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Meta-Analysis of Gender Differences in Self-Compassion

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While research suggests strong associations of self-compassion with mental health and well-being, gender norms may hinder the development of self-compassion by women on one hand, and men on the other. This study represents one of the first systematic analyses of potential gender differences in self-compassion using meta-analytic techniques, including whether such gender differences are moderated by age or ethnic minority status. Fixed-effects models were used to estimate the average effect size (ES) of gender differences in self-compassion scores across 71 journal articles and dissertations providing a total of 88 estimates. Results revealed that males had slightly higher levels of self-compassion than females, with a small ES observed ($d = .18$). This difference was larger in samples with a higher percentage of ethnic minorities. Researchers and practitioners should take these group differences into account in future studies and interventions focused on self-compassion, while not overemphasizing gender differences in self-compassion as being large in size.

Keywords: Self-compassion; Gender differences; Age differences; Ethnic differences; Meta-analysis.

Research on self-compassion is relatively new in psychology, spanning a little over a decade. Neff (2003b) defines self-compassion as being composed of three components: self-kindness versus self-judgment, a sense of common humanity versus isolation, and mindfulness versus over-identification when confronting negative self-relevant thoughts and emotions. These components combine and mutually interact to create a self-compassionate frame of mind.

Self-kindness refers to the tendency to be caring and understanding with oneself rather than being harshly critical or judgmental, offering soothing and comfort to the self in times of suffering. Common humanity involves recognizing that all humans are imperfect, fail, and make mistakes. It connects one's own flawed condition to the shared human condition so that greater perspective is taken toward personal shortcomings and difficulties. Mindfulness, the third component of self-compassion, involves being aware of one's present moment experience in a clear and balanced manner rather than exaggerating or over-identifying with negative aspects of oneself or one's life. Compassion can be

extended toward the self when suffering occurs through no fault of one's own—when the external circumstances of life are simply difficult to bear. Self-compassion is equally relevant, however, when suffering stems from one's own mistakes, failures, or inadequacies.

One of the most consistent findings in the research literature is that self-compassion is inversely related to psychopathology (Barnard & Curry, 2012). In fact, a recent meta-analysis (MacBeth & Gumley, 2012) found a large effect size (ES) when examining the link between self-compassion and depression, anxiety, and stress across 20 studies. Self-compassion appears to facilitate resilience by moderating people's reactions to negative events. For instance, Leary and colleagues (2007) found that individuals who were higher in self-compassion demonstrated less extreme reactions, less negative emotions, more accepting thoughts, and a greater tendency to put their problems into perspective. Self-compassionate people are less likely to ruminate about or else suppress their negative thoughts and emotions (Neff, 2003a; Neff, Kirkpatrick, & Rude, 2007). Moreover, self-compassion is directly associated with psychological strengths such as happiness, optimism, wisdom, personal initiative, and emotional intelligence (Heffernan, Griffin, McNulty, & Fitzpatrick, 2010; Hollis-Walker & Colosimo, 2011; Neff, Rude, et al., 2007). It is also linked to increased motivation, health behaviors, positive body image, and resilient coping (e.g., Albertson, Neff, & Dill-Shackleford, 2014; Allen, Goldwasser & Leary, 2012; Breines & Chen, 2012; Sbarra, Smith, & Mehl, 2012).

Because research suggests that there are many positive associations between self-compassion and well-being, there is an increasing emphasis on developing interventions to enhance self-compassion. Paul Gilbert (2009) has developed a general therapeutic approach termed Compassion-Focused Therapy that helps clients develop the skills and attributes of a self-compassionate mind, especially when their more habitual form of self-to-self relating involves shame and self-attack. Similarly, Neff and Germer (2013) have developed the eight-week mindful self-compassion (MSC) program, which has been shown to significantly increase self-compassion and life satisfaction while reducing depression, anxiety and stress for at least one year. To date, however, research and interventions have not taken potential gender differences into account in terms of understanding self-compassion, a major deficit in our understanding.

There is reason to hypothesize gender differences in self-compassion, though it is unclear in which direction. For instance, women are socialized with the norm of self-sacrifice—prioritizing the needs of others over their own—which may impact their ability to give themselves compassion (Baker-Miller, 1986; Raffaelli & Ontai, 2004; Ruble & Martin, 1998). Women have also been found to be more critical of themselves and to use more negative self-talk than males (DeVore, 2013; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999). Moreover, several existing meta-analyses have suggested that women have lower levels of self-esteem (Gentile et al., 2009; Kling, Hyde, Showers, & Buswell, 1999). While self-esteem and self-compassion are conceptually distinct and show differential patterns of association with outcomes such as narcissism, social comparison and contingent self-worth (Neff & Vonk, 2009), it is possible that the greater tendency of women to judge themselves negatively extends to their tendency to be self-compassionate. Thus, there is reason to believe that women are more likely to lack self-compassion than men.

However, there are also reasons to believe that the reverse is true. For instance, self-compassion involves actively soothing and comforting oneself when suffering is experienced (Neff, 2009), tender qualities that are emphasized for women but not men (Baker-Miller, 1986; Raffaelli & Ontai, 2004; Ruble & Martin, 1998). In fact, research indicates that adherence to masculine gender norms is associated with lower levels of self-

compassion (Reilly, Rochlen, & Awad, 2014). Male socialization patterns emphasizing emotional restrictiveness and stoicism (Levant, 2011; Riggs, 1997) may also mean that self-compassion is less accessible to men than women.

Past research findings on gender differences in self-compassion have been inconsistent. Several studies have found that females have lower levels of self-compassion than males (Neff, 2003a; Neff, Hseih, Dejitthirat, 2005; Neff & McGehee, 2010; Raes, 2010; Yarnell & Neff, 2012), while others have not found significant sex differences (Iskender, 2009; Neff, Pisitsungkagarn, & Hseih, 2008; Neff, Kirkpatrick, et al., 2007; Neff & Pommier, 2013; Raque-Bogdan, Ericson, Jackson, Martin, & Bryan, 2011). Potential gender differences in self-compassion have not been examined systematically, however; so generalized statements about whether males or females have higher levels of self-compassion cannot be made.

