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The Self-Compassion Scale (SCS; Neff, 2003a) is the most widely used measure of self-compassion. Self-compassion, as measured by the SCS, is robustly linked to psychological health (Macbeth & Gumley, 2012; Zessin, Dickhaüser, & Garbade, 2015). The SCS is currently understood as exhibiting a higher-order structure comprised of 6 first-order factors and 1 second-order general self-compassion factor. Recently, some researchers have questioned the internal validity of this 1-factor conceptualization, and posit that the SCS may instead be comprised of 2 general factors—self-compassion and self-coldness. The current paper provides an in-depth examination of the internal structure of the SCS using oblique, higher-order, and bifactor structural models in a sample of 1,115 college students. The bifactor model comprised of 2 general factors—self-compassion and self-coldness—and 6 specific factors demonstrated the best fit to the data. Results also indicated the Self-Coldness factor accounted for unique variance in depression, anxiety, and stress, whereas the Self-Compassion factor only accounted for unique variance in its association with depression, providing further evidence for the presence of 2 distinct factors. Results did not provide support for the 1-factor composition of self-compassion currently used in research. Implications for using, scoring, and interpreting the SCS are discussed.

Public Significance Statement
The present study suggests that the Self-Compassion Scale (SCS; Neff, 2003a) measures 2 theoretically distinct constructs (i.e., Self-Compassion and Self-Coldness) rather than 1 Self-Compassion factor as currently used. Additionally, self-coldness demonstrated a significant positive association with depression, anxiety, and stress, but self-compassion only demonstrated a significant inverse association with depression. In turn, our findings call for a reexamination the relationships of self-compassion with psychological outcomes because previous research predominantly included both self-coldness and self-compassion items to measure self-compassion.

Self-compassion is the acknowledgment of personal suffering through a kind, nonjudgmental lens coupled with a desire to alleviate this suffering (Neff, 2003a, 2003b, 2016). In line with counseling psychology's focus on a strength-based approach self-compassion consistently demonstrates important links to psychological health. Meta-analyses, for example, indicate a positive relationship with psychological well-being (Zessin et al., 2015) and an inverse relationship with psychopathology (MacBeth & Gumley, 2012). Research suggests that enhancing self-compassion may be useful for treating clinical concerns such as depression (Joeng & Turner, 2015; Liao, Kashubeck-West, Weng, & Deitz, 2015), anxiety, and stress (Mac-Beth & Gumley, 2012); promoting greater self-forgiveness (Cornish

& Wade, 2015); as well as better overall mental and physical health (Raque-Bogdan, Ericson, Jackson, Martin, & Bryan, 2011), and decreasing self-stigma associated with seeking counseling (Heath, Brenner, Lannin, & Vogel, 2016; Heath, Brenner, Vogel, Lannin, & Strass, 2017; Wasylkiw & Clairo, 2016).

Self-compassion is a salient construct in counseling research and practice and, as such, it is important to accurately measure and theoretically understand this construct. Recently, however, researchers (e.g., Costa, Marôco, Pinto-Gouveia, Ferreira, & Castilho, 2015; López et al., 2015; Muris, 2016; Williams, Dalgleish, Karl, & Kuyken, 2014) have expressed concern that assumptions about the theoretical and empirical structure of the most frequently used self-report measure of self-compassion—the SCS (Neff, 2003a)—may be incorrect. The current study addresses these concerns and furthers our understanding of the factor structure and validity of the SCS using oblique, higher-order, and bifactor modeling.

SCS

In an article outlining her self-compassion theory, which is rooted in Buddhist philosophy, Neff (2003b) noted "self-

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compassion entails seeing one's own experience in light of the common human experience, acknowledging that suffering, failure, and inadequacies are part of the human condition, and that all people—oneself included—are worthy of self-compassion," (p. 27). This definition captures three proposed components of self-compassion: (a) Self-Kindness, (b) Common Humanity, and (c) Mindfulness, each with counterparts of Self-Judgment, Isolation, and Over-Identification, respectively (Neff, 2003b). Self-kindness involves viewing oneself with loving-kindness and nonjudgment in the face of suffering and accepting oneself as fully human, the opposite of self-judgment (Neff, 2003a). Common humanity denotes connecting with the ubiquity of human suffering; whereas individuals can often believe they are alone in their distress (i.e., isolation; Neff, 2003a), a greater common humanity perspective helps individuals view their experiences with others in a self-compassionate way. Mindfulness involves balanced awareness of one's experience and the present moment (Kabat-Zinn, 2003). Self-compassionate mindfulness involves awareness of one's suffering without being fused with it, known as overidentification (Neff, 2003a).

Based on the above definition, Neff (2003a) generated items for each of the three predicted components (i.e., Self-Kindness, Common Humanity, and Mindfulness), including items representing each component's negative counterpart (i.e., Self-Judgment, Isolation, and Over-Identification, respectively) with the intention to reverse score the negative items. Though theorized as distinct, Neff posited that the three components contribute to a larger construct of Self-Compassion. To examine the factor structure, however, Neff (2003a) conducted distinct exploratory factor analyses (EFAs) and confirmatory factor analyses (CFAs) for each component (i.e., an analysis of all 26 items jointly was not conducted), leaving uncertainty as to how the components might represent the larger Self-Compassion construct. Neff (2003a) found that each of the three components was actually comprised of two factors (i.e., a positive and negative factor), rather than one, or six factors total. Within this six-factor model, Self-Kindness items loaded separately onto factors representing Self-Kindness (e.g., "When I'm going through a very hard time, I give myself the caring and tenderness I need") or Self-Judgment (e.g., "I'm intolerant and impatient toward those aspects of my personality I don't like"), Common Humanity items loaded onto factors representing Common Humanity (e.g., "I try to see my failings as part of the human condition") and Isolation (e.g., "When I think about my inadequacies, it tends to make me feel more separate and cut off from the rest of the world"), and Mindfulness items loaded separately onto factors representing Mindfulness (e.g., "When I'm feeling down I try to approach my feelings with curiosity and openness") and Over-Identification (e.g., "When I fail at something important to me I become consumed by feelings of inadequacy"). Neff (2003a) subsequently found that an oblique six-factor CFA model indicated an adequate fit across two college samples ($N = 225$, non-normed fit index [NNFI] = .90, comparative fit index [CFI] = .91; $N = 232$, NNFI = .92, CFI = .93). Although not originally expected by Neff (2003a), this result is consistent with general attitude theories (e.g., bivariate evaluative plane; Cacioppo & Berntson, 1994; affective events theory; Weiss & Cropanzano, 1996), which place positive and negative evaluations onto separate theoretical and psychometric axes (Credé, Chernyshenko, Bagraim, & Sully, 2009). Thus, in the context of

the SCS, the positive treatment of oneself (i.e., self-kindness) would, for example, be theoretically and psychometrically distinct from the negative treatment of oneself (i.e., self-judgment). This led to six factors total, three related to the positive components and three related to the negative components of Self-Compassion.

