking or acting in ways that could be considered "mindless" e.g. "I rush through activities without being really attentive to them."

**Fear of Compassion for Others Scale.** Gilbert et. al. (2011) developed this scale to

assess fears such as being exploited by others or feeling gullible. An example is: "People will take advantage of you if you are too forgiving and compassionate."

**Submissive Compassion Scale.** Caterino et al. (2014) developed this scale to help differentiate real compassion from acting in a way to please other people. A sample item is: "I worry that if I am not caring enough, people will reject me."

## Results and Discussion

Model fit for the four-factor correlated first-order and bifactor CFA and ESEM models are presented in Table 2, and factor loadings are presented in Table S3. The bifactor ESEM representation was superior to the alternative ones and included a well-defined global compassion for others factor (λ = .240 to .823, *M* = .629, CR = .943) and a specific Common Humanity factor with higher amount of specificity (λ = .456 to .691, *M* = .579, CR = .780). Indifference was also relatively well-specified (λ = .456 to .509, *M* = .480, CR = .732), whereas Kindness (λ = .016 to .265, *M* = .170, CR = .275) and Mindfulness (λ = .184 to .416, *M* = .286, CR = .389) retained a lower amount of specificity.

Table 5 presents reliability estimates and internal consistency indices for the CS. Omega and omegaH indices indicated that 78% of the reliable variance was attributable to the general factor and 20% to specific factors. Overall, findings replicated well for this community sample.

Mean compassion levels for the sample were high (see Table 6). Similar to the student samples, an independent-samples t-test indicated that women had significantly higher compassion levels (*M* = 4.060, SD = 0.580) than men (*M* = 3.734, SD = 0.707), $t(1380) = -9.208$, $p < 001$. In this sample, there was a small but significant link between the CS and age ($r = .114$, $p < .001$), suggesting that compassion increases slightly as a function of experience and maturity.

There was a small but significant association between the CS and SCS in this community sample, slightly larger than what was found with undergraduates (see Table 7), replicating prior

research by Neff and Pommier (2013). Because young adults presumably have less worldly experience than older adults, the experience of compassion for oneself and others may be poorly integrated. As individuals learn more about suffering with development, however, they may come to form a more unified understanding of compassion so that there is a stronger link between compassion for self and others. Still, individuals tended to have higher levels of compassion for others ($M$ = 3.946, SD = 0.646) than self-compassion ($M$ = 2.991, SD = 0.757).

The CS had a small association with social desirability and an insignificant link to submissive compassion, helping to establish discriminant validity. It had a large association with empathic concern and compassionate love for humanity, establishing convergent validity. In terms of functionally-related constructs, there was a stronger link with altruism and forgiveness in the community sample compared to students, suggesting that compassion may increasingly lead to helping behavior and forgiveness with age. There was also a positive link to mindfulness and a negative link to fear of compassion, providing additional support for construct validity.

## Study 5

The purpose of Study 5 was to validate the factor structure of the CS with a sample of individuals practicing Buddhist meditation, and to establish known-groups validity. Meditators should evidence higher compassion levels than students or community samples given that meditation is assumed to cultivate these qualities. Correlational analyses between the CS and constructs examined in prior studies were conducted to further establish construct validity.

### Method

#### Participants and Procedures

Participants included 172 individuals practicing Buddhist meditation (72% women; $M$ age = 47.5 years; $SD$ = 12.04). Recruitment emails were sent to several Buddhist groups including the Seattle Insight Meditation Society, Spirit Rock, and Insight Meditation Society. Participants

completed surveys online, and were told that $5.00 per participant for the first 100 participants would be donated to a scholarship fund at a meditation retreat center. The ethnic breakdown of the sample was 85% Caucasian, 3% Asian, 2% Hispanic, 3% Mixed Ethnicity, 4% Foreign, and 3% other. The sample was 53% Buddhist, 26% no religious affiliation, 12% Christian, 64% other, 3% Jewish. Meditation experience ranged from less than a year to over 20 years, ($M$ = 6.0 years), and was practiced on average 5-6 times per week. No data were excluded from analyses.

**Measures**

In addition to the CS, participants were given measures used in prior studies: self-compassion (Neff, 2003a), social desirability (Strahan & Gerbasi, 1972), compassionate love for humanity (Hwang et al., 2008), empathic concern (Davis, 1980); altruism (Rushton et al., 1981); forgiveness (Thompson et al., 2005); and mindfulness (Brown & Ryan, 2003).

## Results and Discussion

Model fit for the correlated four-factor first-order and bifactor models using both CFA and ESEM are presented in Table 2, and factor loadings are presented in Table S4. Results were remarkably similar to the previous studies: the bifactor ESEM representation provided to be the most optimal one with a well-defined global compassion factor (λ = .028 to .710, $M$ = .461, CR = .884) and a Common Humanity factor with high specificity (λ = .632 to .786, $M$ = .693, CR = .693). Importantly, the other three specific factors also retained a moderate amount of specificity once the global factor was accounted for: Kindness (λ = .246 to .566, $M$ = .358, CR = .536), Mindfulness (λ = .158 to .614, $M$ = .413, CR = .583), and Indifference (λ = .307 to .637, $M$ = .405, CR = .584).

Internal consistency (see Table 5) was somewhat lower than found with other samples, especially for the mindfulness subscale. It is unclear whether this is sample-specific, or because the meditation experience of participants led them to understand items differently. Regardless,

findings suggest that for meditators it may be safer to use a total CS score rather than examining subscale scores independently until more research is conducted with this population. Omega and omegaH indicated that 89% of the reliable variance was attributable to the general factor and 11% to the specific factors. Overall, findings replicated well for this meditator sample.

Mean values of the total CS score and subscale scores tended to be higher for meditators than for other groups (see Table 6). A one-way ANOVA compared differences in total CS scores between groups - students (combined from Study 1 and 2), community adults (Study 4), and meditators (Study 5). There was a significant difference for the three groups, [$F(2, 2028) = 44.06$, $p < .001$]. Post hoc comparison using the Tukey HSD test indicated that total CS scores for meditators were significantly higher than for students and community adults, providing known group validity. In terms of gender differences in compassion among meditators, an independent-samples t-test indicated that women ($M = 4.421$, SD = 0.317) had slightly higher levels of compassion than men ($M = 4.296$, SD = 0.300), $t(170) = -2.368$, $p < 05$. The CS was not found to be significantly associated with age: $r = -.085$, $p = .267$.

Table 7 indicates that a small to medium correlation was found between the CS and SCS, consistent with prior research (Neff & Pommier, 2013). Meditators still had higher levels of compassion for others ($M = 4.386$, SD = 0.317) than self-compassion ($M = 3.581$, SD = 0.573). The CS had a small correlation with social desirability and a medium association with compassionate love, empathic concern and mindfulness. The CS had a small positive association with altruism and forgiveness. Overall, these results support the discriminant, convergent, and construct validity of the CS among meditators.