It may also be the case that gender differences interact with age and ethnicity, given that gender role norms change with age and across ethnic groups (Kehn & Ruthig, 2013; Takahashi & Overton, 2002). For instance, theory and research on the changing gender-role characteristics of men suggest that as men age they adopt more stereotypically feminine aspects of their personalities and become more nurturant (Cournoyer & Mahalik, 1995). Moreover, a key element of self-compassion is recognition of common humanity. The understanding of common humanity is a type of wisdom that increases with age (Ardelt, 2000, 2010). Thus, it may be that with increasing age, gender differences become less pronounced. Similarly, research indicates that gender roles tend to be more traditional among ethnic minorities (Castillo, Perez, Castillo, & Ghosheh, 2010; Goldberg et al., 2012; Pierre, Mahalik, & Woodland, 2001; Villanueva Dixon, Graber, & Brooks-Gunn, 2008), which suggests that gender differences might be more pronounced in these populations.

It is important to know whether there are group differences in self-compassion, however, because it has implications for research as well as for how and to whom self-compassion should be taught. Self-compassion appears to foster well-being among all people, regardless of gender, age, or culture (e.g., Akin, 2010; Allen & Leary, 2014; Arimitsu, 2014; Choi, Lee, & Lee, 2014; Neff et al., 2008). It may the case that gender differences in self-compassion are small or non-existent, suggesting that men and women are more similar than different psychologically (Hyde, 2005). However, there may be significant group differences in the ability to adopt a compassionate stance toward oneself. If so, this would suggest that special efforts should be made to teach this skill to particular gender populations. Currently, the large majority of people who take courses designed to teach self-compassion such as the MSC program are middle-aged white women (Neff, personal communication; see also Neff & Germer, 2013). If it were determined that there were gender differences in self-compassion, however, or if gender differences were found in certain age or ethnic groups but not others, it may suggest that psychologists should place special emphasis on raising the self-compassion levels of other populations in order to maximize well-being. It may also be that interventions should be modified to maximize their relevance to specific groups. Findings of group differences would also suggest that study findings with populations that lack diversity in terms of gender, age or ethnicity should not be generalized to other populations.

It has been suggested that meta-analysis is an ideal method for synthesizing and critically analyzing group differences (Hyde, 2005). Specifically, while individual studies may suggest gender differences, a meta-analysis of the size of these differences across studies often reveals that most variance between gender groups is shared rather than non-overlapping, such that true differences between gender groups on many psychological constructs should be interpreted as small or minimal. While a great deal of research has

focused on the effects of individual differences in self-compassion, little research has specifically focused on potential group-level differences in self-compassion. Consequently, the current meta-analysis attempts to summarize, across studies, the magnitude and direction of potential gender differences in self-compassion, including whether these gender differences are moderated by age or ethnicity. While such analyses cannot determine *why* group differences exist (or not), it is a necessary first step toward understanding the role of gender, age, and ethnicity in the experience of self-compassion.

Search and Rationale

The large majority of studies on self-compassion have been conducted with the self-compassion scale (SCS; Neff, 2003a), a 26-item self-report measure that assesses individual differences in trait self-compassion. Given self-compassion's relative youth in the field of psychology, our search for relevant literature was broad, including published peer-reviewed articles as well as dissertations that employed the SCS. We also included study samples of all age and ethnic groups, only excluding studies that were published in non-English languages or that altered critical psychometric aspects of the scale. The most basic criterion for being included in the current meta-analysis was that the study included administration of the SCS, either in its original 26-item form (Neff, 2003a) or its validated 12-item short form (Raes, Pommier, Neff, & Van Gucht, 2011), which has been found to have a near-perfect correlation with the long form.

The SCS (both the long and short forms) includes six subscales: Self-Kindness (e.g., "I try to be understanding and patient towards those aspects of my personality I don't like"), Self-Judgment (e.g., "I'm disapproving and judgmental about my own flaws and inadequacies"), Common Humanity (e.g., "I try to see my failings as part of the human condition"), Isolation (e.g., "When I fail at something that's important to me, I tend to feel alone in my failure"), Mindfulness (e.g., "When something painful happens I try to take a balanced view of the situation"), and Overidentification (e.g., "When I'm feeling down I tend to obsess and fixate on everything that's wrong"). Responses are given on a 5-point scale from "almost never" to "almost always." Confirmatory factor analyses determined that a single higher-order factor of self-compassion could explain the intercorrelations among the six subscales (the same factor structure was also found for the short form; Neff, 2003a; Raes, Pommier, et al., 2011). The original SCS was developed in an American undergraduate sample (166 men; 225 women; *M* age = 20.91 years; Neff, 2003a). The ethnic breakdown of this original sample was 58% White, 21% Asian, 11% Hispanic, 4% Black, and 6% Other. Research indicates that the SCS demonstrates good concurrent validity (e.g., correlates with social connectedness), convergent validity (SCS scores are significantly correlated with therapist and partner ratings of self-compassion), and discriminate validity (e.g., no correlation with social desirability or narcissism), and that the SCS has excellent test–retest reliability (Neff, 2003a; Neff & Beretvas, 2013; Neff, Kirkpatrick, et al., 2007).

Note that the SCS has been used by researchers from a variety of subfields of psychology (e.g., social, educational, clinical, sport) and with a variety of study populations (e.g., undergraduate subject pool participants, the elderly, Buddhist meditators, health care professionals, adults receiving clinical treatment for depression, etc.). Thus, synthesizing this varied literature is an important first step in determining if there are gender differences in self-compassion across various populations.

Because findings regarding gender differences in self-compassion have been so inconsistent and not systematically studied by prior research, and because so little research has examined the potential interaction of age and ethnicity with gender differences, we

considered this study exploratory and did not advance specific hypotheses concerning results.

Method

Inclusion and Exclusion Criteria

Our basic criterion for inclusion was administration of the SCS in either its original 26-item or validated 12-item short form. Several studies could not be included because researchers had altered one of a number of basic psychometric characteristics of the scale, such as using a non-validated, shortened version (e.g., Niiya, Crocker, & Mischkowski, 2013); relying on only select subscales (e.g., Webb & Forman, 2013); or altering the instructions to the scale (e.g., assessing "state" self-compassion; Breines & Chen, 2013). Other studies were excluded due to relying on a translated version of the scale; while some researchers conducted validation work in the translation process (e.g., Akin, 2010), this was inconsistently reported from one study to the next, making the validity of translated scales difficult to ascertain on the whole. We also excluded studies that incorrectly calculated and reported average scores on the scale, such that mean and standard deviation statistics were uninterpretable (e.g., Mistler, 2010). We did, however, include studies that utilized alternative numbers of response options (e.g., 7 points rather than 5; e.g., Welp & Brown, 2014) in an effort to include all usable data, given that our analyses focused on standardized ESs rather than the original means.

