APPLIED PSYCHOLOGY: Health and Well-Being

APPLIED PSYCHOLOGY: HEALTH AND WELL-BEING, 2015
doi:10.1111/aphw.12051

The Relationship Between Self-Compassion and Well-Being: A Meta-Analysis

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Background: Self-compassion describes a positive and caring attitude of a person toward her- or himself in the face of failures and individual shortcomings. As a result of this caring attitude, individuals high in self-compassion are assumed to experience higher individual well-being. The present meta-analysis examines the relationship between self-compassion and different forms of well-being. **Method:** The authors combined $k = 79$ samples, with an overall sample size of $N = 16{,}416$, and analyzed the central tendencies of effect sizes (Pearson correlation coefficients) with a random-effect model. **Results:** We found an overall magnitude of the relationship between self-compassion and well-being of $r = .47$. The relationship was stronger for cognitive and psychological well-being compared to affective well-being. Sample characteristics and self-esteem were tested as potential moderators. In addition, a subsample of studies indicated a causal effect of self-compassion on well-being. **Conclusions:** The results clearly highlight the importance of self-compassion for individuals' well-being. Future research should further investigate the relationship between self-compassion and the different forms of well-being, and focus on the examination of possible additional moderators.

Keywords: happiness, meta-analysis, moderator, self-compassion, well-being

INTRODUCTION

The pursuit of *well-being* is a highly valued goal in life. In search of possible determinants of well-being, some meta-analyses have explored the relationship

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between personality and well-being (DeNeve & Cooper, 1998; Steel, Schmidt, & Shultz, 2008). In this context, a relatively new personality construct has received increasing interest: s*elf-compassion*. Self-compassion explains unique variance in positive functioning beyond the influence of the personality traits of the five factor model (Neff, Rude, & Kirkpatrick, 2007). It is defined as a healthy attitude toward oneself and is assumed to influence individuals' evaluations of potentially threatening situations (Neff, 2003a). Therefore, self-compassion could be a meaningful variable in the development and maintenance of well-being. The present meta-analysis examines the relationship between self-compassion and well-being.

Well-Being

In psychological research, different conceptualisations of well-being have been suggested. There is no exclusive pre-eminent definition or approach to well-being, but there are two very prominent and well-explored approaches to well-being: *subjective well-being* (Diener, 1984) and *psychological well-being* (Ryff, 1989). This current meta-analysis concentrates primarily on these two prominent approaches to well-being.

Subjective Well-Being. Subjective well-being describes how people evaluate their life, including emotional and cognitive judgments (Diener, 1984; Diener & Chan, 2011). Generally, subjective well-being can be divided into two different parts: cognitive well-being and affective well-being (Diener, 1984; Eid & Larsen, 2008). Cognitive well-being characterises the cognitive evaluation of life, which is often called *life satisfaction*. Affective well-being characterises the presence of positive or pleasant affects and the absence of negative or unpleasant affects. These two facets are distinctive constituent parts of subjective well-being and should be analyzed separately (Pavot, Fujita, & Diener, 1997).

Psychological Well-Being. Psychological well-being (Ryff, 1989) characterises a more eudemonic view of well-being (Ryan & Deci, 2001). It describes "the fulfillment of human potential and a meaningful life" (Chen, Jing, Hayes, & Lee, 2013, p. 1034). Psychological well-being is associated with the pursuit of realisation of one's true potential and focuses on the optimal functioning of the individual (Huppert, 2009). As with cognitive well-being, aspects of psychological well-being underlie cognitive evaluations, but they concern aspects of individuals' functioning other than cognitive well-being (Keyes, Shmotkin, & Ryff, 2002).

Chen et al. (2013) analyzed the factorial structure behind subjective and psychological well-being using a bifactor model to investigate any unique and shared variance. On the one hand, they found a strong, general factor that contains the shared ground of these two concepts. On the other hand, they also

found some specific factors of subjective and psychological well-being after partialling out the general well-being factor. Therefore, these two conceptualisations of well-being should be analyzed individually, whereas their commonalities should not be ignored.

Other Conceptions of Well-Being. Other conceptions of well-being include the common construct happiness. Happiness describes either a cognitive or an affective evaluation of life (Luhmann, Hofmann, Eid, & Lucas, 2012). Therefore, it will not be treated as another single form of well-being. Rather, it will be assigned to one of the other conceptualisations of well-being, depending on the operationalisation and definition in the particular study. Further approaches and types of well-being have not been ignored, but they cannot be analyzed in complete depth due to the small number of corresponding studies. These are, for example, relational well-being (Yarnell & Neff, 2013) or spiritual well-being (Peterman, Fitchett, Brady, Hernandez, & Cella, 2002). They will be combined and considered in the analysis as an additional well-being variable called *other types of well-being*.