Neff (2003b) then examined the possibility of her theorized larger Self-Compassion construct by examining a higher-order factor of Self-Compassion. Based on model fit indices, Neff (2003b) interpreted that the one-factor model fit the data "marginally well" (p. 232) in one sample (CFI = .88 and NNFI = .90) and concluded that this single second-order CFA model was "confirmed" (p. 239) in a second sample (CFI = .90 and NNFI = .92) using liberal CFI and NNFI cutoff values of .90 suggested by Schermelleh-Engel, Moosbrugger, and Müller (2003). Based on her theory and the confirmatory factor results, Neff (2003a) reported that the SCS could be used as either a single-factor or six-factor measure.

Despite a general acceptance of using the scale in these ways, some researchers suggest CFI and NNFI values of .90 do not provide strong enough evidence of an acceptable fitting model (Lance, Butts, & Michels, 2006) and propose higher cutoff values (i.e., .95; Hu & Bentler, 1999). Furthermore, only two model fit indices of similar type—CFI and NNFI—were reported in Neff's (2003a) SCS development study. Additional fit indices beneficial in examining model fit (e.g., standardized root mean square residual [SRMR], root mean square error of approximation [RMSEA]; Hu & Bentler, 1999) and chi-square values, the best indicator of model misspecification (Hayduk, 2014), were not reported.

To begin addressing these concerns, Williams and colleagues (2014) examined fit indices beyond the CFI and NNFI (i.e., SRMR, RMSEA, Akaike information criterion [AIC]) for a unidimensional solution, an oblique six-factor solution, and a higher-order model wherein the six factors contributed to an overall Self-Compassion factor across three samples. None of the models exhibited adequate fit across all fit indices, suggesting that the items might not measure one overall construct, nor represent six distinct constructs (Williams et al., 2014). The marginal to poor fit of these one-factor and six-factor models is problematic considering the current use of the SCS as either a one-factor or six-factor scale.

Further, studies demonstrate moderate to strong correlations among the six subscales (e.g., $.46 \leq |rs| \leq .91$; Neff, 2003a), which suggests that the SCS may be defined by a strong general factor (Reise, Moore, & Haviland, 2010). This can be examined using a bifactor model approach, which has not been tested in previous research. Bifactor models examine the possibility of one or more general factors accounting for the observed commonality between specific factors and—unlike higher-order models—also allow an examination of whether the specific factors retain utility over and above the general factors (Chen, Hayes, Carver, Laurenceau, & Zhang, 2012; Reise, Bonifay, & Haviland, 2013). Thus, an examination of the internal structure of the SCS using a bifactor model would provide information on whether Self-Compassion is characterized by both a general factor and by specific (i.e., subscale) factors.

Two Factors Considered

Another explanation for the poor fit observed by Williams and colleagues (2014) is that the SCS may simply reflect an alternate factor structure from a one- or six-factor delineation. Specifically,

some researchers suggest that the SCS may be comprised of a two-factor structure consisting of self-compassion and self-coldness. This hypothesized two-factor structure in based in Gilbert's (2005) theory of social mentalities, which postulates that people interact with the world differently using two distinct processing systems: the threat-defense system and the safeness system (Buss, 2003; Gilbert, 2005). These separate systems can activate different internal approaches in how we treat ourselves. The internal activation of the safeness system has been related to self-compassion and the internal activation of the threat-defense system has been related to self-coldness (Gilbert, McEwan, Matos, & Rivis, 2011). The safeness system allows individuals to relax and engage in behaviors that "are fundamental to health and well-being" (Gilbert, 2005, p. 22) such as building safe and protective relationships rather than isolating oneself and elicits calming and self-soothing internal messages (i.e., self-compassion). In turn, the threat-defense system is designed to specifically decrease external threats; however, an unintentional consequence is that individuals can develop a "hostile self-to-self relationship" (Gilbert & Irons, 2005, p. 264) wherein they are also aggressive—or cold—toward themselves in the face of possible failure or inadequacy (i.e., self-coldness).

Consistent with this, using a Dutch-translated version of the SCS, López et al. (2015) found a two-factor solution comprised of Self-Compassion and Self-Coldness items using an EFA approach. Similarly, in a Portuguese sample, Costa and colleagues (2015) reported that a two-factor structure exhibited better fit than a six-factor model and a higher-order model comprised of one second-order factor and six first-order factors across four samples. Interestingly, this two-factor structure may be similar to the pattern found when the SCS was originally developed (Neff, 2003a), where CFAs revealed positive and negative factors for each of the proposed unitary structures. It is possible that if Neff conducted factor analyses with all 26 items, a two-factor structure might have been revealed. This two-factor structure, however, needs to be examined using higher-order and bifactor approaches. A higher-order model with two second-order factors should be examined, given the use of higher-order models in previous studies examining a one-factor interpretation of the SCS (e.g., Neff, 2003a; Williams et al., 2014), although this model has not yet been tested with this newer two-factor conceptualization (e.g., Costa et al., 2015; López et al., 2015). The two-bifactor model also needs to be examined given the moderate to strong correlations observed between the six SCS subscales. Testing a two-bifactor model would include two general factors and six specific factors. Namely, Self-Kindness, Common Humanity, and Mindfulness items would load onto a general factor of Self-Compassion as well as respective specific factors of Self-Kindness, Common Humanity, and Mindfulness. In turn, Self-Judgment, Isolation, and Over-Identification items would be load onto a second general factor of Self-Coldness as well as respective specific factors of Self-Judgment, Isolation, and Over-Identification.

In addition to extending our understanding of the theoretical and psychometric structure of self-compassion, a bifactor model would allow us to assess the unique relationships of each general factor with clinically relevant variables, which cannot be easily examined with a higher-order model (Chen et al., 2012). Examination of unique relationships of latent factors also builds upon previous research examining the SCS by providing more robust support for

the validity of the model beyond goodness-of-fit indices, which are limited in utility (Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2005). That is, we could examine whether self-compassion and self-coldness account for the variance in clinically relevant outcomes (e.g., depression) uniquely from each other and from the six subscales. Given the theory of social mentalities' suggestion that self-compassion promotes healthy self-care behaviors and calming internal messages, self-compassion could be associated with lower clinical distress, such as depression, anxiety, and stress. Conversely, given how threat-system activation can create negative self-talk wherein individuals are hostile toward themselves in the face of possible failure of inadequacy, this self-coldness is thought to increase clinical distress.