We included research findings presented in empirical journal articles and dissertations published between the time the SCS was first published in 2003 to September 2014, the time of our final data collection. We included all study age ranges and populations (e.g., student and general sample, and clinical and non-clinical), though as mentioned we excluded studies for which the scale was administered in a language other than English, given the difficulty in knowing whether aspects of self-compassion and of suffering translate seamlessly from one language to the next. We excluded meta-analyses, including one meta-analysis of mindfulness-based stress reduction (Chiesa & Serretti, 2009) and one meta-analysis of the association between self-compassion and psychopathology (MacBeth & Gumley, 2012), given that these do not provide unique estimates of male and female self-compassion scores. In studies with multiple self-compassion estimates per person or group (e.g., test–retest or pre- and post-treatment), we gathered only initial or pre-treatment data, and excluded retest and post-treatment measurements. This ensured that we synthesized baseline differences between gender groups, rather than gender differences in receptivity to particular interventions or treatment. In order to examine gender differences in self-compassion, SCS means (M) and standard deviations (SDs) were recorded for each study's male and female subpopulations. Finally, studies that had less than 5% of one gender were excluded due to the heavy bias that would be produced for one gender in this case, affecting the reliability of the sample's ES.

Moderator Analyses

We examined Age and Ethnicity as potential moderators of gender differences in self-compassion, considered jointly and in interaction with each other, using the North American samples of our data only. Subsetting our data for this analysis was important given basic differences in the cultural definition of ethnic groups across countries and continents. Age was recorded based on each study sample's mean age, which is generally reported as a demographic characteristic in the Method section of empirical articles and

dissertations. We did not interpolate age when it was reported in terms of range (e.g., 13–17 years) or a general description (e.g., high school sample), but rather relied only on precise reports of mean age. Ethnicity, our second potential moderator, was examined in terms of Percent Ethnic Minority, as calculated from studies' reported sample composition of White/European American, Black/African American, Hispanic/Latino/a, and Asian American participants. Prior to analyses, we recoded this ethnicity data into Percent Ethnic Minority, calculated as 100% minus Percent White, due to inconsistencies in reports of the proportion of participants falling into the more detailed ethnic categories. While it would have been ideal to conduct a more detailed examination of ethnicity, there were not enough studies available to examine each ethnic group separately.

Search Strategies

Our searches were conducted in two phases: in an original search in September 2012 and in a refreshment search in September 2014 given the speed at which self-compassion research is increasing. In fact, the number of publications referencing self-compassion doubled between 2012 and 2013 ($n = 52$ to $n = 104$). Both phases were conducted by searching online databases for references containing the term "self-compassion" in the title or abstract. PsycINFO, ERIC, and Academic Search Premier databases were used to acquire peer-review journal articles, and ProQuest Dissertations and Theses Full Text was used to acquire full-text dissertations available online. All articles and dissertations published after initial scale publication (Neff, 2003a) were eligible for review, including this original study. These searches produced a combined total of 334 unique publications, including 238 articles and 96 dissertations, which provided a total of 421 ES estimates (with some publications providing more than one estimate). After applying the inclusion and exclusion criteria outlined earlier and represented in Figure 1, a total of 71 publications remained eligible for inclusion in our analyses, providing a total of 88 estimates.

Coding Procedures

The 71 publications eligible for analysis were divided into approximately equal portions and were coded independently by the study authors. In addition to coding the mean self-compassion levels of males and females in study, we also coded the average age and ethnic composition of samples in the reviewed studies, and were able to use these study characteristics formally in our analyses as potential moderators of gender differences in self-compassion. When study authors did not provide sufficient information on critical meta-analysis variables (gender and the two moderator variables), we contacted authors in order to retrieve these data. When authors responded, we added all information possible to our records. This resulted in the removal of 125 study estimates due to nonresponse, decline of participation, or authors' lack of access to the data (see Figure 1). Though the omission of studies due to lack of information was unfortunately high, response of authors to requests for more detailed information needed for meta-analysis estimates are frequently lower than 50% (Orwin & Vevea, 2009). We also noted country in which studies were conducted (72.73% USA, 9.09% Australia, 7.95% Canada, 6.82% Great Britain, 2.27% Belgium, and 1.14% multi-national) as well as overall sample N (range from 22 to 584, $M = 151.58$, $SD = 127.43$) for all eligible studies.