This meta-analysis focused primarily on positive aspects of well-being and less on negative aspects, such as psychopathology variables (e.g. depressive symptoms, anxiety). MacBeth and Gumley (2012) have already conducted a very insightful meta-analysis on the relationship between self-compassion and psychopathology variables. They found strong, negative correlations between self-compassion and different measurements of psychopathology (depression symptoms: $r = -.52$; anxiety: $r = -.51$; stress: $r = -.54$). Besides these relations between self-compassion and psychopathology, a meta-analytic examination of the relationship between self-compassion and positive aspects of well-being is also necessary, given that self-compassion is explicitly assumed to positively influence individuals' well-being, whereas—in terms of the dual-factor model of mental health—well-being is not necessarily always the result of lack of psychopathology (Greenspoon & Saklofske, 2001; Wang, Zhang, & Wang, 2011). Therefore, along with MacBeth and Gumley's meta-analysis, this present work could facilitate a more complete understanding of the relation between self-compassion and mental health.

Overall, the present meta-analysis considers the relation of self-compassion to four different forms of well-being: *cognitive well-being*, *positive affective well-being*, *negative affective well-being*, and *psychological well-being*. Other specific forms of well-being will be considered as an additional variable called *other types of well-being*. This structure was based on the theoretical approaches and background of well-being. Further, it was aligned with other comparable meta-analyses regarding the analysis of well-being because they used a similar procedure (e.g. DeNeve & Cooper, 1998; Steel et al., 2008; Luhmann et al., 2012).

Self-Compassion

Interest in self-compassion has arisen from findings in diverse applied psychological fields, such as integration into psychotherapy and healthcare in health psychology (Neff & Tirch, 2013), or effects on job satisfaction in work psychology (Abaci & Arda, 2013). An important aspect of Buddhist psychology is the assumption that behavior and thinking occur in light of awareness and sensitivity (Neff, 2003a). Self-compassion is relatively similar to the more general construct of *compassion* (Neff, 2012; Gilbert, 2014). Compassion describes "being touched by the suffering of others, opening one's awareness to others' pain and not avoiding or disconnecting from it, so that feelings of kindness toward others and the desire to alleviate their suffering emerge" (Neff, 2003a, pp. 86–7). Self-compassion involves the same aspects, but these aspects are directed toward one's own suffering. It can be described as a positive and caring attitude of a person toward him- or herself in the face of failures and individual shortcomings.

There are three interrelated elements within the construct that determine the self-compassionate reactions to negative events and experiences (Neff, 2003a; Barnard & Curry, 2011): self-kindness versus self-judgment, sense of common humanity versus isolation, and mindfulness versus over-identification. S*elf-kindness* describes an understanding behavior toward oneself in the face of suffering. C*ommon humanity* describes the perception and classification of one's experiences as part of mankind, rather than an interpretation that is separate from others. *Mindfulness* describes the balanced awareness of negative thoughts and feelings rather than their over-identification. These individual components are assumed to interact and to generate a self-compassionate frame of mind (Neff & Costigan, 2014). Confirmatory factor analyses found an acceptable fit for the presence of a higher-order self-compassion factor (Neff, 2003b; Williams, Dalgleish, Karl, & Kuyken, 2014). Therefore, in a first step, it seems appropriate to consider self-compassion as a unidimensional construct when investigating its relation to well-being.

Relationship between Self-Compassion and Well-Being

To understand the relationship between self-compassion and well-being, it is important to look at the theoretical background behind these constructs. There are many different theoretical approaches to explain the development of well-being (for an overview, see Diener & Ryan, 2009). Telic or goal theories assume that the development of well-being is a consequence of achieving certain goals (Emmons, 1986; Michalos, 1980). Self-compassion could facilitate the process of goal achievement by alleviating the negative emotional influence of setbacks and failure. In addition, self-compassion could influence goal setting (Barnard & Curry, 2011).

Further cognitive approaches include top-down and bottom-up theories of well-being. Top-down theories explain the development of well-being through a positive memory bias and the influence of personality (Diener & Biswas-Diener, 2008; Feist, Bodner, Jacobs, Miles, & Tan, 1995). A person with a strong sense of well-being focuses more on positive situations and interprets events more positively in consideration of pleasant memories (Diener, 1984; Diener & Ryan, 2009). Individuals produce these fulfilling life circumstances because of their personality. Self-compassion could help in creating such a positive mindset: "Self-compassion is related to well-being because it helps people to feel safe and secure" (Neff, 2011, p. 7). Through this cognitive mindset, individuals would not consider their own mistakes and failures with harsh and negative emotional thoughts; rather, more positive memories would be recollected, which could influence the development of well-being.

Bottom-up theories describe the development of well-being by a balancing process between the positive and negative experiences of a person (Diener, 1984; Diener & Ryan, 2009; Feist et al., 1995). Evaluations of life circumstances determine well-being; positive situations increase and negative situations decrease the level of well-being. Self-compassion may not directly amplify positive experiences, but it may weaken the effects of negative experiences. Therefore, the individual balance of positive and negative evaluations of life circumstances could turn out to be more positive, resulting in increased well-being.

In this context, the relative standards theories should also be emphasised. These approaches (e.g. adaption theory, set-point theory, or hedonic treadmill) focus on the individual's past as a standard for comparison (Brickman & Campbell, 1971; Diener, Lucas, & Scollon, 2006; Diener & Ryan, 2009; Frederick & Loewenstein, 1999; Lucas, 2007). They assume that a person's level of well-being changes temporarily when conditions of living alter. They suggest that after a positive experience, the individual experiences a positive peak in well-being compared to his/her standard. Over time, this peak will converge to its standard. The same applies for negative experiences. Self-compassion could weaken negative peaks, resulting in a reduced drop in well-being in persons with higher self-compassion. It could influence this process by buffering negative events through cognitive emotional reframing, diminishing the depth of negative peaks.