Indeed, under this two-factor conceptualization, Self-Compassion has been associated with lower levels of depression, anxiety, and stress, whereas Self-Coldness has been linked with these constructs in the opposite direction (Costa et al., 2015; Gilbert et al., 2011; Körner et al., 2015; López et al., 2015). Similarly, of the six SCS subscales as developed by Neff (2003a), Self-Kindness, Mindfulness, and in most cases, Common Humanity have been linked to lower depression and greater life satisfaction, whereas the Self-Judgment, Isolation, And Over-Identification subscales have demonstrated positive associations with these outcomes (Mills, Gilbert, Bellew, McEwan, & Gale, 2007; Neff, 2016; Wong & Mak, 2013; Ying, 2009).

Some researchers also suggest self-coldness may play a more pronounced role with negative psychological outcomes, such as depression, anxiety, and stress (Costa et al., 2015; López et al., 2015; Muris, 2016; Muris & Petrocchi, 2016; Neff, 2016). For example, Gilbert and colleagues found that self-compassion was weakly to moderately correlated with depression, anxiety, and stress ($-.25 \leq rs \leq -.29$, $ps < .001$), whereas self-coldness was moderately to strongly correlated with these constructs ($.37 \leq rs \leq .55$, $ps < .001$). Knowing the relative strengths could inform the use of self-compassion interventions. For example, clinicians may need to tailor interventions to either increase self-compassionate behaviors to increase self-care and support seeking, or reduce self-coldness to decrease depressive symptomology.

The Current Study

The SCS provides an important tool for measuring self-compassion. Recent findings, however, question the validity of the original one-factor conceptualization of the SCS and suggest a two-factor structure instead. Given the rapid expansion of self-compassion research, it is important that the internal structure of this central self-compassion assessment be understood. Therefore, the current study examines the fit of a variety of plausible factor structures: (a) a one-factor model, (b) an oblique two-factor model, (c) an oblique three-factor model, (d) an oblique six-factor model, (e) a second-order model comprised of two second-order factors and six first-order factors, and (f) a bifactor model with two general factors and six specific factors, (g) a second-order model with two second-order factors and six first-order factors, and (h) a bifactor model with two general factors and six specific factors. In addition, assuming the SCS conforms to a two-bifactor structure, we will assess model-based reliability and dimensionality of the general and specific factors (Reise, Bonifay, et al., 2013; Rodriguez, Reise, & Haviland, 2016a), as well as the incremental validity of the general latent factors through examining their

relationships with depression, anxiety, and stress. Based on theory and preliminary research that self-coldness is more strongly related to distress outcomes, we would hypothesize (a) self-coldness to demonstrate unique small to moderate associations with depression, anxiety, and stress, while (b) self-compassion would only demonstrate unique small associations with these outcomes.

Method

Participants

Undergraduates from a large Midwestern university ($n = 1,115$; female = 56.4%, $M_{age} = 19.4$, $SD = 1.7$, range = 18–41) were recruited to participate through a research pool where students enrolled in introductory psychology and communication studies courses can sign up for studies as one option of gaining credit toward their course research requirement. The sample included first-year students (51.7%), second-year students (25.6%), third-year students (14.2%), fourth-year students (6.0%), and other (1.6%). Participants were European American (78.1%), Asian American/Pacific Islander (9.1%), Latino (2.8%), African American (4.4%), American Indian/Alaskan Native (0.4%), Native Hawaiian/Pacific Islander (0.1%), Multi-Racial (3.2%), and Self-Identify (1.0%). Sexual orientation among participants included heterosexual (93.3%), bisexual (1.6%), questioning (1.8%), gay (1.0%), lesbian (0.7%), and self-identified (0.7%).

Measures

Self-compassion.   The SCS (Neff, 2003b) is a 26-item instrument that has been scored as an overall self-compassion measure as well as six self-compassion facets. The six subscales consist of three positive subscales (Self-Kindness, Common Humanity, and Mindfulness) and three negative subscales (Self-Judgment, Isolation, and Over-Identification; Neff, 2003b). Participants rate each item on a 5-point Likert scale from 1 (*almost never*) to 5 (*almost always*). Example items include "I try to be understanding and patient towards those aspects of my personality I don't like," and "When times are really difficult, I tend to be tough on myself." Self-compassion has been inversely associated with depression (Joeng & Turner, 2015) and associated with better mental and physical health (Raque-Bogdan et al., 2011). The one-factor solution has shown high internal consistency ($\alpha = .92$; Joeng & Turner, 2015) and 3-week test–retest reliability (.93; Neff, 2003a) in undergraduate samples. Internal consistency in the current sample was .92 (95% CI = [.91, .93]).

Depression, anxiety, and stress.   The DASS-21 (Henry & Crawford, 2005), a short-form of the Depression, Anxiety, and Stress Scales (DASS; Lovibond & Lovibond, 1995), consists of three seven-item subscales of Depression, Anxiety, and Stress. Participants rate how much each statement applied to them in the past week on a 4-point Likert scale from 0 (*Did not apply to me at all*) to 3 (*Applied to me very much, or most of the time*). Higher scores on each subscale indicate higher levels of the respective construct (i.e., Depression, Anxiety, or Stress). A sample Depression item is "I felt I wasn't worth much as a person." A sample Anxiety item is "I was aware of dryness in my mouth." A sample Stress item is "I found it hard to relax." Each subscale has been positively correlated with negative affect and demonstrated con-

vergent and discriminant validity comparative to other measures of depression and anxiety (Henry & Crawford, 2005). Internal consistency has been demonstrated in undergraduate samples for the Depression ($\alpha = .92, .91$), Anxiety ($\alpha = .80$), and Stress ($\alpha = .82$) subscales (Brenner & Vogel, 2015; Levin, Pistorello, Hayes, Seeley, & Levin, 2015). Similar internal consistency estimates were demonstrated in the current study for the Depression ($\alpha = .90$, 95% CI [.89, .91]), Anxiety ($\alpha = .81$, 95% CI [.79, .82]), and Stress ($\alpha = .84$, 95% CI [.83, .86]) subscales.