Meta-Analytic Procedures

Overall mean ESs and homogeneity tests were computed using the formulae provided in Card (2012) using SPSS 21. All included studies provided M and SD on the SCS by
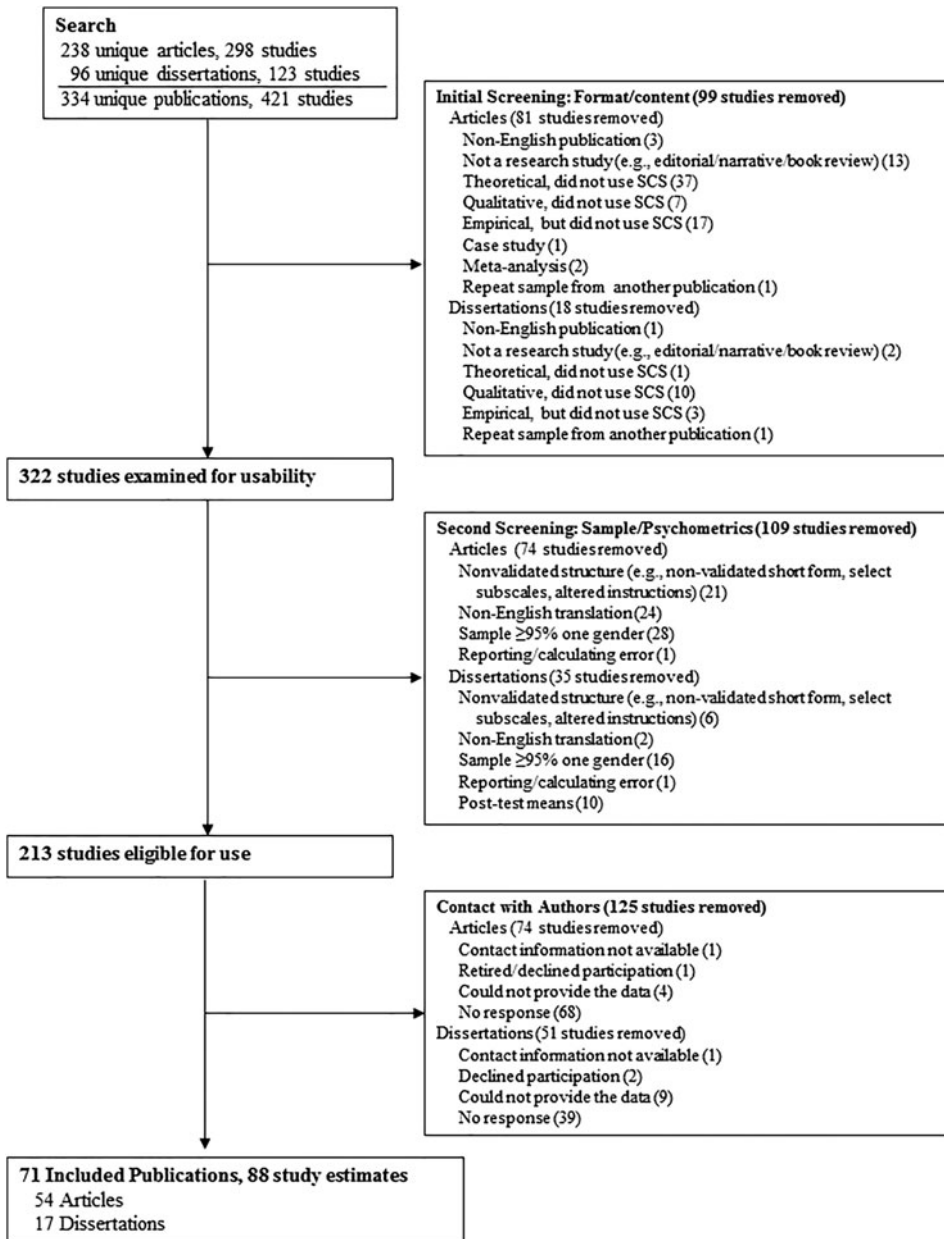
FIGURE 1 Flowchart illustrating the literature search and exclusion process (counts).

gender, which allowed us to utilize Cohen's *d* as the ES metric. This ES was calculated for each independent sample and represented the standardized mean difference between males and females for each group's average self-compassion score (positive *d* for male *M* > female *M*; negative *d* for female *M* > male *M*). After calculating the average ES across studies, we tested whether Cohen's *d* varied as a function of studies' average age and proportion ethnic minority in two meta-regressions. All potential moderators were centered to ease interpretation and to avoid collinearity when more than one predictor was incorporated into the model.

Fixed-effect models were used for the meta-analyses. This study only included estimates from the same measure of self-compassion (i.e., the SCS), which many studies have demonstrated to be a reliable assessment. This makes it theoretically likely that these observed ESs are estimates of a single population parameter. Homogeneous ESs across samples support that there is a common ES, meaning that a fixed-effect model is appropriate. In these circumstances, fixed-effect models are preferred over their random- or mixed-effect counterparts as they reach identical parameter estimates and provide greater statistical power (Card, 2012; Shadish & Haddock, 2009). When calculating the average ES across all studies, the fixed-effect model gives more weight to larger samples and to studies with greater precision.

Though the fixed-effect model states that there is an overall ES, effect studies are assumed to vary around this parameter due to sampling error and the effect of fixed covariates (Shadish & Haddock, 2009). We relied on the Q-statistic as a standardized measure of the variation in ESs. Homogeneity of ESs is rejected when the Q-statistic is statistically significant. A non-significant Q-statistic supports the use of the fixed-effect model and the interpretation that the observed sample ESs are estimates of a common population parameter. We also utilized the I^2 statistic as a descriptor of the variability of the ESs, which reflects the proportion of the observed variance that is due to real differences in ESs (Borenstein, Hedges, Higgins, & Rothstein, 2009).

A primary interest in the current meta-analysis was whether there were characteristics that explained differences in ESs across samples. The impact of moderating variables (i.e., predictors) was studied using a series of meta-regressions. In the fixed-effect model, the impact of the predictors on ESs is assumed to be constant (i.e., fixed) across samples. These analyses determine whether there is a significant proportion of variability common across the ESs that can be attributed to a moderating variable. Q-statistics were used in meta-regression analyses as a reflection of whether the potential moderators accounted for a significant amount of heterogeneity in the ESs.

Prior to analyses, ESs were found to be approximately normally distributed, skew = 0.45, kurtosis = 0.34, $K\text{-}S$ (88) = .06, p = .20. No outliers were found outside of those previously mentioned as being miscalculated; these had SDs that were statistically impossible given the scale of the SCS, and were not included in analyses. We analyzed publication bias using visual inspection of a funnel plot (Figure 2), which graphs ES as a function of sample size. The funnel plot indicated greater variation in ES for studies with smaller sample sizes, as is to be expected given larger standard errors of estimates; however, there was even dispersion of positive and negative ES estimates across all sample sizes, suggesting that publication bias was not an issue in our meta-analysis.