Regarding the strength of the relationship, it could be assumed that forms of cognitive and psychological well-being have stronger relationships to self-compassion than they do to forms of affective well-being. Self-compassion results in a cognitive-emotional mindset, which responds to negative experiences with more self-kindness, mindfulness, and awareness of the common threads of humanity. In this process, self-compassion does not simply lead to the replacement of negative feelings with positive ones; instead, individuals high in self-compassion cognitively accept and integrate negative experiences (Neff &

Dahm, in press). This cognitive inner process could influence the perception of individual goal achievement vis-à-vis telic well-being theories (Emmons, 1986; Michalos, 1980), rather than affective forms of well-being. Self-compassion takes effect in concrete situations of setback or failure. Therefore, the cognitive recollection and integration process in the development of well-being regarding top-down and bottom-up theories (Diener, 1984; Diener & Ryan, 2009; Lucas, 2007) could particularly influence the cognitive and eudaimonic aspects of well-being because they are connected to the evaluation of the experience of these concrete situations.

In this context, the question concerning causality between self-compassion and well-being is central. The scientific research community has investigated this question through short-term and long-term approaches. On the one hand, the effect of induced state self-compassion and its influence on well-being is examined in short-term experimental designs (e.g. Leary, Tate, Adams, Allen, & Hancock, 2007; Odou & Brinker, 2014). On the other hand, several approaches have attempted to enhance self-compassion as a trait through the help of different long-term training and intervention designs. Participants learn self-compassionate thinking and behavior techniques over several days and sessions (e.g. Mindful Self-Compassion; Neff & Germer, 2013).

The Present Meta-Analysis

The goal of the present meta-analysis was to examine the relationship between self-compassion and different forms of well-being in order to answer one main and two follow-up research questions:

1. How does self-compassion relate to different forms of well-being?
2. Are there any moderators that influence the relationship between self-compassion and different forms of well-being?
3. Is there a causal relationship between self-compassion and well-being?

Concerning the first research question, we hypothesised that self-compassion and cognitive well-being, affective well-being (positive affect), and psychological well-being have a positive average effect size, whereas for the relation between self-compassion and negative affect (as an indicator of lack of well-being), we expect a negative average effect size. The magnitudes of the effect sizes were expected to be in a range similar to that in the meta-analysis concerning self-compassion and psychopathology by MacBeth and Gumley (2012), with slightly stronger relationships with cognitive and psychological well-being rather than affective aspects of well-being as described in the previous section.

With respect to the second research question, we were interested in the influence of possible moderators of the relationship between self-compassion

and the different forms of well-being. Because of the generally small number of available studies with potential moderators, this meta-analysis focused mainly on the influence of different sample characteristics, such as participants' age or gender. In addition, the psychological construct self-esteem (Coopersmith, 1967) was included in the analysis. Both constructs, self-esteem and self-compassion, can help people to attenuate and avoid negative self-feelings, and both play an important role in self-regulation processing (Neff, 2011). However, they differ in certain aspects when encountering negative life events. Whereas people with high self-esteem often engage in self-serving biases, such as downward social comparisons and self-deception (Blaine & Crocker, 1993), people with high self-compassion anticipate more personal responsibility while at the same time soothing themselves (Leary et al., 2007; Neff, 2011). These differences may influence the relationship between self-compassion and well-being by affecting people's ability to see themselves and the particular situation accurately (Leary, 2007). Also, existing research on this topic has shown that self-compassion compared to self-esteem accounted for more unique explained variance in measurements of well-being (Neff & Vonk, 2009) and their interaction also statistically significantly predicted well-being (Leary et al., 2007). Therefore, we assumed that the relationship between self-compassion and well-being is stronger for lower magnitudes of self-esteem because the evaluation of particular experiences is less biased by unfavorable self-serving biases of self-esteem.

Finally, the third research question addressed the issue of the assumed causal relationship behind self-compassion and well-being. The goal was to find meta-analytic answers to the magnitude of the influence of state and trait self-compassion manipulation on well-being.

METHOD

Literature Search

Our literature search was designed to include published and unpublished works on the present topic. Studies were limited to those written in English or German. A broad literature search was conducted in the databases PsycINFO, PubPsych, and PubMed and the German-language databases PSYINDEX and MedPilot. Furthermore, the database ProQuest (database of dissertations) was also considered. The literature search was performed up to May 2015, and includes all studies published up to then. Keywords with different wildcard characters and logical operations were used to locate relevant articles: self-compassion *and* well-being, SWB, life satisfaction, positive affect, negative affect, happiness, *or* quality of life. These keywords were selected according to the relevant theories and were oriented toward existing meta-analyses (e.g. Luhmann et al., 2012). In

order to identify further works, the reference sections of the newest studies were checked for additional information. In total, 1,422 potential articles were identified and examined.