Procedures

The data set contained 1,319 participants prior to cleaning. Portions of this data were utilized in two published studies that used the SCS ($n = 794$). Neither of the two studies, which focused on help-seeking stigma (Heath et al., 2016; 2017), examined the factor structure of the SCS or its relationship to the DASS-21 subscales. Cases with incorrect responses to more than one random response item ($n = 204$) were deleted, resulting in a final sample of $N = 1,115$. For all data collection, university human subjects approval was obtained prior to recruiting participants from the subject pool of a university psychology department. After voluntarily agreeing to participate and providing online consent, participants completed an online survey using Qualtrics software. Participants received class credit in introductory psychology or communication studies courses for their participation. Participants were presented with a debriefing statement at the end of the survey.

Analytic Approach

We compared the fit of eight plausible models with each other in order to arrive at a judgment regarding the structure of the SCS scores. Next, we describe the structure of each of these models. In subsequent sections, we describe our approach to the assessment of model fit and the comparison of these oblique (Models A–D), higher-order (Model E and Model F), and bifactor (Model G and Model H) models.

Model A.   The first model reflects the unidimensional conceptualization of self-compassion. All 26 indicators (i.e., items) loaded onto a single latent factor representing Self-Compassion.

Model B.   The second model reflects the two-factor conceptualization of Self-Compassion (e.g., Costa et al., 2015; López et al., 2015). Model B is an oblique two-factor model in which each of the indicators loaded onto one of two correlated latent factors. The first latent factor represented Self-Compassion, with Self-Kindness, Common Humanity, and Mindfulness items as indicators. The second latent factor represented Self-Coldness, with Self-Judgment, Isolation, and Over-Identification items as indicators.

Model C.   The third model reflects Neff's (2003b) original theoretical conceptualization of self-compassion as comprised of three factors (i.e., Self-Kindness, Common Humanity, and Mindfulness). Model C is an oblique three-factor model in which each of the indicators loaded onto one of three correlated latent factors. The first latent factor reflected Self-Kindness, with Self-Kindness and Self-Judgment items as indicators; the second latent factor reflected Self-Coldness, with Common Humanity and Isolation items as indicators. The third latent factor reflected Mindfulness,

with items assessing Mindfulness and Over-Identification as indicators.

Model D. The fourth model reflects the six-subscale conceptualization of the SCS (Neff, 2003a). Model D is an oblique six-factor model in which each of the indicators loaded onto one of six correlated factors that represent the SCS subscales: Self-Kindness, Common Humanity, Mindfulness, Self-Judgment, Isolation, and Over-Identification.

Model E. The fifth model examines a one-factor structure using a higher-order approach described by Neff (2003a). Namely, six first-order factors loaded onto a single second-order factor representing an overarching self-compassion factor.

Model F. The sixth model is a higher-order model described by Costa et al. (2015) and López et al. (2015) that examines a two-factor structure. Specifically, six first-order factors loaded onto two correlated second-order factors of Self-Compassion and Self-Coldness. The three first-order factors of Self-Kindness, Common Humanity, and Mindfulness loaded onto the Self-Compassion higher-order factor. The three first-order factors of Self-Judgment, Isolation, and Over-Identification loaded onto the Self-Coldness second higher-order factor.

Model G. The seventh model also examines a one-factor structure. Specifically, Model G consists of a bifactor structure in which all 26 indicators load onto a single general factor (i.e., self-compassion), as well as onto one of six specific factors that are orthogonal from each other and the general factor. The specific factors represent the six SCS subscales: Self-Kindness, Common Humanity, Mindfulness, Self-Judgment, Isolation, and Over-Identification. This model, which has yet to be tested, is consistent with Neff's (2003a) proposed structure of the SCS containing both a general Self-Compassion factor and six specific factors. Bifactor models also allow for a comparison of the global and specific factors.

Model H. The eighth model also applied a bifactor approach to extend Costa et al.'s (2015) and López et al.'s (2015) proposed conceptualization of the SCS. Specifically, all 26 indicators loaded onto one of two orthogonal general factors and onto one of six specific factors that are orthogonal from each other and both general factors. The two general factors represent Self-Compassion and Self-Coldness, while the specific factors represent the six SCS subscales: Self-Kindness, Common Humanity, Mindfulness, Self-Judgment, Isolation, and Over-Identification.

Assessment of Model Fit

Model fit was examined using LISREL 8.8 (Jöreskog, Sörbom, du Toit, & du Toit, 1999) and the full information maximum likelihood procedure was used to deal with missing data (<1% of all responses to items). Due to violations of multivariate normality, we computed asymptotic covariance matrices and then relied on robust maximum likelihood estimation. Therefore, we used the Satorra-Bentler scaled chi-square values rather than the maximum likelihood chi-square values to compute all global fit indexes that rely on chi-square values (e.g., RMSEA, CFI, NNFI) and also for all nested model comparisons that rely on sequential chi-square differences tests. Because not all pairs of nested models are nested we compare AIC values for non-nested models with AIC differences greater than 6, particularly greater than 10, indicating that

the model with the smaller AIC value has better fit (as cited in Symonds & Moussalli, 2011, p. 17).

We assess the fit of all models using a variety of criteria. First, we examined Satorra-Bentler model chi-square statistics. As chi-square values are the single best indicators of model misspecification, we interpret scaled chi-square values of our best fitting models in order to facilitate an understanding of any remaining misspecification (Hayduk, 2014). Further, we report and interpret the four global fit indices suggested by Hu and Bentler (1999): RMSEA, SRMR, the CFI, and the NNFI. Although we reject the use of strict cutoffs for global fit indices, we interpret these indices using the standards proposed by Hu and Bentler (1999) as approximate guidelines for what constitutes good fit: CFI and NNFI ≥.95, SRMR ≤ .08, and RMSEA ≤ .06.

Results

Model Fit

Calculated means, standard deviations, and zero-order correlations for all study variables are presented in Table 1. Fit indices for the models are presented in Table 2. All models exhibited some level of misspecification as indicated by the large (and significant) chi-square values, but there were substantial differences in the degree of misfit exhibited by each model. Two models exhibited particularly poor fit, falling below cutoff values for each fit index examined. The first of these was the single-factor model, Model A, and the worst overall fit was exhibited by Model C, the oblique three-factor model. All other models exhibited fit that might be described as satisfactory when examined in isolation; however, two models exhibited substantially better fit than the other alternative models and also satisfied the approximate criteria for global fit indexes discussed by Hu and Bentler (1999). These include Model D, characterized by six oblique factors, and Model H, characterized by six specific factors and two bifactors (Figure 1). The standardized and unstandardized factor loadings for Model D and Model H are presented in supplementary tables. Importantly, sequential chi-square difference tests indicated that these two models exhibited significantly better fit than all nested alternative models, and AIC differences indicated that these two models also exhibited better fit than non-nested models. We compared the two best fitting models, Model D and Model H, with each other by examining the difference in AIC values because these models are not themselves nested. Model H demonstrated a higher AIC value than Model D (Δ66.56). This difference exceeded the minimum benchmark of 6 and conservative benchmark of 10.