## Study 6

Study 6 examined a slightly revised version of CS items with minor wording changes, given that we felt some items could be potentially confusing (Strauss et al., 2016). For instance,

there were certain items with time qualifiers such as “sometimes” or ‘usually’ that might conflict with instructions to "Indicate how often you feel or behave in the stated manner on a scale from 1 ‘Almost Never’ to 5 ‘Almost Always," (see Table 1) making responses somewhat difficult to interpret. We also slightly changed the item order to better distribute items representing various components. Although we felt it was unlikely these tiny changes would substantially impact responses, we felt they might slightly reduce error. The finalized CS is presented in Table 8.

We once again included measures of self-compassion, social desirability, compassionate love and submissive compassion, to determine if the pattern of associations would be similar using the finalized items as was found in previous studies. We also examined three new scales to further establish construct validity. For convergent validity, we included a measure of dispositional compassion (Shiota et al., 2006) and a measure of compassionate engagement and action (Gilbert et al., 2017) designed to measure compassion as sensitivity to suffering and a commitment to try to alleviate it. In terms of functionally related constructs, we included a different measure of mindfulness (Feldman, Hayes, Kumar, Greeson & Laurenceaul, 2007) that assesses acceptance as well as awareness of present moment experience. We also used attention checks in data collection to ensure the reliability of results (Hauser, & Schwarz, 2016).

## Method

### Participants and Procedures

Participants who met specified criteria (18 years or older and a US citizen) were recruited from Mechanical Turk and paid $2.00 for completion of the study. Initially, a total of 993 participants filled out a survey, but participants who missed more than one attention check, who took on average less than three seconds per question, and/or had excessive missing data were dropped from the final dataset. In total, 913 participants were retained (45% female; $M_{age}$ = 36.41; *SD* = 11.14). In terms of ethnicity, 72.4% percent identified as White, 13.6% as

Black/African-American, 5.9% as Asian American, 6% as Latino/Hispanic, and 2.1% other.

**Measures**

In addition to the finalized version of the CS, participants were given measures from prior studies: self-compassion (Neff, 2003a); social desirability (Strahan & Gerbasi, 1972); and compassionate love for humanity (Hwang et al., 2008);

**Mindfulness.** The Cognitive and Affective Mindfulness Scale – Revised (Feldman et al., 2007) assesses the ability to be aware of present moment experience, and accept that experience without judgment. Sample items include "I am able to focus on the present moment" and "I am able to accept the thoughts and feelings I have."

**Compassionate Disposition.** The Compassion subscale is part of the Dispositional Positive Emotions Scale (Shiota et al., 2006). A sample item is "When I see someone hurt or in need, I feel a powerful urge to take care of them).

**Compassionate Engagement and Action.** This scale (Gilbert et al., 2017) measures compassion for others with two subscales, engagement (i.e., "I am motivated to engage and work with other peoples' distress when it arises") and action (e.g., "I direct attention to what is likely to be helpful to others").

## Results and Discussion

Model fit indices for estimated models are presented in Table 2, while standardized factor loadings are presented in Table S5. Results corroborated findings of previous studies in that the bifactor ESEM model showed the best fit to the data. Moreover, apart from the global compassion factor ($\lambda$ = .307 to .810, *M* = .630, CR = .944), Common Humanity ($\lambda$ = .481 to .643, *M* = .535, CR = .728) and Indifference ($\lambda$ = .390 to .724, *M* = .515, CR = .752) also retained a relatively high amount of specificity, while Kindness ($\lambda$ = .203 to .324, *M* = .280, CR = .503) and Mindfulness ($\lambda$ = .035 to .531, *M* = .218, CR = .315) had less specificity.

Given that items were slightly modified in Study 6, we thought it was important to examine whether the final CS cross-validated adequately. For this reason, participants (N = 913) were divided into two subsamples ($N_1$ = 457; $N_2$ = 456) with a highly equal gender ratio. Results (provided on request) for each sub-sample were almost identical to those reported here for the total sample. Specifically, while the four-factor CFA model had adequate fit in both subsamples, the four-factor ESEM models outperformed these CFA models in terms of improved model fit as well as decreased factor correlations. Similar to the total sample, the bifactor CFA solutions could not be identified, further suggesting that this solution is not an adequate representation. The bifactor ESEM model had superior model fit relative to all other models. Finally, similar to the total sample, the general compassion factor as well as Common Humanity and Indifference retained a higher amount of specificity, while the Kindness and Mindfulness factors retained a lower amount of specificity. Thus, the combined sample was used for subsequent analyses.

Omega and omegaH indicated that 90% of the reliable variance was attributable to the general factor and 9% to the specific factors (see Table 5). Overall, findings replicated well using the finalized CS items. Means scores were also almost identical for the finalized version of the CS compared to the version used with community participants in Study 4 (see Table 6).

As with the other community sample, there was a small to medium association between the CS and the SCS (see Table 7). Individuals also tended to have higher levels of compassion for others (*M* = 3.981, SD = 0.645) than self-compassion (*M* = 3.210, SD = 0.840). Associations were non-significant or small between the CS and submissive compassion and social desirability, establishing discriminate validity. We found a large correlation between the CS and compassionate love, the positive disposition of compassion and the compassionate engagement and action scales, providing evidence for convergent validity. Finally, we found a medium correlation with the functionally-related construct of mindfulness.

## General Discussion

Across multiple studies, the 16-item CS was shown to have strong psychometric properties. Using bifactor ESEM, a state-of-the-art statistical technique that is ideal for assessing multidimensional constructs, the CS was found to represent a general factor of compassion for others, comprised of four subscales representing greater Kindness, Common Humanity, Mindfulness, and lessened Indifference. The factor structure of the CS was supported in six separate samples, including student, community, and meditator samples, providing confidence in the factor structure of the CS. Although the CS was based on the theoretical model of self-compassion posited by Neff (2003b) and represented in the SCS (Neff, 2003a), there are differences as well as similarities between the two measures. In both the SCS and the CS, compassion for self and others is represented by the three components of kindness, common humanity, and mindfulness. In the SCS, uncompassionate attitudes toward the self are represented by the three distinct components of self-judgment, isolation, and over-identification. In the CS, however, the three components hypothesized to represent uncompassionate attitudes toward others - indifference, separation, and disengagement - were not found to be empirically distinct using the ESEM framework, and were therefore collapsed into the single component of indifference. This suggests that uncompassionate responding takes a slightly different form when aimed at the self or others. Findings also suggest that ESEM has some advantages over CFA in the early stages of questionnaire development because unlike CFA, ESEM has the ability to detect potential item redundancy (see also Orosz et al., 2018 or Tóth-Király, Bőthe, Tóth-Fáber, Hága, & Orosz, 2017).

Cronbach's alpha and test-retest analyses all supported the conclusion that overall reliability for the CS was good, and reliability for the subscales was also generally adequate. Omega values indicated that the majority of reliable variance in item responding was explained

by a total score, ranging from .78 to .90 across samples. This is well over the 75% suggested by Reise et al. (2013) to justify use of a total score. Although the amount of variance attributable to the specific factors was smaller, they contributed enough to suggest that their use is warranted.

Support was found for the construct validity of scores on the CS, including divergent and convergent validity. Discriminant validity was established by findings that the CS had small or non-significant correlations with social desirability, secure attachment, and submissive compassion. This indicates that the CS can be differentiated from constructs which might appear similar to compassion on the surface but which are actually distinct. Convergent validity was demonstrated by findings that the CS had medium to large correlations with compassionate love for humanity, empathic concern, the disposition of compassion, and compassionate engagement and action. Correlations between the CS and these other measures of compassion, while substantial, were not so large as to indicate redundancy.