Three different approaches were used to respond to a possible publication bias in the form of unconsidered, unpublished works. First, the homepage of Kristin Neff with an overview of different published and unpublished works was examined (www.self-compassion.org). Second, authors of publications with missing information regarding the effect size computation were contacted and asked for further unpublished works (e.g. conference presentations, chapters, etc.). Third, an email was sent to a mailing list with over 3,000 members of the German Psychological Society (DGPs), an association of psychologists working in research and teaching. Using these strategies, 11 additional articles were identified and examined.

In a first step, all 1,433 articles were screened. In this process, 1,269 articles were excluded because no quantitative data were reported, no self-compassion was measured, or no well-being was mentioned. In a second step, the remaining 164 articles were reviewed in detail. Thereby, 99 articles were excluded because they did not meet the remaining inclusion criteria (see the "Inclusion and Exclusion Criteria" section). Overall, 65 articles with 79 samples were included in the quantitative syntheses (74 samples through database searching and five samples through efforts to identify unpublished works).

Inclusion and Exclusion Criteria

Of the 1,433 identified articles, 79 samples contained usable data. Overall, 134 effect sizes were able to be included in the analysis. We applied the following inclusion criteria:

1. *Quantitative data*: Only studies with quantitative data could be included in the analysis. Publications which only reported qualitative data, reviews, or theoretical works were excluded.
2. *Measurement of self-compassion*: Self-compassion was measured with a standardised questionnaire. Missing information about the single subscales of self-compassion was not an exclusion criterion. The main analysis was performed with the global self-compassion score. Concerning the research question regarding the causal relationship, studies including a self-compassion manipulation were also coded.
3. *Measurement of well-being*: Studies had to report at least one type of well-being measurement (cognitive, affective, psychological, or other type of well-being). This measurement had to be conducted using a standardised questionnaire.
4. *Study design*: There were no exclusion criteria for particular study designs. However, for the main analysis, only baseline data were used. Concerning

the research question regarding the causal relationship, repeated measures data of experimental or intervention designs were also coded.

5. *Statistical requirements*: Only studies with a reported correlation coefficient between self-compassion and measurements of well-being or corresponding information (e.g. raw data) could be included in the analysis. In cases where this information was missing, the authors were contacted and the study was included if the necessary information could be obtained.
6. *Moderators*: No content-specific exclusion criteria were applied regarding potential moderators. Concerning the construct self-esteem, the only criterion for inclusion in the moderator analysis was that self-esteem had to be measured with a self-report questionnaire (besides self-compassion and well-being).

Coding of Study Characteristics and Effect Sizes

Several characteristics and variables were coded within our study. First, the *publication characteristics* year of publication and name of the authors were recorded. Further, a series of *sample characteristics* were coded. These included sample size, gender (proportion of women in sample), age of the participants (sample mean), sample type (clinical vs. non-clinical), and geographic region of the sample (e.g. North America, Europe, Asia). The next step was to code the *measurement characteristics*. This included the questionnaires of self-compassion and well-being measurements, as well as the potential moderator self-esteem. Afterwards, the different measurements of well-being were split into five categories: cognitive well-being, positive affect, negative affect, psychological well-being, and other types of well-being. The classification was based on the theoretical descriptions and measurement properties of each questionnaire. Finally, the moderator self-esteem was coded with the name of the questionnaire and the corresponding mean in the study. To adjust for different rating scales, every mean was transformed to a value with a range of 0 to 100 (equivalent: item difficulty). Regarding the coding process of the effect sizes, the *Pearson correlation* (r) coefficient between self-compassion and the different forms of well-being were coded.

The reliability of the coding process was tested through intra- and intercoder analysis. Therefore, the agreement rate (AR) was determined (i.e. the proportion of studies on which two coders—or single coder on two occasions—assign the same categorical code; Orwin & Veyea, 2009; Card, 2012). Fifteen per cent of the studies were coded by two coders. Because of the relatively simple coding variables, only minor differences were identified. For all variables, intercoder agreement rate was high (> 95%). The only difficulty was in coding the different measurements of well-being; therefore, all measurements were coded twice. The

intracoder agreement rate for coding different measurements of well-being was $AR = 96$ per cent. Any inconsistencies were resolved by re-examining the studies.

Data-Analytic Strategy

To analyze the relationship between self-compassion and well-being, the Pearson correlation coefficients of each sample were weighted by the inverse of the corresponding sampling variance and converted into *Fisher's transformation of r* (Hedges & Olkin, 1985). This procedure was applied for each form of well-being separately. To determine an overall well-being score, multiple effect sizes from single studies were handled by computing an average of the transformed effect sizes.[1] The results of the analysis were reported in *r* because of the readily interpretable bounded values ranging from $\pm$ 1.0. The single effect sizes were integrated by a *random-effect model* because of the assumed and statistically confirmed heterogeneity between studies (see the Results section). Also, a random-effect model considers the variability in study effect sizes due to the population variability in effect sizes (Card, 2012). Therefore, conclusions can be more generalised beyond the set of studies analyzed in the meta-analysis (Hedges & Vevea, 1998). The effects of moderator variables on effect sizes were analyzed with *random-effect subgroup analysis* for categorical variables (sample type, geographic region of the sample, and forms of well-being) and *random-effect meta-regressions* for continuous variables (sample mean of female proportion, age, and self-esteem).