Results

The 71 publications examined in our study, including a total of 88 study samples, yielded a total of 13,339 participants. The majority of publications contributed only one sample to the meta-analysis (n = 59, 67%), with the remaining studies contributing 2–4 samples each (eight with 2 samples, three with 3 samples, and one with 4 samples). Multiple samples from a single publication were only included only if the samples were independent of one another. The average sample was 66.24% female (SD = 13.59%), and mean ages ranged from 15.20 to 73.42 with an overall average age of 28.08 (SD = 11.26). The included studies examined a variety of populations: 8 samples (9.09%) were from clinical populations, 49 samples (55.68%) were from university student populations, and 31 samples (35.23%) were collected outside of a clinical or university setting. An overview of the included studies is provided in Table 1. Standardized mean differences
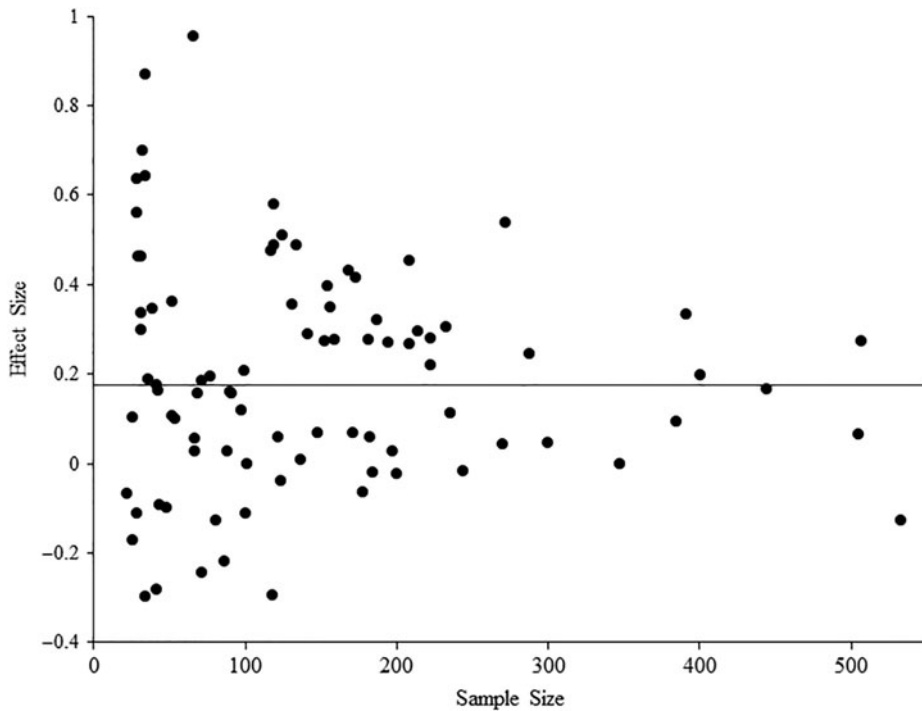
FIGURE 2 Funnel plot of ESs against sample sizes.

in males' and females' levels of self-compassion were calculated for the 88 estimates and ranged from $d = -.30$ to $d = .96$ ($SD = 0.25$), with 71 (74.73%) being in the positive direction.

Of the total 88 included samples, eight sample estimates were obtained from research using an altered form of the SCS. These were altered either by using a 7-point scale, the 12-item short-form of the SCS, or slightly altered wording to reflect a specific referential time frame when responding to items. A sensitivity analysis was conducted to analyze the comparability of these ES estimates to those obtained from samples using the original SCS. Due to the small number of altered studies and two samples using combinations of alterations, these eight studies were compared as a whole to the other estimates. A meta-regression indicated that the estimates obtained from studies using the altered form were not significantly different from those using the original SCS ($\beta = -0.05$, $z = -0.72$, $p = .47$). This supported their use in all further analyses.

Magnitude of Gender Differences

Across all 88 studies, the overall weighted ES was small but significant, $d = .18$, $SE = .02$, $p < .0001$, with a 95% confidence interval of $d = .14$ to $d = .22$. This ES suggests that males report self-compassion levels that are an average of .18 SDs higher than those of females. This ES is approximately equivalent to a correlation of $r = .09$ between self-compassion and the percentage of females in a sample (Cohen, 1988; Hyde, 2014). Both of these interpretations indicate that though males report higher self-compassion than females, there is a great deal of similarity in their responses. These ESs were not significantly heterogeneous across studies, Q (87) $= 107.73$, $p = .07$. The proportion of the observed variance that reflects real differences in ESs was low,

TABLE 1 Descriptive Information on Included Studies

Study (year), publication format	Sample	N	Age (M)	Ethnic Minority (%)	Cohen's d (95% CI)
Neff (2003a), A	Undergraduate students	391	20.91	42.00%	.34 (.13–.54)
Neff (2003a), A	Undergraduate students	232	21.31	42.00%	.31 (.04–.57)
Neff (2003a), A	Buddhists in the USA recruited from a listserv	43	47.00	9.00%	−.09 (−.71–.53)
Williams (2004), D	Undergraduates at large Southwestern university	66	20.40	100.00%	.03 (−.56–.62)
Neff et al. (2005), A	Educational psychology undergraduates	222	20.94	43.00%	.28 (.01–.55)
Neff et al. (2005), A	Educational psychology undergraduates	214	20.65	27.00%	.30 (.03–.57)
Shapiro et al. (2005), A	Health care professionals	38	47.00	(not available)	.35 (−.53–1.22)
Kirkpatrick (2005), D	University students	80	21.05	46.25%	−.13 (−1.31–1.06)
Ortner (2006), D	Meditators from Buddhist meditation center	28	35.90	(not available)	−.11 (−.85–.63)
Ortner (2006), D	Students and residents of Toronto	68	23.00	(not available)	.16 (−.40–.72)
Weibel (2007), D	Psychology students at a Midwest university	71	19.00	22.00%	.19 (−.37–.74)
Shapiro et al. (2007), A	Master's level students	54	29.20	23.10%	.70 (−.27–1.67)
Neff, Kirkpatrick, et al. (2007), A	Undergraduates at large Southwestern university	91	20.90	58.00%	.16 (−.33–.65)
Neff, Rude, et al. (2007), A	Educational psychology undergraduates	177	20.02	44.00%	−.06 (−.38–.25)
Mills et al. (2007), A	Undergraduate students	131	22.10	(non-American)	.36 (.00–.71)
Rockliff et al. (2008), A	Students at the University of Derby	22	22.77	(non-American)	−.07 (−1.00–.87)
Thompson and Waltz (2008), A	Introductory psychology students	210	20.72	(not available)	.45 (.17–.74)
Neff et al. (2008), A	American undergraduates	181	21.40	(not available)	.28 (−.03–.59)
Ying and Han (2009), A	Entering Master of Social Work students	66	29.74	33.30%	.06 (−.78–.90)
Stuart (2009), D	Undergraduates at large Southwestern college	173	19.09	41.00%	.42 (.11–.72)
Franklin and Doran (2009), A	First-year university students	34	24.44	(non-American)	.64 (−.08–1.36)
Kelly et al. (2010), A	General population adults wanting to quit smoking	119	24.42	36.10%	.49 (.14–.83)
Raes (2010), A	First year psychology undergraduates	271	18.14	(non-American)	.54 (.24–.84)
Neff and McGehee (2010), A	Adolescents in private, middle-class high school	235	15.20	21.00%	.11 (−.14–.37)
Neff and McGehee (2010), A	Young adults at large Southwestern U.S. college	287	21.10	32.00%	.25 (.01–.48)
Zabelina and Robinson (2010), A	Undergraduate students	86	20.01	10.00%	−.22 (−.66–.23)
Kuyken et al. (2010), A	Patients with recurrent depression	123	49.16	(non-American)	−.29 (−.73–.14)
Birnie et al. (2010), A	Continuing education students	51	47.40	21.60%	.11 (−.48–.70)
Newsome (2010), D	Students in a class on mind–body medicine	31	29.26	61.29%	.30 (−.75–1.35)
Van Dam et al. (2011), A	Adults with perceived anxiety problems	504	38.20	13.70%	.07 (−.14–.28)
Wei et al. (2011), A	College students in current/past relationships	195	20.07	4.60%	.27 (−.01–.56)
Wei et al. (2011), A	Community adults	136	43.44	17.00%	.01 (−.33–.35)