Construct validity was also established in terms of the nomological network in which the CS is positioned. The CS was associated with functionally related constructs in a way that was consistent with theory: significant positive correlations with empathy, wisdom, social connectedness, positive other-focused qualities, altruism, forgiveness, and mindfulness, and significant negative correlations with fear of compassion and negative other-focused qualities. In terms of personality, the CS was negatively linked to neuroticism and positively linked to openness to experience, conscientiousness, agreeableness and extraversion, with the strongest association observed for agreeableness, as expected. The CS also demonstrated known-groups validity: women had higher scores than men, and meditators had higher scores than students and community adults.

Across samples, the size of the link between the CS and the SCS was small to medium. This may seem surprising given that compassion and self-compassion draw from the same

general definition of compassion and share the same theoretical structure. Yet, it is possible to have differing levels of compassion depending on whether compassion is directed to the self or others. In general, people tend to be much more compassionate to others than to themselves, and this trend was found across samples. One useful aspect to having two scales to measure compassion for self and others that have a similar structure and use the same endpoints is that it enables a comparison of the amount of compassion shown to self or others along the same five-point scale. In future research, it could be interesting to examine the discrepancy between self and other compassion as a within-person variable to determine whether degree of discrepancy impacts wellbeing in terms of outcomes such as caregiver fatigue. Another fruitful avenue of research would be to compare compassion for self and others in terms of their relative impact on personal and interpersonal wellbeing.

The CS appears to have strong psychometric properties. It also has most of the elements that Strauss and colleagues (2016) have proposed are ideal in a measure of compassion: 1) Recognizing suffering; 2) Understanding the universality of human suffering; 3) Feeling moved by a person's suffering and connecting with their distress; 4) Tolerating uncomfortable feelings aroused in response to the suffering person and remaining open to and accepting of the person suffering; and 5) Feeling motivated to act to alleviate suffering. Kindness taps into elements three and five: caring about another's suffering and the motivation to alleviate it. Note that the CS assesses the motivation to alleviate suffering in terms of the desire to ease distress rather than altruistic behavior per se, however, given the important distinction between altruism and compassion. Common Humanity items tap into element two: understanding the universality of suffering. Mindfulness and reverse-coded Indifference items tap into elements one and four: recognizing suffering and tolerating the uncomfortable feelings it arouses.

In many ways the CS does a better job of meeting the criteria proposed by Strauss et al.

(2016) than other commonly used compassion scales. For instance, while measures of Compassionate Love (Hwang et al., 2008; Sprecher & Fehr, 2005), Dispositional Compassion (Shiota et al., 2006) and Empathic Concern (Davis, 1980) assess elements three and five, caring about suffering and wanting to help, they do not adequately assess the first and fourth criteria - mindfully recognizing suffering or tolerating the distress of others. While the engagement subscale of the compassionate engagement and action scales (Gilbert et al., 2017) does a better job of tapping into elements one and four, and while the action subscale taps directly into element five, neither subscale adequately assesses the third criteria of care and warmth. Most importantly, none of the existing compassion measures explicitly assess the second criteria - recognition of common humanity - the way the CS does. We would argue that it is especially important for a compassion measure to assess recognition of common humanity in the experience of suffering in order to distinguish compassion from pity, its "near enemy." In Buddhist thought, near enemies are states of mind that seem similar on the surface but are actually distinct. Pity fosters a sense of distance and disconnection, while compassion has connection at its core. From this perspective then, an adequate measure of compassion must assess the element of shared humanity. Finally, a strength of the CS compared to other compassion measures is that it is multidimensional, so it can be used to investigate the different elements of compassion.

In summary, the strong psychometric properties, evidence for content, construct, divergent, convergent, and known-groups validity along with overall good reliability suggest that the CS is a solid measure of compassion. This is needed given the emerging interest in studying loving-kindness and compassion meditation (e.g. Galante et al., 2014), as well as training programs such as Compassion Cultivation Training (e.g., Jazaieri et al., 2014), Cognitively-Based Compassion Training (Desbordes et al., 2014) or Mindful Self-Compassion (Neff & Germer, 2013). These programs all emphasize the universal nature of human suffering, which is one

reason why the CS may be an especially appropriate measure to examine their benefits.

## Limitations and Future Directions

While this article addresses an important need for the development and validation of a measure of compassion consistent with a Buddhist conceptualization of the construct, any self-report assessment will have limitations in assessing the trait of compassion. Given that most individuals prefer to think of themselves as having good qualities like compassion, social desirability bias in responding is a potential problem, and should probably be controlled for when using the CS. Moreover, the use of self-report measures of compassion should be combined with other assessment methods, such as observations by partners or therapists. Finally, participants in all six of the studies tended to be predominately white, and the validity of the CS should be examined in more diverse populations.

Given that a general compassion factor accounted for substantial variance in responses and the specific factors explained additional variance, researchers can simply average CS items in the form of a total score or separate subscale scores if they so choose. However, it may be helpful to use the bifactor ESEM framework to disaggregate the general and specific components when conducting analyses in the future. This would allow for a more precise estimation of compassion given that bifactor ESEM models adequately weight items. To facilitate this process, automated scoring procedures could be developed, or else the Mplus statistical package which provides standardized measurements as a function of the sample mean and standard deviation (Perreira et al., 2018). Also, it should be noted that group-level results do not always translate well to intra-individual variations (Fisher, Medaglia, & Jeronimus, 2018), and future studies are needed to address this issue. Nevertheless, findings suggest that the CS is a valid measure of compassion that should be helpful for researchers wanting to examine trait levels of compassion for others.

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Table 1

*Items representing the six compassion components selected from an initial pool of 80 items*

| IC | Items |
|---|---|
| K | If I see someone going through a difficult time, I try to be caring toward that person. |
| K | I like to be there for others in times of difficulty. |
| K | My heart goes out to people who are unhappy. |
| K | When others feel sadness, I try to comfort them. |
| CH | Everyone feels down sometimes, it is part of being human. |
| CH | It's important to recognize that all people have weaknesses and no one's perfect. |
| CH | Despite my differences with others, I know that everyone feels pain just like me. |
| CH | Suffering is just a part of the common human experience. |
| M | I pay careful attention when other people talk to me. |
| M | I notice when people are upset, even if they don't say anything. |
| M | I tend to listen patiently when people tell me their problems. |
| M | When people tell me about their problems, I try to keep a balanced perspective on the situation. |
| I | Sometimes when people talk about their problems, I feel like I don't care.* |
| I | Sometimes I am cold to others when they are down and out.* |
| I | I don't concern myself with other people's problems. |
| I | When others are feeling troubled, I usually let someone else attend to them.* |
| S | I don't feel emotionally connected to people in pain.* |
| S | I feel detached from others when they tell me their tales of woe.* |
| S | When I see someone feeling down, I feel like I can't relate to them.* |
| S | I can't really connect with other people when they're suffering. |
| D | When people cry in front of me, I often don't feel anything at all.* |
| D | I often tune out when people tell me about their troubles.* |
| D | I don't think much about the concerns of others. |
| D | I try to avoid people who are experiencing a lot of pain. |