To analyze the causal relationship between self-compassion and well-being, the standardised mean difference index *Hedges' g* was used (Hedges, 1981). In this regard, the unstandardised difference of means between posttest means of treatment and control group (state self-compassion manipulation) and pre-posttest means of treatment and control group (trait self-compassion interventions) were divided by the pooled estimate of the population standard deviation. In both analyses, the single effect sizes were integrated by a random-effect model.

Potential publication bias of the overall meta-analysis was evaluated in two ways. (1) Inspection of funnel plots (i.e. a scatter plot of the effect sizes relative to their corresponding sample size, respective of the standard error; Light & Pillemer, 1984; Sterne & Egger, 2001). (2) Trim and fill method (i.e. an approach that corrects for publication bias by an iterative procedure and analyzes how the average effect size would shift if an apparent bias were removed; Duval, 2005).

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[1] Four times out of 134 coded effect sizes, two different measures of the same well-being dimension occurred (e.g. Subjective Happiness Scale and Satisfaction with Life Scale). In these cases the effect sizes were also averaged.

TABLE 1
Meta-Analytic Findings on the Relationship between Self-Compassion and Well-Being and Descriptive Statistics of Coded Sample Characteristics

	k	n	r	Z	*95% CI*	Q	I^2	τ^2	*Female (%)*	*Mean age*	*Sample type*[a]	*Region*[b]
Overall Well-Being	79	16,416	.47	29.30**	.44, .49	310.42**	74.87	0.015	68.1	29.3	75:4	53:13:13
Cognitive Well-Being	48	11,181	.47	28.08**	.45, .50	127.64**	63.18	0.008	64.9	28.2	46:2	29:11:8
Positive Affective Well-Being	33	5,779	.39	15.39**	.34, .43	105.54**	69.68	0.014	68.8	27.7	31:2	23:7:3
Negative Affective Well-Being	32	5,710	−.47	−22.56**	−.50, −.43	72.96**	57.51	0.008	68.8	28.4	30:2	22:7:3
Psychological Well-Being	12	1,586	.62	15.30**	.56, .67	32.45**	66.10	0.016	71.9	32.3	12:0	9:2:1
Other Types of Well-Being	9	1,792	.47	5.98**	.33, .59	88.63**	90.97	0.055	67.4	29.1	9:0	6:1:2

Note: *$p < .05$; **$p < .01$.

Column names: k = number of effect sizes; n = sample size; r = average Pearson correlation (effect size); Z = Wald-Test; CI = confidence interval; Q = Hedges' Q test for homogeneity; I^2 = magnitude of heterogeneity in percentile: values around $I^2 = 50\%$ are indications of a medium amount of heterogeneity, and values around $I^2 = 75\%$ are signs of a large amount of heterogeneity (Huedo-Medina, Sánchez-Meca, Marín-Martínez, & Botella, 2006); τ^2 = population variability in effect sizes.

[a]sample type: first digit (number of non-clinical samples), second digit (number of clinical samples); [b]region: first digit (number of North American samples), second digit (number of European samples), third digit (number of other regions samples).

RESULTS

Descriptive Information

In total, 134 effect sizes were examined to determine the relationship between self-compassion and different forms of well-being. The correlation coefficients were gathered from $k = 79$ samples. The total number of participants was $N = 16{,}416$, with a mean of 208 ($SD = 301$) per sample. Regarding the publication characteristics, the mean and median year of publication was 2012 ($SD = 2.31$ years). This indicates an increased scientific interest in this research topic in the last few years. The results from most samples ($k = 22$) were published in the year 2014.

An overview of the coded sample characteristics associated with the different forms of well-being is provided in Table 1. Two-thirds of all participants were female, with an overall mean age slightly under 30 years. Nearly all samples were non-clinical studies ($k = 75$), and most of the research was conducted in North America ($k = 53$) or in Europe ($k = 13$). Because of the low variance in these two variables, they could not be considered in complete depth in the follow-up moderator analysis. In all studies, self-compassion was measured with the Self-Compassion Scale (SCS) by Neff (2003b) or corresponding translations. The different forms of well-being were commonly measured using the same questionnaires. Cognitive well-being was primarily measured by the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) and the Subjective Happiness Scale (Lyubomirsky & Lepper, 1999). Positive and negative affective well-being was measured in almost every sample with the PANAS (Watson, Clark, & Tellegen, 1988). Psychological well-being was generally operationalised with the Psychological Well-Being Scales (Ryff, 1989; Ryff & Keyes, 1995). Because of the variety and diversity regarding the variable "Other types of well-being", quite different measurements were used.

Effect Size Analysis

To examine the relationship between self-compassion and well-being (first research question), the weighted correlation (*Fisher's transformation of r*) for each form of well-being with self-compassion was calculated with a random-effect analysis. Statistical significance was tested with the Wald Test and the corresponding 95 per cent confidence interval (Card, 2012). Results of this meta-analysis concerning the first research question are provided in Table 1. An overview of the individual studies is provided in the Supplemental Materials. Self-compassion and well-being were relatively closely related with an $r = .47$ ($k = 79$, $N = 16{,}416$). This overall correlation is statistically significant

($Z = 29.30$, $p < .01$), with a 95 per cent confidence interval of $r = .44$ to $r = .49$.