Further examination of residuals for Model H indicated a number of large standardized residuals (absolute value greater than 3) for the relationships between several items that contained double or triple negative wording (e.g., "When I'm feeling down I tend to obsess and fixate on everything that's wrong"), suggesting that the remaining misspecification might be due to poorly written items. We examined the readability of these items using the Flesch reading formula (Klare, Rowe, St. John, & Stolurow, 1969). The ease of readability of items was 66.4, or fairly difficult to read, and items demonstrated seventh grade level wording (i.e., 7.7). Thus, the Model H residuals may reflect the lack of ease of reading. Given the difficulty assessing the best model fit (i.e., Model H's better AIC value but less than adequate SRMR) we examined the

Table 1
Means, Standard Deviations, and Zero-Order Correlations of Scales

Measured variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Self-Compassion (all items)												
2. Self-Compassion (13-item)	.85											
3. Self-Coldness (13-item)	−.88	−.50										
4. Self-Kindness	.82	.88	−.55									
5. Mindfulness	.74	.87	−.43	.68								
6. Common Humanity	.64	.84	−.30	.57	.63							
7. Self-Judgment	−.81	−.47	.92	−.56	−.37	−.25						
8. Over-Identification	−.78	−.44	.89	−.44	−.44	−.27	.72					
9. Isolation	−.77	−.43	.88	−.46	−.36	−.29	.71	.68				
10. Depression	−.49	−.37	.48	−.38	−.30	−.27	.43	.39	.46			
11. Anxiety	−.30	−.19	.32	−.18	−.19	−.13	.29	.30	.28	.69		
12. Stress	−.42	−.26	.46	−.28	−.24	−.15	.40	.44	.40	.73	.75	
M	2.92	3.13	3.29	2.97	3.28	3.18	3.33	3.25	3.28	.73	.69	.92
SD	.62	.68	.76	.78	.74	.83	.83	.87	.85	.68	.59	.63

Note. $N = 1,115$. All zero-order correlations were significant at the $p < .001$ level. Self-Compassion, Self-Coldness, Self-Kindness, Common Humanity, Mindfulness, Self-Judgment, Isolation, and Over-Identification were measured using the Self-Compassion Scale (Neff, 2003a). Depression, Anxiety, and Stress were measured using the 21-item Depression, Anxiety, and Stress Scales Henry & Crawford, 2005).

dimensionality and model-based reliability to better understand Model H's structure.

Model-Based Reliability and Dimensionality

Internal consistency in a bifactor structure is influenced by both general and specific sources of common variance (Rodriguez et al., 2016a). Therefore, model-based reliability indices of Model H factor scores are needed to examine the internal consistency of the general and specific factors and the utility of composite scale scores (Dueber, 2016; Reise, Bonifay, et al., 2013; Rodriguez et al., 2016a). Coefficient omega hierarchical (ωH) reflects the proportion of variance in total scores accounted for by the general factor by treating the specific factors as measurement error. Similarly, the coefficient omega hierarchical subscale (ωHS) for each subscale reflects the proportion of variance in the composite subscale score accounted for by that specific factor after partialing out the general factor as measurement error. Finally, the proportion of

reliable variance (PRV) for a general or specific factor refers to the PRV in the model accounted for by that factor. A high ωH implies that the raw scores predominantly capture the general factor and, in turn, are due to a single common source even in a multidimensional model (Reise, 2012; Rodriguez, Reise, & Haviland, 2016b). Exceeding suggested cutoffs of ωH or ωHS > .80 (Rodriguez et al., 2016b) and PRV > .75 (Li, Toland, & Usher, 2016) would indicate that researchers can interpret the general or specific factor raw score as an appropriate measure of its respective factor. Computed indices met the benchmarks for the general Self-Compassion factor (ωH = .84, PRV = .92), but the three specific factors, Self-Kindness (ωHS = .18, PRV = .21), Common Humanity (ωHS = .27, PRV = .35), or Mindfulness (ωHS = .02, PRV = .03) did not meet these benchmarks. Similarly, resulting indices met the benchmarks for the general Self-Coldness factor (ωH = .88, PRV = .94), but for none of the three specific factors: Self-Judgment (ωHS = .12, PRV = .15), Isolation (ωHS = .12,

Table 2
Model Fit Statistics

Model	S-B χ²	df	CFI	NNFI	RMSEA	SRMR	AIC	Comparison with Model D		Comparison with Model H	
								Δχ²	Δdf	Δχ²	Δdf
Model A: one factor	6,396.59	299	.846	.812	.135	.101	6,500.59	2,848.25***	15	Not nested	
Model B: two oblique factors	2,070.34	298	.955	.939	.073	.059	2,176.34	658.51***	14	Not nested	
Model C: three oblique factors	6,552.39	296	.842	.805	.138	.099	6,662.39	2,509.66***	12	Not nested	
Model D: six oblique factors	1,332.52	284	.973	.959	.058	.045	1,466.52			Not nested	
Model E: six first-order factors + one higher-order factor	2,156.57	293	.953	.935	.076	.096	2,272.57	970.66***	9	912.21***	20
Model F: six first-order factors + two higher-order factors	1,537.59	292	.968	.954	.062	.054	1,659.59	208.09***	8	293.23***	19
Model G: six specific factors + one bifactor	1,995.72	274	.956	.936	.075	.125	2,151.72	Not nested		751.36***	1
Model H: six specific factors + two bifactors	1,244.36	273	.975	.960	.057	.167	1,400.36	Not nested			