*Note:* IC: Item Component; K: Kindness; CH: Common Humanity; M: Mindfulness; I: Indifference; S: Separation; D: Disengagement; * *Item dropped in the final 16-item CS*

Table 2

*Goodness-of-fit indices for the four-factor solution of the Compassion Scale*

| Sample | Models | $\chi^2$ | df | CFI | TLI | RMSEA | 90% CI for RMSEA |
|---|---|---|---|---|---|---|---|
| Study 1 (N = 465) | 4-factor CFA | 320.65* | 98 | .956 | .946 | .070 | .061-.078 |
| | 4-factor ESEM | 120.038* | 62 | .988 | .978 | .045 | .033-.057 |
| | Bifactor CFA† | 278.027* | 88 | .962 | .949 | .068 | .059-.077 |
| | Bifactor ESEM | 75.243 | 50 | .995 | .988 | .033 | .016-.048 |
| Study 2 (N = 510) | 4-factor CFA | 343.499* | 98 | .970 | .964 | .070 | .062-.078 |
| | 4-factor ESEM | 162.800* | 62 | .988 | .976 | .056 | .046-.067 |
| | Bifactor CFA | 262.315 | 88 | .979 | .971 | .062 | .054-.071 |
| | Bifactor ESEM | 65.317 | 50 | .998 | .996 | .025 | .000-.040 |
| Study 4 (N = 1394) | 4-factor CFA | 955.094* | 98 | .963 | .955 | .079 | .075-.084 |
| | 4-factor ESEM | 186.039* | 62 | .995 | .990 | .038 | .032-.044 |
| | Bifactor CFA† | 1156.464* | 88 | .954 | .938 | .093 | .089-.098 |
| | Bifactor ESEM | 103.199* | 50 | .998 | .995 | .028 | .020-.035 |
| Study 5 (N = 172) | 4-factor CFA | 202.382* | 98 | .901 | .879 | .079 | .063-.094 |
| | 4-factor ESEM | 77.675 | 62 | .985 | .971 | .038 | .000-.063 |
| | Bifactor CFA | no identification | | | | | |
| | Bifactor ESEM | 54.036 | 50 | .996 | .991 | .022 | .000-.055 |
| Study 6 (N = 913) | 4-factor CFA | 556.201* | 98 | .971 | .964 | .072 | .066-.077 |
| | 4-factor ESEM | 156.668* | 62 | .994 | .988 | .041 | .033-.049 |
| | Bifactor CFA | no identification | | | | | |
| | Bifactor ESEM | 87.986* | 50 | .998 | .994 | .029 | .019-.039 |

*Note.* CFA: Confirmatory factor analysis; ESEM: Exploratory structural equation modeling; $\chi^2$: weighted least square chi-square test of exact fit; df: Degrees of freedom; CFI: Comparative fit index; TLI: Tucker-Lewis index; RMSEA: Root mean square error of approximation; 90% CI: 90% confidence interval of the RMSEA; †: model did not converge, suggesting overparameterization; *$p < .01$.

Table 3

*Standardized parameter estimates for the four-factor models of Study 1 (N = 465)*

| | | CFA | ESEM | | | | Bifactor CFA | | Bifactor ESEM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IC | Item | SF (λ) | K (λ) | CH (λ) | M (λ) | I (λ) | GF (λ) | SF (λ) | GF (λ) | K (λ) | CH (λ) | M (λ) | I (λ) |
| K | CS6 | **.791**** | **.656**** | .062 | .105* | .140** | **.692**** | **1.355** | **.718**** | **.519**** | .024 | .036 | .007 |
| K | CS8 | **.788**** | **.417**** | .222** | .141** | .188** | **.772**** | **.038** | **.731**** | **.124*** | .099* | .046 | .018 |
| K | CS16 | **.624**** | **.532**** | .213** | .068 | .110* | **.602**** | **.053** | **.650**** | **.056** | .035 | .136** | .108** |
| K | CS24 | **.788**** | **.578**** | .036 | .295** | .107* | **.713**** | **.156** | **.701**** | **.380**** | .081* | .141** | .002 |
| CH | CS11 | **.700**** | .034 | **.776**** | .059 | .089 | **.475**** | **.657**** | **.450**** | .023 | **.626**** | .089* | .029 |
| CH | CS15 | **.858**** | .192** | **.674**** | .102* | .010 | **.659**** | **.461**** | **.625**** | .009 | **.511**** | .085* | .035 |
| CH | CS17 | **.712**** | .101* | **.565**** | .082 | .052 | **.553**** | **.386**** | **.495**** | .078 | **.458**** | .086* | .044 |
| CH | CS20 | **.472**** | .102 | **.569**** | .055 | .100* | **.306**** | **.465**** | **.298**** | .118* | **.465**** | .003 | .086* |
| M | CS4 | **.736**** | .164** | .099* | **.831**** | .098* | **.591**** | **.429**** | **.603**** | .023 | .063 | **.605**** | .120** |
| M | CS9 | **.562**** | .174** | .261** | **.179**** | .049 | **.530**** | **.003** | **.452**** | .094 | .198** | **.121*** | .014 |
| M | CS13 | **.838**** | .013 | .012 | **.809**** | .097 | **.682**** | **.677**** | **.624**** | .014 | .096* | **.549**** | .088* |
| M | CS21 | **.574**** | .106 | .254** | **.421**** | .075 | **.493**** | **.207**** | **.374**** | .078 | .290** | **.350**** | .133* |
| I | CS14 | **.576**** | .443** | .079 | .055 | **.311**** | **.471**** | **.259**** | **.635**** | .146* | .253** | .173** | **.025** |
| I | CS19 | **.646**** | .344** | .055 | .126* | **.516**** | **.507**** | **.413**** | **.595**** | .039 | .151** | .160** | **.191*** |
| I | CS22 | **.721**** | .261** | .065 | .029 | **.973**** | **.583**** | **.444**** | **.573**** | .034 | .102* | .043 | **.767**** |
| I | CS23 | **.573**** | .056 | .123* | .118* | **.536**** | **.450**** | **.399**** | **.467**** | .051 | .104* | .055 | **.306**** |

*Note.* CFA: confirmatory factor analysis; ESEM: exploratory structural equation modeling; IC: Item Component; SF: Loading on respective specific factor when cross-loadings constrained to zero; K: Kindness; CH: Common Humanity; M: Mindfulness; I: Indifference; CS: Compassion Scale; GF: General factor; λ: standardized factor loadings; Target loadings in bold.; *$p < .05$; **$p < .01$.