The influence of the different forms of well-being as a potential moderator was tested with a random-effect subgroup analysis in order to answer the first research question and because of a statistically significant heterogeneity in effect sizes across studies ($Q(78) = 310.42$, $p < .01$, $I^2 = 74.87$). Beyond that, each form of well-being had a statistically significant relationship with self-compassion. Here, psychological well-being had the strongest averaged correlation coefficient with $r = .62$, and positive affective well-being had the weakest coefficient with $r = .39$. A statistically significant difference in the relationship between self-compassion and the different forms of well-being was identified ($Q(4) = 38.40$, $p < .01$). Further analysis found, through pairwise comparison analysis, that nearly all comparisons within the different forms of well-being were significantly different regarding their relationship with self-compassion. The correlation with psychological well-being was stronger than the correlations with cognitive well-being ($Q(1) = 20.92$, $p < .01$), positive affective well-being ($Q(1) = 34.55$, $p < .01$), and negative affective well-being ($Q(1) = 19.59$, $p < .01$). Also, the correlation with cognitive well-being was stronger than the correlation with positive affective well-being ($Q(1) = 12.36$, $p < .01$). The comparison between cognitive well-being and negative affective well-being represented an exception because no significant difference could be identified ($Q(1) = 0.06$, $p = .82$). There was also no difference in the comparisons with the variable other types of well-being (all $p > .20$). This was expected because of the fewer number of samples and large heterogeneity ($I^2 = 90.97$).

Publication Bias Analysis

First, a funnel plot was conducted (see Supplemental Materials). Visual analysis suggested an equally dispersed distribution of samples on either side of the overall effect. This indicated that all the relevant studies were covered by the meta-analysis. Some studies were outside of the 95 per cent confidence interval of the summary estimate and indicated the presence of heterogeneity between studies. Also, the trim and fill procedure under the random-effects model found a nearly identical combined effect size between self-compassion and well-being ($r = .46$, 95% CI = .44, .49) in comparison to the original point estimate ($r = .47$, 95% CI = .44, .49). There was no shift in the average recomputed effect size if potential missing studies were imputed, and therefore no indication of a publication bias.

Moderator Analysis

The results of the homogeneity test ($Q(78) = 310.42$, $p < .01$, $I^2 = 74.87$) indicated evidence for potential moderators that influence the relationship between

TABLE 2
Moderator Analysis on the Relationship between Self-Compassion and Well-Being (Random-Effect Meta-Regression)

	k	n	*Slope*	Z	p
Overall Well-Being					
Female proportion	76	14,126	.003	2.57	.01
Age of the participants	66	13,081	.002	1.50	.13
Self-esteem[a]	10	3,941	−.003	−1.46	.14
Cognitive Well-Being					
Female proportion	46	8,899	.002	1.85	.06
Age of the participants	40	8,339	.001	0.82	.42
Self-esteem[a]	8	3,538	−.006	−2.37	.02
Positive Affective Well-Being					
Female proportion	32	5,771	.003	1.13	.26
Age of the participants	28	5,316	.003	1.29	.20
Negative Affective Well-Being					
Female proportion	32	5,710	<−.001	0.15	.88
Age of the participants	28	5,255	−.002	−1.06	.29
Psychological Well-Being					
Female proportion	12	1,586	.004	1.73	.08
Age of the participants	12	1,586	.004	1.68	.09

Note: Column names: k = number of effect sizes; n = sample size; slope = random-effect meta-regression slope; Z = Wald-Test; p = probability of obtaining the result, assuming that the null hypothesis is true.

[a] The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) was the most frequently used questionnaire (overall WB: M = 63.87, Range = 41–80; cognitive WB: M = 65.05, Range = 41–80). Variables with less than five studies were excluded.

self-compassion and well-being (second research question). Besides the significant influence of the different forms of well-being ($Q(4) = 38.40$, $p < .01$), additional potential moderators were tested with random-effect subgroup analysis and meta-regressions to answer the second research question. The potential moderators were the study characteristics female proportion, mean age, and geographic region (North America and Europe), as well as the psychological construct self-esteem. Other potential moderators which may be theoretically assumed could not be examined because of the lack of needed variance between samples or an insufficient number of available studies. An overview of the influence of the continuous moderators on the different forms of well-being is provided in Table 2.

Overall Well-Being. Regarding the study characteristics, the analysis showed a significant effect of female proportion (slope = .003, $Z = 2.57$, $p = .01$, $k = 76$, $n = 14{,}126$). In the samples, more females strengthened the relationship between self-compassion and well-being. However, no statistically significant effect of age of the participants (slope = .002, $Z = 1.50$, $p = .13$,

$k = 66$, $n = 13{,}081$) and self-esteem (slope = $-.003$, $Z = -1.46$, $p = .14$, $k = 10$, $n = 3{,}941$) could be identified. The effects also did not differ in the comparison between North American and European samples ($Q(1) = 0.75$, $p = .39$, $k = 66$, $n = 13{,}378$).