Note. $N = 1,115$. S-B χ² = Satorra-Bentler scaled chi-square values; *df* = degrees of freedom; CFI = comparative fit index; NNFI = non-normed fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; AIC = Akaike information criterion.
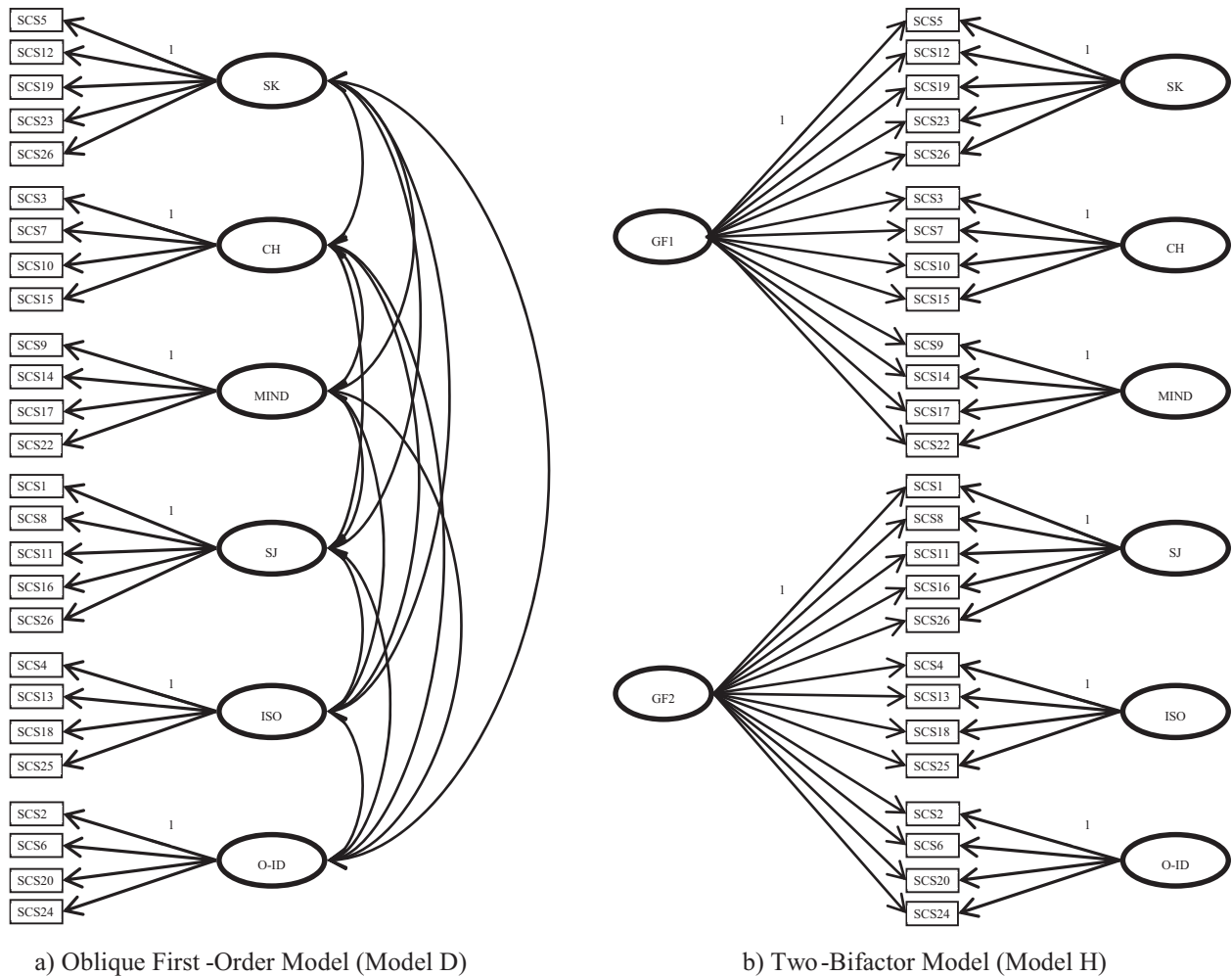* $p < .05$.   ** $p < .01$ *** $p < .001$.

a) Oblique First -Order Model (Model D)   b) Two -Bifactor Model (Model H)

Figure 1. Factor structures of the oblique first-order Model (Model D) and the two-bifactor model (Model H).
SK = Self-Kindness; CH = Common Humanity; MIND = Mindfulness; SJ = Self-Judgment; ISO = Isolation;
O-ID = Over-Identification; GF1 = Self-Compassion; GF2 = Self-Coldness; SCS = Self-Compassion Scale.

PRV = .15), and Over-Identification (ωHS = .18, PRV = .20). This evidence supports the use of the raw Self-Compassion and Self-Coldness scores as measures of self-compassion and self-coldness constructs, respectively. Conversely, evidence does not support the use of the composite SCS subscale scores; the low ωHS indicates that reliability diminishes upon partialing out common variance shared with the general Self-Compassion and Self-Coldness factors and the low PRV indicates that the subscales do not account for a meaningful portion of reliable variance beyond their respective general factor.

Furthermore, explained common variance (ECV; ten Berge & Socan, 2004) and percent of uncontaminated correlations (PUC; Reise, Scheines, Widaman, & Haviland, 2013) help determine whether a general factor is unidimensional, the degree of structural coefficient bias within a unidimensional model and, in turn, whether the general factor items can be specified in a more parsimonious single latent variable in structural equation modeling (SEM; Reise et al., 2010; Reise, 2012; Reise, Bonifay, et al., 2013; Rodriguez et al., 2016a). The ECV indicates the proportion to

which a general factor accounts for the explained variance among all factors in the model, including the specific factors. A greater ECV supports the unidimensionality of each general factor. PUC is a bifactor model index of factor structure that denotes the percentage of correlations among items in different specific factors and thus are not inflated due to shared general and specific factor variance (Bonifay, Reise, Scheines, & Meijer, 2015). The appropriate ECV benchmarks are determined by the PUC (Reise, 2012; Reise et al., 2013). The Model H PUC was .72. When the PUC is lower than .80, Reise, Scheines, and colleagues (2013) suggest that ECV > .60 and ωH > .70 indicate less bias and, in turn, provide support for the interpretation of each general factor as unidimensional relative to their specific factors. Given the two-general-factor structure of Model H, achievement of these benchmarks for each general factor would support a bidimensional structure of Self-Compassion and Self-Coldness. Indeed, both bifactors demonstrated ECVs above .60; the ECV for Self-Compassion was .75 and the ECV for Self-Coldness was .68. In other words, 75% of the common variance in the set of the Self-Compassion items in

Model H was due to the general Self-Compassion factor rather than the specific factors, and 68% of the common variance in the set of Self-Coldness items in Model H was due to the general Self-Coldness factor. As noted above, ωH was greater than .70 for both the Self-Compassion (.84) and Self-Coldness (.88) general factors. Overall, these model-based reliability and dimensionality results support the unidimensionality of each general factor and, in turn, the bidimensionality of Model H.