Table 4

*Standardized factor correlations for the four-factor CFA (below the diagonal) and ESEM (above the diagonal) solutions of the Compassion Scale*

| | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Study 1 (N = 465) Student | | | | |
| 1. Kindness | — | .293** | .444** | .512** |
| 2. Common humanity | .653** | — | .520** | .455** |
| 3. Mindfulness | .742** | .704** | — | .528** |
| 4. Indifference | .811** | .520** | .622** | — |
| Study 2 (N = 510) Student | | | | |
| 1. Kindness | — | .436** | .620** | .646** |
| 2. Common humanity | .659** | — | .473** | .387** |
| 3. Mindfulness | .750** | .687** | — | .564** |
| 4. Indifference | .778** | .513** | .680** | — |
| Study 4 (N = 1394) Community | | | | |
| 1. Kindness | — | .506** | .775** | .792** |
| 2. Common humanity | .629** | — | .575** | .253** |
| 3. Mindfulness | .873** | .741** | — | .571** |
| 4. Indifference | .843** | .393** | .687** | — |
| Study 5 (N = 172) Meditator | | | | |
| 1. Kindness | — | .126 | .321** | .539** |
| 2. Common humanity | .343** | — | .119 | .153 |
| 3. Mindfulness | .810** | .409** | — | .349** |
| 4. Indifference | .761** | .330** | .695** | — |
| Study 6 (N = 913) Community | | | | |
| 1. Kindness | — | .502** | .792** | .698** |
| 2. Common humanity | .613** | — | .583** | .287** |
| 3. Mindfulness | .890** | .792** | — | .572** |
| 4. Indifference | .767** | .448** | .651** | — |

*Note.* $^{**}p < .01$. Indifference items were reverse-coded so that higher scores represent less indifference.

Table 5

*Reliability Indices - Cronbach alphas and Omega values*

| | Study 1 Student (N = 465) | Study 2 Student (N = 510) | Study 4 Community (N = 1394) | Study 5 Meditator (N = 172) | Study 6 Community (N =913) |
|---|---|---|---|---|---|
| Cronbach alphas with their 95% confidence intervals | | | | | |
| Compassion (Total) | .865 (.846-.882) | .880 (.864-.895) | .900 (.892-.908) | .769 (.715-.816) | .896 (.886-.906) |
| Kindness | .765 (.728-.798) | .828 (.802-.851) | .804 (.787-.820) | .635 (.537-.717) | .852 (.836-.867) |
| Common humanity | .725 (.682-.764) | .714 (.671-.752) | .766 (.745-.785) | .660 (.569-.736) | .755 (.728-.780) |
| Mindfulness | .688 (.639-.732) | .718 (.676-.756) | .719 (.694-.742) | .469 (.326-.588) | .748 (.720-.774) |
| Indifference | .667 (.615-.714) | .734 (.694-.770) | .839 (.825-.852) | .683 (.598-.754) | .792 (.769-.813) |
| Omega and omega hierarchical estimator for the general compassion factor in the bifactor ESEM models | | | | | |
| ω | .927 | .948 | .907 | .938 | .949 |
| ωH | .827 | .857 | .710 | .833 | .858 |
| GF | .892 | .904 | .783 | .888 | .904 |
| SF | .100 | .091 | .197 | .105 | .091 |

*Note.* ω: omega; ωH: omega hierarchical; GF: reliable variance explained by the general factor; SF: reliable variance explained by the specific factors.

Table 6

*Descriptive Statistics for CS total and subscale scores*

| | Study 1 Student N = 465 | Study 2 Student N = 510 | Study 4 Community N = 1394 | Study 5 Meditator N = 172 | Study 6 Community N = 913 |
|---|---|---|---|---|---|
| CS Total | *M* = 3.858 | *M* = 3.858 | *M* = 3.946 | *M* = 4.386 | *M* = 3.981 |
| | *SD* = 0.480 | *SD* = 0.492 | *SD* = 0.646 | *SD* = 0.317 | *SD* = 0.645 |
| Kindness | *M* = 3.876 | *M* = 3.888 | *M* = 3.951 | *M* = 4.390 | *M* = 3.909 |
| | *SD* = 0.639 | *SD* = 0.665 | *SD* = 0.856 | *SD* = 0.459 | *SD* = 0.854 |
| Com. Hum | *M* = 4.037 | *M* = 4.065 | *M* = 4.118 | *M* = 4.654 | *M* = 4.130 |
| | *SD* = 0.638 | *SD* = 0.608 | *SD* = 0.758 | *SD* = 0.427 | *SD* = 0.752 |
| Mindfulness | *M* = 3.930 | *M* = 4.021 | *M* = 3.907 | *M* = 4.401 | *M* = 4.000 |
| | *SD* = 0.584 | *SD* = 0.585 | *SD* = 0.731 | *SD* = 0.408 | *SD* = 0.731 |
| Indifference | *M* = 3.586 | *M* = 3.458 | *M* = 3.817 | *M* = 4.100 | *M* = 3.809 |
| | *SD* = 0.602 | *SD* = 0.628 | *SD* = 0.880 | *SD* = 0.531 | *SD* = 0.927 |

*Note.* Indifference items were reverse-coded so that higher scores represent less indifference.

Table 7

*Partial Correlations (controlling for age and gender) of the CS with other measures*

| | Study 1 Student N = 465 | Study 2 Student N = 510 | Study 4 Community N = 1394 | Study 5 Meditator N = 172 | Study 6 Community N = 913 |
|---|---|---|---|---|---|
| Self-Compassion | .127* | | .281** | .297** | .314** |
| Discriminant Validity | | | | | |
| Social Desirability | .109* | .270** | .160** | .145 | .086* |
| Secure Attachment | | -.006 | | | |
| Submissive Compassion | | | -.039 | | .035 |
| Convergent Validity | | | | | |
| Compassionate Love Strangers | .292** | | | | |
| Compassionate Love Humanity | | | .653** | .469** | .608** |
| Empathic Concern | .599** | | .737** | .479** | |
| Compassionate Disposition | | | | | .671** |
| Compassionate Engagement | | | | | .682** |
| Compassionate Action | | | | | .626** |
| Functionally Related Constructs | | | | | |
| Empathy | .498** | | | | |
| Wisdom-Affective | .543** | | | | |
| Wisdom-Reflective | .369** | | | | |
| Wisdom-Cognitive | .429** | | | | |
| Social Connectedness | .391** | | | | |
| Positive Other-Focused Qualities | .464** | | | | |
| Negative Other-Focused Qualities | -.315** | | | | |
| Altruism | | .095* | .271** | .281** | |
| Forgiveness | | .102* | .469** | .223** | |
| Mindfulness | | | .337** | .362** | .360** |
| Fear of Compassion | | | -.258** | | |
| Big Five Personality Traits | | | | | |
| Neuroticism | | -.161** | | | |
| Openness to Experience | | .237** | | | |
| Conscientiousness | | .272** | | | |
| Agreeableness | | .527** | | | |
| Extraversion | | .400** | | | |

*Note.* *$p \leq .05$, **$p \leq .001$

**Table 8**

*The Compassion Scale (CS)*

1. I pay careful attention when other people talk to me about their troubles.
2. If I see someone going through a difficult time, I try to be caring toward that person.
3. I am unconcerned with other people's problems.
4. I realize everyone feels down sometimes, it is part of being human.
5. I notice when people are upset, even if they don't say anything.
6. I like to be there for others in times of difficulty.
7. I think little about the concerns of others.
8. I feel it's important to recognize that all people have weaknesses and no one's perfect.
9. I listen patiently when people tell me their problems.
10. My heart goes out to people who are unhappy.
11. I try to avoid people who are experiencing a lot of pain.
12. I feel that suffering is just a part of the common human experience.
13. When people tell me about their problems, I try to keep a balanced perspective on the situation.
14. When others feel sadness, I try to comfort them.
15. I can't really connect with other people when they're suffering.
16. Despite my differences with others, I know that everyone feels pain just like me.