Cognitive Well-Being. No statistically significant effect could be found regarding the mean age of the participants (slope = .001, $Z = 0.82$, $p = .42$, $k = 40$, $n = 8{,}339$). However, the female proportion had a marginally significant impact on the relationship between self-compassion and cognitive well-being (slope = .002, $Z = 1.85$, $p = .06$, $k = 46$, $n = 8{,}899$). The more females there were in the samples, the stronger was the relationship. The correlation was also marginally higher in European samples ($r = .52$, $k = 11$, $n = 5{,}655$) than in North American samples ($r = .45$, $k = 29$, $n = 3{,}812$), with $Q(1) = 3.63$ and $p = .06$. Finally, self-esteem moderates the relationship (slope = $-.006$, $Z = -2.37$, $p = .02$, $k = 8$, $n = 3{,}538$) such that the higher were the values, the weaker was the correlation coefficient between self-compassion and cognitive well-being.

Positive Affective Well-Being. None of the analyzed variables significantly moderated the relationship between self-compassion and positive affective well-being: geographical region ($Q(1) = 1.57$, $p = .21$, $k = 30$, $n = 5{,}218$), female proportion (slope = .003, Z = 1.13, $p = .26$, $k = 32$, $n = 5{,}771$), and age of the participants (slope = .003, $Z = 1.29$, $p = .20$, $k = 28$, $n = 5{,}316$). Other variables could not be included.

Negative Affective Well-Being. In almost the same manner as positive affective well-being, none of the analyzed variables significantly moderated the relationship between self-compassion and negative affective well-being: geographical region ($Q(1) = 0.13$, $p = .72$, $k = 29$, $n = 5{,}149$), female proportion (slope < $-.001$, Z = 0.15, $p = .88$, $k = 32$, $n = 5{,}710$), and age of the participants (slope = $-.002$, $Z = -1.06$, $p = .29$, $k = 28$, $n = 5{,}255$). Other variables could not be included.

Psychological Well-Being. Due to the lack of samples, only study characteristics could be analyzed here as well. Geographical region ($Q(1) = 2.08$, $p = .15$, $k = 11$, $n = 1{,}236$) had no significant effect on the relationship between self-compassion and psychological well-being. However, female proportion (slope = .004, $Z = 1.73$, $p = .08$, $k = 12$, $n = 1{,}586$) and age of the participants marginally moderated the relationship (slope = .004, $Z = 1.68$, $p = .09$, $k = 12$, $n = 1{,}586$). More females strengthened the relationship between self-compassion and well-being. And the older the participants were in the samples, the slightly stronger was the relationship.

Causal Relationship Analysis

Two analyses were conducted to analyze the potential causal relationship between self-compassion and well-being (third research question). Specific characteristics of the single studies are illustrated in the Supplemental Material.

State Self-Compassion Manipulation. First, the effect of experimental manipulation on state self-compassion and its impact on measurements of well-being were examined. Five studies were able to be included in the computation. All studies had an experimental and an active control group, with an overall sample size of $n = 394$ (197 per condition). Four times the manipulation consisted of a self-compassionate writing exercise in the treatment group (Leary et al., 2007) combined with an expressive writing exercise in the active control group. In one study, the manipulation was a verbal self-compassionate persuasion by the examiner (Adams & Leary, 2007). All experiments measured negative affective well-being as the only shared well-being outcome variable. The analysis found a statistically significant Hedges' g of -0.90 ($Z = -2.17$, $p = .03$) with a broad 95 per cent confidence interval of -1.70 to -0.09 for negative affective well-being.

Trait Self-Compassion Interventions. Second, the effect of longitudinal manipulation designs on trait self-compassion and their influence on well-being were examined. Overall, nine studies with a total sample size of $n = 650$ ($n_{\text{Treatment}} = 320$, $n_{\text{Control}} = 330$) were included. The intervention approaches were all compassion-based interventions, such as Mindful Self-Compassion Training (MSC), Compassion Cultivation Training (CTT), or mindfulness training with an explicit focus on self-compassion. The analysis found a statistically significant Hedges' g of 0.36 ($Z = 5.02$, $p < .01$) with a 95 per cent confidence interval of 0.22 to 0.50.

In summary, both manipulation of state self-compassion and interventions for trait self-compassion cause a statistically significant increase in well-being.

DISCUSSION

The present meta-analysis confirmed the assumption of a relationship between self-compassion and well-being ($r = .47$, $k = 79$, $N = 16{,}416$). Three research questions guided this analysis. The first question examined whether there are differences in the relationships between self-compassion and different forms of well-being. Results showed that these relationships are significantly different from each other. The analysis found the strongest correlation between self-compassion and psychological well-being ($r = .62$, $k = 12$, $n = 1{,}586$), followed by negative affect ($r = -.47$, $k = 32$, $n = 5{,}710$) and cognitive well-being ($r = .47$, $k = 48$, $n = 11{,}181$). Finally, positive affective well-being

correlated with self-compassion, with $r = .39$ ($k = 32$, $n = 5{,}779$). These correlation coefficients can be interpreted as medium to large effect sizes (Cohen, 1988).

The second research question examined the influence of different moderators on the relationship between self-compassion and well-being. Regarding different demographic variables, the analysis showed a significant effect of female proportion (the higher the values, the stronger the relationship) on the relationship between self-compassion and well-being. Furthermore, there was a significant effect of the psychological construct self-esteem (the higher the values, the weaker the relationship) on cognitive well-being. Female proportion also marginally moderated the relationship with cognitive well-being. The relationship also differed in relation to the geographical region of the samples. European samples reached a higher correlation coefficient than did North American samples in the relationship between self-compassion and cognitive well-being. Finally, the age of the participants marginally influenced the relationship between self-compassion and psychological well-being (the older the participants, the stronger the relationship).