Incremental Validity

To further understand whether the two general factors account for unique variance over and above the six specific factors, we examined their unique associations with three outcomes— depression, anxiety, and stress—separately as latent variables. That is, we specified an SEM in which (a) the SCS items were set to load in accordance with Model H, (b) the DASS-21 items loaded on their latent criterion variable factor (i.e., Depression, Anxiety, or Stress) and (c) the SCS general and specific factors were regressed onto the Depression, Anxiety, and Stress latent variables. Cohen's (1988) D guidelines were used to interpret small (β = .20), medium (β = .50), and large (β = .80) effect sizes. As illustrated in Table 3, the Self-Coldness general factor demonstrated small to moderate significant associations (.36 ≤ βs ≤ .46, ps ≤ .001) with these outcomes over and above the general Self-Compassion and all six specific factors. This Self-Coldness general factor also accounted for the majority of the variance in each these outcomes. In turn, the Self-Compassion general factor demonstrated a small unique association with Depression (β = −.17, p < .001), but it was not significantly related to Anxiety (β = −.06, p > .05) or Stress (β = −.05, p > .05) over and above the other factors.

Discussion

This study reexamined the factor structure of the most widely used measure of self-compassion: the SCS (Neff, 2003a). The SCS has been viewed as a measure of one overarching self-compassion factor comprised of six dimensions. Based on recent findings, however, some researchers question the structural validity of its use as a one-factor measure of self-compassion (e.g., Costa et al., 2015; López et al., 2015; Muris, 2016; Williams et al., 2014), and

suggest that the SCS may instead measure two factors: Self-Compassion and Self-Coldness (Costa et al., 2015; Gilbert et al., 2011; López et al., 2015). To assess the most appropriate use of the SCS, the current study examined the fit of eight plausible models, which included one-, two-, three-, and six-factor structures, using oblique, higher-order, and/or bifactor models, as well as ancillary bifactor indices of dimensionality and model-based reliability. Interpretation of these results, expanded upon in the subsequent section, recommend that researchers and clinicians use the SCS as a two-factor measure of self-compassion and self-coldness, with the Self-Compassion factor consisting of items from the Self-Kindness, Common Humanity, and Mindfulness subscales, and the Self-Coldness factor consisting of items from the Self-Judgment, Isolation, and Over-Identification factors. Importantly, results do not support the utilization of the SCS as a one-factor measure of self-compassion as used in the majority of previous research.

Factor Structure: Two Is Better Than One

The three models examining a one-factor solution of self-compassion in the current study (unidimensional, higher-order, and bifactor models) did not fit the data across all fit indices. Further, all three two-factor models demonstrated a superior fit to their one-factor counterparts. The implication that all 26 SCS items do not contribute to one self-compassion factor is consistent with burgeoning research reexamining the factor structure of the SCS (e.g., Costa et al., 2015; López et al., 2015; Williams et al., 2014) and is an important finding given the representation of the SCS as a one-factor assessment of self-compassion (Neff, 2003a) and its principal use as a measure of self-compassion in a rapidly growing field of research.

The two-bifactor model comprised of two general factors and six specific factors (Model H) and the oblique six-factor structure (i.e., Self-Kindness, Common Humanity, Mindfulness, Self-Judgment, Isolation, and Over-Identification; Model D) both demonstrated an adequate fit to the data on most fit indices. Model D is similar to Neff's original item development and initial CFA results finding of six distinct constructs within the SCS. However, the best fitting model based on AIC values was the two-bifactor model (Model H), and ancillary bifactor indices to assess dimensionality and model-based reliability provided further support for a

Table 3
Regressed Relationships of SCS With Depression, Anxiety, and Stress (Model H)

General factor	Specific factor	β		
		Depression	Anxiety	Stress
Self-Compassion		−.17***	−.06	−.05
	Self-Kindness	−.16**	.01	−.14*
	Common Humanity	−.06	.03	.02
	Mindfulness	−.13*	−.19**	−.09
Self-Coldness		.39***	.36***	.46***
	Self-Judgment	.03	−.00	−.02
	Isolation	.16*	.05	.04
	Over-Identification	−.01	.06	.18*

Note. SCS = Self-Compassion Scale. Depression, Anxiety, and Stress were measured using the 21-item Depression, Anxiety, and Stress Scales (Henry & Crawford, 2005). Self-Compassion, Self-Coldness, Self-Kindness, Common Humanity, Mindfulness, Self-Judgment, Isolation and Over-Identification were measured using the Self-Compassion Scale (Neff, 2003a).
* p < .05.   ** p < .01   *** p < .001.

two-factor structure over a six-factor structure. For example, examination of ωH/ωHS and PRV suggests that each general factor accounted for enough variance in the overall factor score to be considered unidimensional relative to its respective specific factors. Conversely, model-based reliability indices suggest that the six subscale factors do not demonstrate utility above their respective general factors. Furthermore, ECV and PUC revealed that the general Self-Compassion factor accounted for 75% of the common variance in the self-compassion items, and the general Self-Coldness factor accounted for 68% of the common variance in the set of self-coldness items. This further supports of the unidimensionality of each general factor relative to their specific factors and, in turn, the bidimensionality of the SCS.

The presence of these two general factors, though not precisely in line with the structure postulated by Neff (2003a, 2003b), is psychometrically consistent with a line of research suggesting that positive and negative attitudes (Cacioppo & Berntson, 1994; Cacioppo, Gardner, & Berntson, 1997, 1999) and feelings (Weiss & Cropanzano, 1996) are bidimensional rather than unidimensional, and fits theoretically with social mentalities theory, which has been used by self-compassion researchers who posit that self-compassion and self-coldness are distinct constructs (e.g., Costa et al., 2015; López et al., 2015). Namely, Gilbert's (2005) theory of social mentalities asserts that people interact with the world differently depending on whether the environment is threatening or safe using two distinct processing systems, the threat-defense system and the safeness system, which are thought to be rooted in the sympathetic and parasympathetic nervous systems, respectively. Though designed to motivate our external behaviors, these systems can also enact internally and influence the way that we treat ourselves. The internal activation of the threat system elicits negative self-directed cognitions and behaviors and has been related to self-coldness. Internal activation of the safeness system elicits positive cognitions and behaviors and has been related to self-compassion (Gilbert et al., 2011).

This two-factor conceptualization was further supported by our examination of the relationships of self-coldness and self-compassion with depression, anxiety, and stress. Consistent with previous research, bivariate correlations revealed a positive correlation between self-coldness and depression, anxiety, and stress, and self-compassion was significantly inversely associated with these outcomes (Gilbert et al., 2011). When examining the incremental validity of self-coldness and self-compassion through their unique associations with depression, anxiety, and stress, self-coldness robustly demonstrated small to moderate associations with all three. In turn, self-compassion only demonstrated a small significant association with depression. Although our second prediction that self-compassion would demonstrate small unique associations with all outcomes was only partially supported, the observed pattern of associations fits the premise that our hypotheses were grounded in; namely, that self-coldness is be more robustly related to negative psychological outcomes than self-compassion. Those who posit that self-coldness is more pertinent with negative psychological outcomes also posit that self-compassion is more pertinent with regard to positive mental health outcomes (e.g., Neff, 2016). A limitation of the current study, therefore, is that positive mental health outcomes were not included. We therefore recommend that future researchers examine the relationships of self-coldness and self-compassion with posi-

tive outcomes to extend our theoretical understanding of these constructs. In addition to this theoretical contribution, it is important to examine factors that may be associated with positive mental health outcomes rather than solely focusing on negative mental health outcomes (Douglass, Conlin, Duffy, & Allan, 2017).