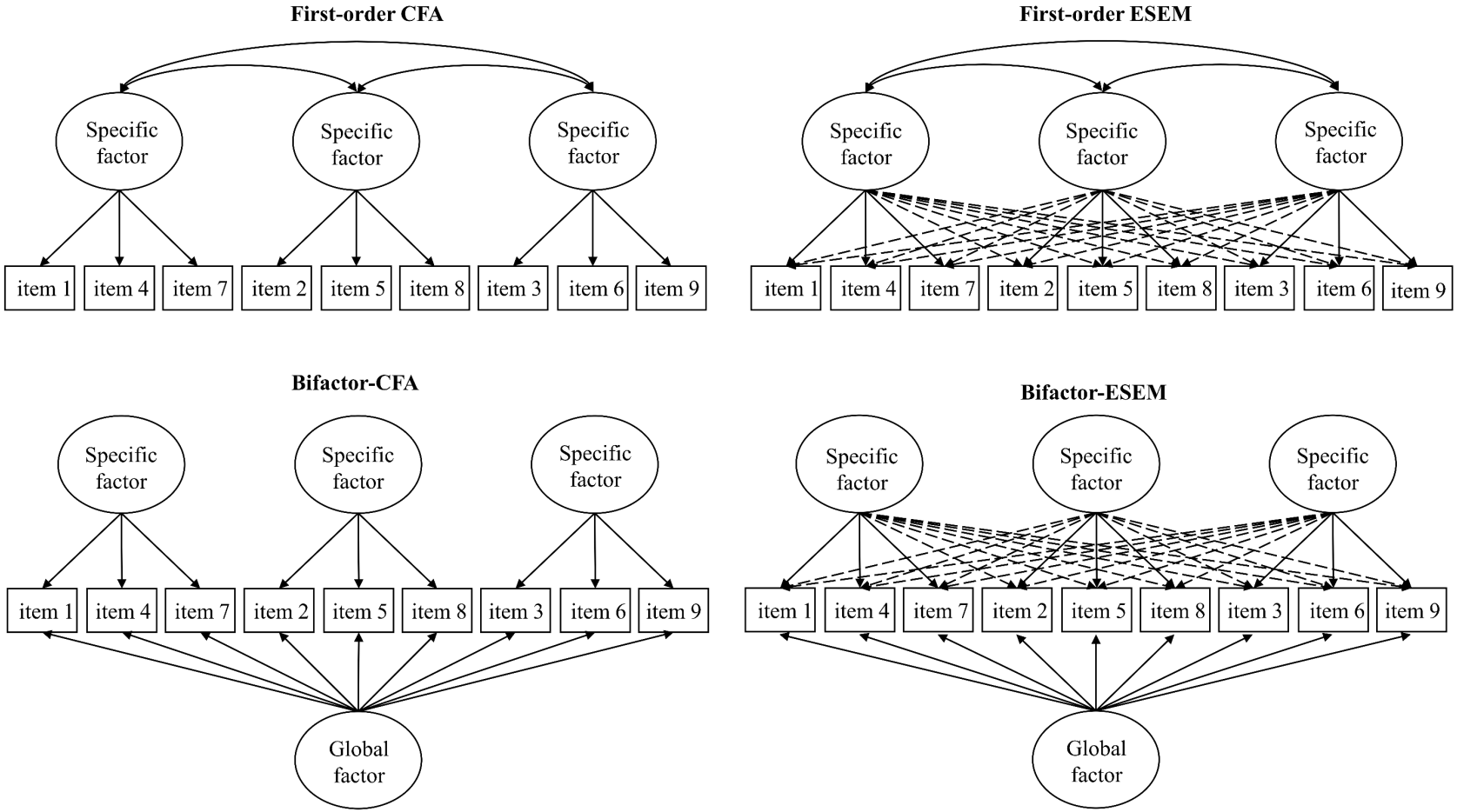


**Figure 1.**
*Schematic comparison of typical first-order and bifactor CFA and ESEM models*
*Note.* CFA: confirmatory factor analysis; ESEM: exploratory structural equation modeling; Circles represent latent variables; squares represent scale items. One-headed full arrows represent factor loadings, one-headed dashed arrows represent cross-loadings, and two-headed arrows represent factor correlations.

**Online supplementary materials for:**

The development and validation of the Compassion Scale

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Table S1

*Standardized parameter estimates for the six-factor CFA and ESEM models of Study 1 (N = 465)*

| | | CFA | ESEM | | | | | |
|---|---|---|---|---|---|---|---|---|
| IC | Item | SF (λ) | K (λ) | CH (λ) | M (λ) | I (λ) | S (λ) | D (λ) |
| K | CS6 | **.790**** | **.700**** | .135** | .053 | .141** | .021 | .018 |
| K | CS8 | **.790**** | **.414**** | .159** | .185** | .015 | .163** | .132* |
| K | CS16 | **.623**** | **.532**** | .194** | .039 | .111 | .023 | .092 |
| K | CS24 | **.788**** | **.689**** | .071 | .221** | .141* | .111* | .059 |
| CH | CS11 | **.693**** | .029 | **.782**** | .041 | .067 | .003 | .095 |
| CH | CS15 | **.863**** | .265** | **.608**** | .134* | .021 | .010 | .032 |
| CH | CS17 | **.722**** | .120* | **.495**** | .130* | .088 | .117* | .068 |
| CH | CS20 | **.445**** | .009 | **.583**** | .052 | .032 | .108 | .148** |
| M | CS4 | **.767**** | .091 | .023 | **.816**** | .126* | .165** | .063 |
| M | CS9 | **.551**** | .181* | .061 | **.328**** | .403** | .191** | .291* |
| M | CS13 | **.840**** | .022 | .129** | **.727**** | .097 | .092 | .054 |
| M | CS21 | **.521**** | .012 | .245** | **.496**** | .210** | .080 | .117 |
| I | CS2 | **.688**** | .205** | .070 | .073 | **.349**** | .237** | .189 |
| I | CS12 | **.630**** | .252** | .066 | .014 | **.355**** | .147** | .122 |
| I | CS14 | **.598**** | .385** | .071 | .052 | **.191*** | .215** | .086 |
| I | CS18 | **.619**** | .348** | .251** | .329** | **.001** | .216** | .027 |
| S | CS3 | **.719**** | .122 | .035 | .028 | .061 | **.523**** | .149* |
| S | CS5 | **.681**** | .029 | .039 | .066 | .261** | **.509**** | .064 |
| S | CS10 | **.449**** | .114 | .125* | .014 | .039 | **.354**** | .321** |
| S | CS22 | **.712**** | .104* | .157** | .071 | .014 | **.872**** | .243** |
| D | CS1 | **.531**** | .073 | .104* | .060 | .177 | .147* | **.478**** |
| D | CS7 | **.692**** | .051 | .019 | .416** | .491** | .159** | **.073** |
| D | CS19 | **.572**** | .387** | .032 | .139* | .194* | .351** | **.103** |
| D | CS23 | **.500**** | .172** | .072 | .165** | .027 | .412** | **.199*** |

*Note.* CFA: confirmatory factor analysis; ESEM: exploratory structural equation modeling; IC: Item Component; SF: Loading on respective specific factor when cross-loadings constrained to zero; K: Kindness; CH: Common Humanity; M: Mindfulness; I: Indifference; S: Separation; D: Disengagement; GF: General factor; λ: standardized factor loadings; Target loadings are in bold; Red indicates that target loadings are lower than ideal (i.e., < .300) as recommended by Morin, Myers, and Lee (2018).; Orange indicates that cross-loadings are close to (Δ < .100; Morin et al., 2018) or higher than the target loadings.; *$p$ < .05; **$p$ < .01.