Study	Sample	N	Age	%	r (CI)
Raque-Bogdan et al. (2011), A	Undergraduate students	208	20.00	32.21%	.03 (−.31–.36)
Baker and McNulty (2011), A	Undergraduate students	243	19.86	19.75%	−.02 (−.27–.24)
Baker and McNulty (2011), A	Newly-wed heterosexual couples without children	270	26.06	7.00%	.04 (−.25–.34)
Baker and McNulty (2011), A	Newly-wed heterosexual couples	101	27.66	7.03%	.00 (−.39–.39)
Gilbert et al. (2011), A	University students	222	22.70	(non-American)	.22 (−.08–.52)
Gilbert et al. (2011), A	Therapists attending a CFT workshop	53	39.52	(non-American)	.10 (−.65–.85)
Paglia-Boak et al. (2011), A	Children involved in Child Protective Services	117	18.10	73.00	.48 (.09–.86)
Raes (2011), A	First-year psychology students	347	18.27	(not available)	.00 (−1.88–1.88)
Jazaieri et al. (2012), A	Untreated group of adults with SAD	29	32.30	51.70%	.46 (−.28–1.21)
Jazaieri et al. (2012), A	Adults with SAD assigned to MBSR	31	32.87	58.10%	.34 (−.39–1.07)
Jazaieri et al. (2012), A	Adults with SAD, assigned to AE	25	32.88	60.00%	.10 (−.70–.91)
Jazaieri et al. (2012), A	Healthy adult comparison group	48	33.90	44.00%	−.10 (−.67–.47)
Jazaieri et al. (2013), A	Community adults	100	43.06	29.00%	−.11 (−1.71–1.49)
Stafford-Brown and Pakenham (2012), A	Clinical psychology trainees	28	28.79	(non-American)	.56 (−.64–1.77)
Stafford-Brown ad Pakenham (2012), A	Waitlisted clinical psychology trainees	28	28.11	(non-American)	.64 (−.43–1.71)
Wren et al. (2012), A	Patients with persistent musculoskeletal pain	88	53.93	44.30%	.03 (−.43–.49)
Barnard and Curry (2012), A	Clergy in Southeastern USA	69	50.53	4.00%	−.24 (−.73–.24)
Newsome et al. (2012), A	University students in helping professions	31	29.26	61.30%	.46 (−.39–1.32)
Clark (2012), D	Undergraduate students	159	19.70	33.00%	.28 (−.97–1.52)
Khoo (2012), D	Undergraduate students at Penn State	200	19.31	20.00%	−.02 (−1.71–1.66)
Miron (2012), D	Undergraduate students	584	19.70	39.90%	.09 (−1.29–1.46)
Miron, (2012), D	Undergraduate students	97	19.80	34.00%	.12 (−1.21–1.45)
Ramkumar (2012), D	University students	123	19.94	31.70%	−.04 (−.55–.47)
Tatum (2012), D	Community adults	444	29.38	25.00%	.17 (−1.20–1.54)
Bergen-Cico and Cheon (2013), A	Students enrolled at a private university	168	23.17	38.00%	.43 (−.72–1.59)
Murn (2013), D	College students	299	25.90	21.70%	.05 (−1.83–1.92)
Bergen-Cico et al. (2013), A	Undergraduate students	119	21.20	36.00%	.49 (−.65–1.62)
Bluth and Blanton (2013), A	High school students in the southeast USA	65	16.03	26.90%	.96 (−.03–1.94)
Brooker et al. (2013), A	Community adults	34	42.90	(not available)	.87 (−.23–1.97)
Hall et al. (2013), A	Undergraduate students	182	20.50	31.00%	.06 (−1.03–1.15)
Johnson and O'Brien (2013), A	Students from a Western Canadian university	335	19.02	46.30%	.35 (−1.28–1.98)
Kearney et al. (2013), A	Veterans with PTSD	42	53.60	16.70%	.16 (−1.28–1.60)
Neff and Beretvas (2013), A	Couples from Austin, Texas	208	26.90	18.00%	.27 (−.91–1.44)

TABLE 1 (*Continued*)

Study (year), publication format	Sample	N	Age (M)	Ethnic Minority (%)	Cohen's d (95% CI)
Neff and Germer (2013), A	Community adults	52	50.10	(not available)	.36 (−.90–1.63)
Neff and Pommier (2013), A	Undergraduate students	384	20.92	32.00%	.10 (−1.14–1.33)
Neff and Pommier (2013), A	Community adults	400	33.27	21.00%	.20 (−.99–1.39)
Neff and Pommier (2013), A	Practicing meditators	172	47.49	14.00%	.07 (−1.07–1.21)
Phillips and Ferguson (2013), A	Aging community adults	184	73.42	(not available)	−.02 (−1.10–1.07)
Rimes and Wingrove (2013), A	Patients with Chronic Fatigue Syndrome	36	43.80	8.00%	.19 (−1.42–1.80)
Sauer-Zavala et al. (2013), A	Psychology undergraduates	141	18.85	15.00%	.29 (−1.09–1.66)
Woodruff et al. (2013), A	Undergraduates at a Mid-Atlantic university	147	n/a	21.80%	.07 (−1.09–1.23)
Yarnell and Neff (2013), A	Undergraduate students	506	20.79	46.00%	.28 (−.86–1.42)
Richards (2013), D	Undergraduate students	25	20.72	32.00%	−.17 (−1.42–1.07)
Williams (2013), D	High school students	119	16.30	66.70%	.58 (−.54–1.70)
Yadavaia (2013), D	College students	532	n/a	27.26%	−.13 (−1.45–1.20)
Chandler (2013), D	Undergraduate sexual minority students	98	28.00	11.10%	.21 (−.27–.68)
Hindman (2013), D	College students	34	22.35	29.40%	−.30 (−1.74–1.15)
Breines et al. (2014), A	Young adults in the Boston area	41	24.26	49.00%	.18 (−1.24–1.59)
Greeson et al. (2014), A	Undergraduate and graduate students	90	25.40	38.00%	.16 (−1.21–1.53)
Odou and Brinker (2014a), A	Undergraduate students in psychology	187	20.90	39.00%	.32 (−.96–1.60)
Odou and Brinker (2014b), A	Undergraduate students in psychology	152	21.30	37.00%	.27 (−.94–1.48)
Van Dam et al. (2014), A	Community adults with peri-clinical depression/stress	41	n/a	15.47%	−.28 (−1.50–.94)
Welp and Brown (2014), A	Adults recruited through Mechanical Turk	124	35.33	26.00%	.51 (−1.07–2.10)
Welp and Brown (2014), A	Adults recruited through Mechanical Turk	121	32.66	35.00%	.06 (−1.25–1.37)
Woods and Proeve (2014), A	Undergrads at a South Australian university	212	21.32	(not available)	.40 (−.85–1.64)
Lindsay et al. (2014), A	College students at Carnegie Mellon university	77	21.00	44.00%	.20 (−1.13–1.52)