Using the SCS

Findings from the current study suggest that the SCS is comprised of six specific factors and two general factors. Only 13 of the SCS items appear to contribute to Self-Compassion, rather than all 26 items as originally conceptualized, with the remaining 13 items contributing to Self-Coldness. We recommend that future researchers consider measuring these Self-Compassion and Self-Coldness factors distinctly. This should provide a more accurate representation of these two constructs than a one-factor solution (which confounds self-compassion with self-coldness) and allow researchers to assess differing relationships with clinically relevant outcomes. The ωH/ωHS, PRV, ECV, and PUC indicate that researchers can choose to examine these two factors using a bifactor model, a more parsimonious two-factor SEM, or manifest total mean scores.

Importantly, simply calculating manifest scores is not necessarily equivalent to measuring the constructs in a bifactor model. General factors can present as a confound for their respective specific factors (Tracey, 2012). For example, Self-Judgment, Isolation, and Over-Identification all share variance of a general Self-Coldness factor. This could inhibit parsing out the true, uncontaminated relationships of these narrower factors with other constructs. Indeed, given that 3% to 35% of the reliable variance of the subscale scores were driven by specific factors, there is a lack of strong evidence in favor of using any of the raw subscale scores. However, in examining the incremental validity of Self-Coldness and Self-Compassion, results revealed instances where specific Self-Compassion factors demonstrated unique associations with clinically relevant outcomes when Self-Compassion did not. The Self-Kindness factor demonstrated small significant associations with depression and stress, while the Mindfulness factor demonstrated small significant associations with depression and anxiety. Thus, researchers may be inclined to examine the specific factors in the future. In these instances, we recommend the use of ipsative scoring for manifest summed subscales, which captures the unique subscale variance (Tracey, 2012), or the use of latent bifactor models.

Implications and Additional Directions for Future Research

This two-factor solution has important implications for the conclusions from previous research using the SCS as a one-factor measure of self-compassion, such as the medium to large meta-analytic relationships found between self-compassion with psychopathology (MacBeth & Gumley, 2012) and well-being (Zessin et al., 2015). Self-compassion may have been confounded with self-coldness in the past, which questions whether extant findings using the SCS (e.g., Heath et al., 2017; Joeng & Turner, 2015) provide an accurate representation of the strength of the relationship between self-compassion and clinically relevant outcomes. Our finding that self-compassion was only uniquely linked with

depression and this relationship was small challenges the strength of previously observed associations and thus underscores the importance of reexamining these relationships. Future research is needed to clarify the strength self-compassion's relationship with previously examined outcomes, and to also examine how self-coldness may relate to these outcomes.

The notion that self-coldness may more be robustly related to negative psychological outcomes than self-compassion has implications for both clinicians and future researchers. Clinicians working with clients experiencing depression, anxiety, or stress may want to focus on decreasing self-coldness in addition to increasing self-compassion skills. However, our finding that the majority of the accounted variance in depression, anxiety, and stress was attributed to self-coldness does not imply that self-coldness is a universally more powerful predictor of all psychological outcomes than self-compassion. Future researchers should examine the relationships of self-coldness and self-compassion with negative and positive psychological outcomes. There could also be benefit in examining interactions between these two factors (Körner et al., 2015). For example, self-compassion may serve as a buffer between self-coldness and negative mental health outcomes. This fell outside the current's study scope of theory and psychometric validity, but is an area worthy of consideration in future research.

Limitations and Additional Directions for Future Research

It is important to note that even misspecified models can exhibit excellent fit. Although fit indices provide support for the SCS as a two-bifactor structure, the significant chi-square and SRMR suggest that the Model H specification could be improved. Future researchers could examine the model misspecification by looking at different model structures. For example, a lack of fit may be coming from the residuals of the relationships between items that contain double or triple negative wording. This wording can be difficult to answer in the intended direction, suggesting that some of the misspecification might be due to poorly written items.

Indeed, a related limitation of this scale is that the SCS may be fairly difficult to read, as demonstrated by our examination of the item wording. This is important for researchers to consider when administering the SCS to respondents to samples without a college education, to respondents for whom English may not be a first language, or administering translated versions of the SCS due to the complexity of translating measures that are fairly difficult to read. When Wong and Mak (2013) examined the Self-Compassion, Self-Kindness, Common Humanity, and Mindfulness subscales of the SCS—translated into Chinese using the back-translation method—internal consistency estimates were less than adequate (.75, .66, and .62, respectively). Therefore, future researchers could examine the measurement invariance across diverse samples, and perhaps examine differently worded items to see if this improves the model specification. This speaks to another study limitation, that the current sample included one college student sample with a predominantly European American background. Cross-validation of these factor structures could be examined in other samples with greater diversity (e.g., clinical sample, meditation sample, community sample). Finally, as the scope of this study involved an examination of factor structure, relationships with outcome variables were limited to cross-sectional anal-

yses. As such, causality cannot be inferred. Future researchers could examine how each factor impacts psychological health longitudinally and experimentally.

Conclusion

This study sought to provide researchers with more comprehensive information to use when making important decisions regarding how to calculate self-compassion in the future. These findings suggest that the SCS may not be as pure a measure of self-compassion as originally conceptualized. Instead, the SCS appears to consist of a bifactor structure with two general factors (Self-Compassion and Self-Coldness) and six specific factors (Self-Kindness, Common Humanity, Mindfulness, Self-Judgment, Isolation, Over-Identification). The Self-Compassion factor contains the Self-Kindness, Common Humanity, and Mindfulness items, and Self-Coldness contains the Self-Judgment, Isolation, and Over-Identification items. Therefore, rather than the original one-factor structure, we recommend that future researchers utilizing the SCS adopt a two-factor structure. Based on bifactor indices, those interested in Capturing Self-Compassion or Self-Coldness can measure these using a bifactor model with six specific factors and two general factors, a more parsimonious two-factor SEM, or manifest total mean scores. For those interested in capturing the six subscales, based on our findings, we recommend the use of ipsative scoring for manifest summed subscales or the bifactor models with six specific factors and two general factors. Importantly, the Self-Coldness items should not be used in calculating Self-Compassion.

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