Table S2

*Standardized parameter estimates for the four-factor models of Study 2 (N = 510)*

| | | CFA | ESEM | | | | Bifactor CFA | | Bifactor ESEM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IC | Item | SF (λ) | K (λ) | CH (λ) | M (λ) | I (λ) | GF (λ) | SF (λ) | GF(λ) | K (λ) | CH (λ) | M (λ) | I (λ) |
| K | CS6 | **.890**** | **.771**** | .137** | .040 | .115* | **.795**** | **.431**** | **.731**** | **.541**** | .094** | .031 | .096** |
| K | CS8 | **.789**** | **.599**** | .031 | .243** | .008 | **.746**** | **.203**** | **.721**** | **.280**** | .007 | .100* | .110** |
| K | CS16 | **.704**** | **.555**** | .212** | .120* | .159** | **.659**** | **.206**** | **.629**** | **.283**** | .144** | .112** | .032 |
| K | CS24 | **.833**** | **.805**** | .036 | .042 | .069 | **.740**** | **.451**** | **.715**** | **.476**** | .058 | .046 | .022 |
| CH | CS11 | **.627**** | .030 | **.679**** | .014 | .013 | **.418**** | **.589**** | **.417**** | .023 | **.568**** | .015 | .043 |
| CH | CS15 | **.915**** | .066 | **.662**** | .238** | .036 | **.692**** | **.482**** | **.615**** | .071 | **.556**** | .201** | .027 |
| CH | CS17 | **.740**** | .200** | **.601**** | .038 | .023 | **.555**** | **.451**** | **.512**** | .103* | **.497**** | .039 | .030 |
| CH | CS20 | **.429**** | .000 | **.591**** | .079 | .031 | **.247**** | **.500**** | **.250**** | .024 | **.490**** | .032 | .028 |
| M | CS4 | **.767**** | .041 | .030 | **.881**** | .016 | **.630**** | **.721**** | **.634**** | .021 | .007 | **.570**** | .037 |
| M | CS9 | **.555**** | .169* | .135** | **.503**** | .162** | **.471**** | **.256**** | **.433**** | .050 | .119** | **.353**** | .098 |
| M | CS13 | **.833**** | .233** | .035 | **.689**** | .031 | **.710**** | **.314**** | **.701**** | .071 | .021 | **.396**** | .115** |
| M | CS21 | **.586**** | .068 | .304** | **.347**** | .106 | **.522**** | **.151**** | **.397**** | .106* | .278** | **.340**** | .148* |
| I | CS14 | **.592**** | .262** | .157** | .127* | **.343**** | **.501**** | **.232**** | **.697**** | .226** | .251** | .212** | **.097** |
| I | CS19 | **.720**** | .262** | .038 | .128* | **.323**** | **.635**** | **.163**** | **.679**** | .013 | .002 | .064 | **.021** |
| I | CS22 | **.766**** | .097 | .060 | .019 | **.897**** | **.609**** | **.506**** | **.644**** | .003 | .014 | .011 | **.706**** |
| I | CS23 | **.722**** | .016 | .098** | .009 | **.823**** | **.550**** | **.654**** | **.609**** | .043 | .132** | .024 | **.395**** |

*Note.* CFA: confirmatory factor analysis; ESEM: exploratory structural equation modeling; IC: Item Component; SF: Loading on respective specific factor when cross-loadings constrained to zero; K: Kindness; CH: Common Humanity; M: Mindfulness; I: Indifference; CS: Compassion Scale; GF: General factor; λ: standardized factor loadings; Target loadings in bold.; *$p < .05$; **$p < .01$.

Table S3

*Standardized parameter estimates for the four-factor models of Study 4 (N = 1394)*

| | | CFA | ESEM | | | | Bifactor CFA | | Bifactor ESEM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IC | Item | SF (λ) | K (λ) | CH (λ) | M(λ) | I(λ) | GF (λ) | SF (λ) | GF (λ) | K (λ) | CH (λ) | M(λ) | I(λ) |
| K | CS6 | **.831**** | **.672**** | .044 | .193** | .026 | **.839**** | **.044** | **.808**** | **.190**** | .047* | .086** | .019 |
| K | CS8 | **.790**** | **.612**** | .044 | .198** | .048 | **.798**** | **.042** | **.756**** | **.207**** | .027 | .095** | .078** |
| K | CS16 | **.783**** | **.670**** | .115** | .116** | .175** | **.795**** | **.893** | **.803**** | **.016** | .015 | .205** | .068** |
| K | CS24 | **.854**** | **.899**** | .018 | .070* | .050 | **.853**** | **.013** | **.823**** | **.265**** | .036 | .057* | .118** |
| CH | CS11 | **.729**** | .002 | **.777**** | .020 | .048 | **.443**** | **.653**** | **.422**** | .139** | **.691**** | .081** | .000 |
| CH | CS15 | **.886**** | .045 | **.644**** | .232** | .007 | **.603**** | **.554**** | **.632**** | .124** | **.518**** | .098** | .127** |
| CH | CS17 | **.804**** | .114 | **.594**** | .107* | .031 | **.555**** | **.504**** | **.598**** | .159** | **.456**** | .004 | .111** |
| CH | CS20 | **.508**** | .070 | **.803**** | .136** | .017 | **.231**** | **.660**** | **.240**** | .053 | **.651**** | .003 | .080** |
| M | CS4 | **.671**** | .115* | .021 | **.753**** | .120** | **.601**** | **.391**** | **.593**** | .006 | .048* | **.416**** | .023 |
| M | CS9 | **.611**** | .315** | .085* | **.350**** | .107* | **.562**** | **.174**** | **.559**** | .082* | .110** | **.184**** | .077** |
| M | CS13 | **.798**** | .097 | .030 | **.641**** | .131** | **.719**** | **.350**** | **.721**** | .009 | .010 | **.319**** | .033 |
| M | CS21 | **.622**** | .065 | .285** | **.420**** | .044 | **.565**** | **.199**** | **.546**** | .011 | .267** | **.224**** | .098** |
| I | CS14 | **.782**** | .012 | .072** | .021 | **.815**** | **.599**** | **.558**** | **.617**** | .010 | .162** | .017 | **.509**** |
| I | CS19 | **.845**** | .021 | .024 | .055 | **.778**** | **.675**** | **.493**** | **.700**** | .080** | .100** | .022 | **.456**** |
| I | CS22 | **.804**** | .053 | .142** | .019 | **.780**** | **.650**** | **.444**** | **.644**** | .000 | .021 | .000 | **.463**** |
| I | CS23 | **.781**** | .172** | .057* | .020 | **.667**** | **.619**** | **.470**** | **.603**** | .170** | .103** | .005 | **.491**** |

*Note.* CFA: confirmatory factor analysis; ESEM: exploratory structural equation modeling; IC: Item Component; SF: Loading on respective specific factor when cross-loadings constrained to zero; K: Kindness; CH: Common Humanity; M: Mindfulness; I: Indifference; CS: Compassion Scale; GF: General factor; λ: standardized factor loadings; Target loadings in bold.; *$p < .05$; **$p < .01$.