Note: A, article; D, dissertation. Average age is expressed in years. Ethnic minority is expressed as percent of the sample that was ethnic minority (non-White), reported for North American studies only; reported as "not available" when applicable but could not be obtained; reported as "non-American" when sample was not based in North America. Positive ES values indicate higher mean SCS scores for men than women in a given study. CFT, Compassion Focused Therapy; SAD, Seasonal Affective Disorder; MBSR, Mindfulness-Based Stress Reduction; AE, Aerobic Exercise; CI, Confidence Interval; PTSD, Post Traumatic Stress Disorder. Effect sizes can be interpreted against the following rules of thumb: small = .20, medium = .50, large = .80 (Cohen, 1988).

$I^2 = 19.24\%$. The lack of variability in ESs supports the use of the fixed-effects model and the inference that the sample ESs are estimates of the self-compassion gender difference in the population. Additional moderation analyses were used to investigate whether there are additional sample characteristics that explain the deviation of the sample ESs from the true ES.

Moderator Analyses

Our first meta-regression investigated whether the ES for gender differences in self-compassion was moderated by the average age of a sample or by proportion of a sample that was ethnic minority, conducted among the North American samples only ($n = 69$). Preliminary models run among the subset of North American samples providing both age and ethnicity data ($n = 60$) revealed an overall weighted ES that was equivalent to that found across all studies: $d = .18, SE = .02, p < .0001$, with a 95% confidence interval of $d = .14$ to $d = .22$. This group of samples also did not demonstrate significant variability in ES estimates, $Q(59) = 63.06, p = .33$, and had a very small proportion of variance accounted for by real differences in ESs rather than sampling error, $I^2 = 6.45\%$. On average, studies reported mostly White samples (yet with a considerable range of Percent Ethnic Minority from 4% to 100%; see Table 1).

A fixed-effects meta-regression for this subsample including both Age and Percent Ethnic Minority predictors showed that the overall model explained a significant amount of heterogeneity in the ESs, $Q(2) = 9.76, p < .01$, but only Percent Ethnic Minority explained a significant amount this variability, $\beta = .36, Z = 2.28, p < .05$.[1] (Note that in sensitivity analyses, Age was significant when entered alone, $p < .05$; as was Percent Ethnic minority when entered alone, $p < .01$. When examined for collinearity, these predictors in fact bore a small correlation, $r = -.33, p < .05$, suggesting 10% overlap. However, the impact of each predictor when entered simultaneously suggests that Ethnicity carries the most weight in explaining variation in ESs across studies.) The positive direction of this effect suggests that within our North American samples, the greater the percentage of ethnic minorities in a given study, the larger the gender difference in reported self-compassion.

In two separate follow-up meta-regressions, we considered the interaction of Age and Ethnicity, as well as nonlinear effects of Age using an Age Squared term. In order to prevent collinearity issues, Age and Ethnicity were centered by subtracting their respective weighted means (weighted by the inverse variance weights). The interaction and squared terms used in these two regressions were then created from those centered

TABLE 2 Overall Weighted Effect Sizes and Effects of Moderating Variables among All Studies and North American Subset

	Parameter	SE	95% CI	Z	Q
All-study meta-analyses ($N = 88$)					
Overall weighted ES	$d = 0.18$***	0.02	(0.14, 0.22)	9.52	107.73
North American meta-analysis and meta-regression ($n = 60$)					
Overall Weighted ES	$d = 0.18$***	0.02	(0.14, 0.22)	8.17	63.06
Moderation effects					
Age	$\beta = 0.00$	0.00	$(-0.01, 0.00)$	-1.28	–
Percent ethnic minority	$\beta = 0.36$*	0.16	(0.05, 0.66)	2.27	9.76**

Note. All meta-analyses and meta-regressions conducted with a fixed-effect model. Age and Percent Ethnic Minority were entered in conjunction in the North American meta-regression. *$p < .05$. **$p < .01$. ***$p < .001$.

predictors. These models showed that neither of these interaction terms, however, explained additional variance in self-compassion ESs above the effects of the main predictor variables ($p = .80$ and $p = .54$, respectively).

Discussion

Our analysis revealed a small but meaningful difference in the average levels of self-compassion among males and females in self-compassion research to date. The finding that women are less self-compassionate than men is consistent with past findings that females tend to be more critical of themselves and to use more negative self-talk than males do (DeVore, 2013; Leadbeater et al., 1999). Unfortunately, this tendency on the part of women has also been associated with a higher incidence of depression among females (Nolen-Hoeksema, 1987). These findings suggest that it may be particularly important to help women learn how to be self-compassionate rather than self-critical in order to enhance their psychological well-being. It should be kept in mind, however, that while these results suggest that gender differences in self-compassion do exist, as with many psychological constructs, the majority of variance in male-female levels of self-compassion is shared (Hyde, 2005). Thus, gender differences in self-compassion should not be overemphasized.

This central finding of our study is interesting, given that meta-analyses have indicated that women they also tend to be more compassionate to *others* than men (Eisenberg & Lennon, 1983). Women are often assigned the role of caregivers in society, with feminine gender-role norms emphasizing nurturance and self-sacrifice (Ruble & Martin, 1998). Clearly, this emphasis on compassion does not always translate into how women relate to *themselves*, however. In other words, the discrepancy between the level of compassion given to oneself versus to others appears to be larger among women than men (Neff & Pommier, 2013). This is unfortunate because research indicates that self-compassion helps prevent the stress and burnout often experienced by caregivers (Barnard & Curry, 2012; Neff & Faso, 2014; Shapiro, Brown, & Biegel, 2007). It may be particularly helpful for women to receive direct training in self-compassion, therefore, in order to learn how to balance caring for themselves and others. Luckily, however, the fact that women are "compassion experts" means that the skill of compassion may actually be more accessible to women than men with proper training. For instance, the MSC program relies upon the instruction "how would you treat a dear friend in the same circumstances" (Germer & Neff, 2013) to help foster compassion toward the self. It may be that these approaches are particularly effective for women, though this will have to be explored in future research.

We also found that the average ES for gender differences among North American studies (the subset used for our moderation analyses) was virtually identical to that of the overall sample. The finding that the average difference in male and female self-compassion was consistent across all nations in our entire sample and in North American countries alone suggests that this difference may be widespread. However, this meta-analysis was not able to gather enough samples from other distinct global regions to determine their ESs, so it may remain that global differences do exist in the gap between men and women's levels of self-compassion. As international research on self-compassion grows, a collection and analysis of these studies may be possible in the future.

Moderation by Age and Ethnicity

In our main meta-regression model, we found that the percent of study samples that was ethnic minority moderated the magnitude of the ES of gender differences in self-

compassion, with greater proportions of ethnic minorities associated with greater magnitude of the effect. This suggests that the gender gap in self-compassion favoring males is larger among non-Whites than Whites. While it is difficult to understand exactly why this is the case, there are at least two possible explanations. If the non-White ethnic minority participants tended to have more traditional gender roles, then females might have placed more emphasis on meeting the needs of others rather than themselves than males did. If so, this might mean they were less likely to meet their own emotional needs with self-compassion, and to instead focus on the needs of others. Men, who typically enjoy more personal prerogative in traditional cultures, may also be more comfortable giving themselves compassion.

However, in Neff et al.'s (2008) study of self-compassion in the USA, Thailand, and Taiwan, gender differences were only found in the USA, and *not* in either of the more traditionally oriented Asian countries. This might suggest that the reason for gender differences in self-compassion lies not so much in traditional gender norms in particular cultures, but in minority status itself. Non-White women in North American cultures are marginalized both by their gender and their ethnicity (Delgado & Stefanic, 2001). This may make them more self-critical for survival purposes. Paul Gilbert (2009), who views the development of self-compassion through the lens of evolutionary psychology, proposes that self-compassion taps into our safety-soothing system (associated with the caregiving and attachment), while self-criticism taps into our threat–defense system (associated with feelings of danger and autonomic arousal). Although the threat–defense system was designed by evolution to deal with physical danger, it is activated just as readily by threats to our self-concept. This may mean that marginalized groups like non-White women in North American cultures are more self-critical because they are more threat sensitive, and are less able to experience the sense of safety associated with self-compassion. Further research into this topic is warranted.

Interestingly, our sensitivity analyses also revealed that age was negatively associated with the magnitude of ES for gender, with the gender gap in self-compassion reduced among older samples. This pattern may reflect the fact that gender roles tend to become less extreme over development (Cournoyer & Mahalik, 1995), and that an understanding of common humanity increases with age (Ardelt, 2000, 2010). Of course, the interpretation of age as a moderator of the uncovered ES need not be a developmental one, as it may be due in part to birth cohort or historical effects. However, the effect of age on ES was no longer significant when ethnic composition of the sample was considered simultaneously. This may reflect the fact that younger samples tended to have slightly larger percentages of ethnic minorities, given the small, negative correlation between these predictors. The size of ethnic groups in North America may be linked to age due to differences in population growth, for example, and institutions that differ inherently on age (such as colleges) may also have different proportions of ethnic minorities. Further research on the dual contributions of age and ethnicity on gender differences in self-compassion will be needed to understand this finding more clearly.

Limitations and Future Research Directions

This study has limitations that are necessary to address. First, this study was not able to focus on many sample characteristics that could have influenced gender-related findings, such as the clinical versus nonclinical nature of the sample, or college versus non-college status. These variables should be examined more closely in future research. The study was also limited by that fact that our moderators could only be examined in North American samples, and that only the general categories of White and non-White could be used.

Future research will need to examine ethnicity in more fine-grained detail, as it may the case that particular ethnic groups differ in terms of gender differences in self-compassion. Though our analysis of an interaction between age and ethnicity suggested this is not the case, sample size is again an issue, which may be addressed in a more extensive collection of data. Future studies should be conducted within a variety of cultures to better understand if effects are due to culture or ethnic minority status. Future research should also examine if within-gender differences such as gender role orientation or sexual orientation impact levels of self-compassion.

A second limitation is that we did not incorporate unpublished studies in our meta-analysis. These may have been recruited using tools such as listservs, yet it is not clear that unpublished studies would meet standards of scientific rigor as do publications that have gone through the review process. Additionally, our analysis of publication bias supported non-bias of publication of studies with regard to ES.

Finally, a major limitation of the study is that it cannot tell us *why* group differences in self-compassion were found. Is it because women are more likely to judge themselves, for instance, less likely to experience feelings of common humanity, or some other specific difference? One way to fruitfully understand this issue would be to conduct an analysis of gender differences in subscale scores. Unfortunately, such an examination was not possible in the current study given that the vast majority of research studies using the SCS report total scores only and not subscale scores. With more and more research being conducted on self-compassion, however, this may change and subscale analyses may become possible. It may also be the case that new research could be specifically designed to obtain information on why gender differences exist either by analyzing differences in subscales or by employing more qualitative approaches. Still, the current study is an important first step in understanding the role of gender in the experience of self-compassion.

Notes

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1. Note that the size of the beta weights for Age and Percent Ethnic Minority are partially a function of scaling of these variables, which does not affect their statistical significance. Specifically, Percent Ethnic Minority was coded on a scale from 0.00 to 1.00, typically a decimal value; whereas Age was on a scale of years (15 to 73). If rescaled, Percent Ethnic Minority values could be multiplied by 100 to yield a beta weight of $\beta = .0036$, though the statistical significance of all predictors in the model would remain the same. (Another option would be to divide Age values by 100, to achieve similar scaling between the two variables.) However, we chose to retain original scales for these predictors for more straightforward interpretation.

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