Table S4

*Standardized parameter estimates for the four-factor models of Study 5 (N = 172)*

| | | CFA | ESEM | | | | Bifactor CFA | | Bifactor ESEM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IC | Item | SF (λ) | K (λ) | CH (λ) | M (λ) | I (λ) | GF (λ) | SF (λ) | GF (λ) | K (λ) | CH (λ) | M (λ) | I (λ) |
| K | CS6 | **.705**** | **.548**** | .098 | .347** | .017 | — | — | **.604**** | **.352**** | .142 | .235** | .025 |
| K | CS8 | **.723**** | **.555**** | .114 | .233** | .126 | — | — | **.665**** | **.246*** | .149* | .078 | .008 |
| K | CS16 | **.535**** | **.682**** | .266** | .138 | .056 | — | — | **.389**** | **.566**** | .244** | .083 | .087 |
| K | CS24 | **.693**** | **.545**** | .074 | .094 | .299** | — | — | **.669**** | **.269*** | .028 | .238** | .067 |
| CH | CS11 | **.642**** | .268* | **.639**** | .135 | .214* | — | — | **.240*** | .271* | **.632**** | .047 | .008 |
| CH | CS15 | **.861**** | .210 | **.713**** | .185 | .006 | — | — | **.410**** | .142 | **.680**** | .156 | .001 |
| CH | CS17 | **.825**** | .371** | **.709**** | .075 | .036 | — | — | **.345**** | .284** | **.673**** | .045 | .020 |
| CH | CS20 | **.528**** | .194 | **.794**** | .053 | .011 | — | — | **.028** | .073 | **.786**** | .006 | .020 |
| M | CS4 | **.538**** | .047 | .192* | **.611**** | .143 | — | — | **.428**** | .008 | .199* | **.507**** | .109 |
| M | CS9 | **.579**** | .179 | .126 | **.037** | .366** | — | — | **.574**** | .047 | .090 | **.158** | .021 |
| M | CS13 | **.741**** | .244** | .059 | **.592**** | .087 | — | — | **.710**** | .042 | .003 | **.372**** | .172** |
| M | CS21 | **.251**** | .117 | .349** | **.557**** | .182 | — | — | **.096** | .008 | .366** | **.614**** | .008 |
| I | CS14 | **.764**** | .176 | .037 | .020 | **.635**** | — | — | **.551**** | .184** | .032 | .081 | **.637**** |
| I | CS19 | **.600**** | .061 | .186* | .054 | **.595**** | — | — | **.505**** | .108 | .174* | .026 | **.322**** |
| I | CS22 | **.743**** | .031 | .082 | .084 | **.725**** | — | — | **.679**** | .193* | .053 | .093 | **.307**** |
| I | CS23 | **.604**** | .165 | .082 | .053 | **.547**** | — | — | **.477**** | .094 | .080 | .063 | **.354**** |

*Note.* CFA: confirmatory factor analysis; ESEM: exploratory structural equation modeling; IC: Item Component; SF: Loading on respective specific factor when cross-loadings constrained to zero; K: Kindness; CH: Common Humanity; M: Mindfulness; I: Indifference; CS: Compassion Scale; GF: General factor; λ: standardized factor loadings; Target loadings in bold.; *$p < .05$; **$p < .01$.

Table S5

*Standardized parameter estimates for the four-factor models of Study 6 (N = 913)*

| | | CFA | ESEM | | | | Bifactor CFA | | Bifactor ESEM | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| IC | Item | SF (λ) | K (λ) | CH (λ) | M (λ) | I (λ) | GF (λ) | SF (λ) | GF (λ) | K (λ) | CH (λ) | M (λ) | I (λ) |
| K | CS6 | **.876**** | **.646**** | .054* | .128** | .109** | — | — | **.799**** | **.301**** | .023 | .082** | .109** |
| K | CS8 | **.803**** | **.637**** | .137** | .210** | .092** | — | — | **.773**** | **.203**** | .162** | .024 | .069** |
| K | CS16 | **.748**** | **.733**** | .095** | .049 | .020 | — | — | **.688**** | **.324**** | .046 | .015 | .056** |
| K | CS24 | **.846**** | **.839**** | .041 | .038 | .024 | — | — | **.810**** | **.293**** | .093** | .040 | .041* |
| CH | CS11 | **.760**** | .122* | **.806**** | .121** | .043 | — | — | **.503**** | .084* | **.643**** | .003 | .014 |
| CH | CS15 | **.883**** | .019 | **.652**** | .159 | .119** | — | — | **.647**** | .023 | **.501**** | .037 | .006 |
| CH | CS17 | **.465**** | .126 | **.605**** | .115 | .087* | — | — | **.307**** | .106* | **.481**** | .007 | .153** |
| CH | CS20 | **.778**** | .060 | **.661**** | .158** | .095* | — | — | **.564**** | .058 | **.514**** | .030 | .026 |
| M | CS4 | **.800**** | .083 | .031 | **.736**** | .059* | — | — | **.751**** | .021 | .003 | **.531**** | .007 |
| M | CS9 | **.547**** | .358** | .133** | **.149*** | .045 | — | — | **.542**** | .056 | .062 | **.035** | .081* |
| M | CS13 | **.850**** | .040 | .054 | **.760**** | .074* | — | — | **.799**** | .010 | .077** | **.221**** | .010 |
| M | CS21 | **.660**** | .187** | .403** | **.292**** | .114** | — | — | **.610**** | .016 | .315** | **.084** | .151** |
| I | CS14 | **.740**** | .067 | .036 | .090* | **.803**** | — | — | **.463**** | .208** | .035 | .125** | **.724**** |
| I | CS19 | **.809**** | .026 | .132** | .114** | **.828**** | — | — | **.588**** | .037 | .018 | .034 | **.535**** |
| I | CS22 | **.761**** | .003 | .023 | .151** | **.643**** | — | — | **.620**** | .087* | .109** | .065 | **.390**** |
| I | CS23 | **.748**** | .009 | .018 | .093 | **.673**** | — | — | **.622**** | .147** | .100** | .135** | **.409**** |

*Note.* CFA: confirmatory factor analysis; ESEM: exploratory structural equation modeling; IC: Item Component; SF: Loading on respective specific factor when cross-loadings constrained to zero; K: Kindness; CH: Common Humanity; M: Mindfulness; I: Indifference; CS: Compassion Scale; GF: General factor; λ: standardized factor loadings; Target loadings in bold.; *$p < .05$; **$p < .01$.