The third research question examined the causal relationship between self-compassion and well-being. Both state self-compassion manipulations (negative affective well-being: Hedges' $g = -0.90$ [-1.70, -0.09]) and trait self-compassion interventions (overall well-being: Hedges' $g = 0.36$ [0.22, 0.50]) showed a statistically significant effect on the causal influence of self-compassion on well-being.

Explanations and Implications of Findings

First Research Question. The magnitude of the averaged correlation coefficients between self-compassion and well-being are very similar to the meta-analytic findings of MacBeth and Gumley (2012). They found a combined correlation coefficient of $r = -.54$ for the association between self-compassion and psychopathology. The significant differences between the forms of well-being in the present analysis emphasise the diversity within this broad construct. It is important to distinguish these different forms and emphasise the construct distinctness within well-being. Further research should address these findings and investigate these individual aspects of well-being to specify other associations and effects in the context of self-compassion.

The different magnitudes in the correlation coefficients between self-compassion and the single forms of well-being follow a pattern similar to the meta-analytic findings of MacBeth and Gumley (2012). The relationships to psychological and cognitive forms of well-being are slightly stronger than the relationships to affective forms of well-being—more precisely, positive affective well-being. It is quite plausible that psychological well-being has the highest correlation with self-compassion because it is a much broader construct and

addresses more specific aspects of managing one's life. In terms of top-down theories, well-being occurs through a positive memory bias and the influence of personality (Diener & Biswas-Diener, 2008; Feist et al., 1995). Specific rather than general memories can be integrated during the evaluation process of situations experienced regarding facets of psychological well-being, such as in cognitive or affective well-being. These situations are more likely to be universal and therefore less connected to specific memories. This could explain the difference in the associations between self-compassion and forms of well-being. The significant, overall effect could also be explained with bottom-up and relative standards well-being theories (Diener, 1984; Diener & Ryan, 2009). Self-compassion may weaken the effects of negative experiences by cognitive-emotional reframing, and influence the balance between positive and negative experiences in favor of positive situations. Nevertheless, more research including outcome variables and process data is needed to clarify the mechanism and the causes of the differences in the relation between self-compassion and different forms of well-being.

Second Research Question. The present meta-analysis found some differences between the individual forms of well-being regarding the influence of different moderators. A meta-analysis regarding gender differences (Yarnell et al., 2015) showed that males report slightly higher levels of self-compassion than do females (d = .18). However, an explanation may reside within the findings that women generally have higher magnitudes in related constructs, such as empathy (Konrath, O'Brien, & Hsing, 2011). Thus, the effectivity of self-compassion could be enhanced. Also, the generally faster adaption rate of women after a negative experience, such as bereavement, could be an explanation (Luhmann et al., 2012). Self-compassion may accelerate this process and thus could explain, to some extent, the difference between men and women in handling such experiences. Nevertheless, more research is needed to clarify this finding.

Another interesting result is the marginal effect of the participants' age on the relationship between self-compassion and psychological well-being. An explanation could be related to the characteristics of the construct psychological well-being. Subscale measurements, such as environmental mastery or positive relations with others, increase over one's lifespan (Springer, Pudrovska, & Hauser, 2011). Age could buffer the relationship because of more experienced situations that serve as a comparison level. The older a person becomes, the more negative and positive situations are experienced. It seems that this primarily influences the relationship with psychological well-being rather than other forms of well-being.

Yet another interesting finding was the moderating effect of self-esteem on the relationship between self-compassion and cognitive well-being. Self-esteem weakens the correlation coefficient. Self-esteem relies more on global positive self-evaluations and often is based on comparisons with other people in order to

increase one's perceived self-worth (Coopersmith, 1967; Harter, 1999; Swann, Chang-Schneider, & McClarty, 2007). By comparison, self-compassion works in quite the opposite way. It is not strictly based on self-evaluations and comparison with others, but is rather based on interconnection and the awareness of being part of mankind, as well as on the awareness that failure and setbacks are part of normal life (Leary et al., 2007; Neff & Vonk, 2009; Neff, 2011, 2012). It seems that these comparisons may weaken the relationship between self-compassion and well-being. Self-esteem influences the evaluation of situations and therefore interferes with self-compassion in such situations. Unfortunately, there were not enough studies to examine the effect of self-esteem with the other forms of well-being compared to cognitive well-being. Future studies should consider these findings.

Third Research Question. The present meta-analysis also indicated that a causal relationship between self-compassion and well-being exists. There is a broad diversity of training interventions and other approaches to successfully increase self-compassion in the long term. Short-term manipulations for experimental research questions are much more limited and less diverse. However, it is necessary to apply different approaches and designs to manipulate self-compassion. Furthermore, a deeper understanding of the relationship between self-compassion and well-being would be provided if experimental designs also manipulated only single subcomponents of self-compassion to examine their specific causal effect on well-being and on the other subscales of self-compassion.

Limitations and Conclusion

There are some limitations that should be considered and included in further research. First, to some extent, there were too few samples to analyze every facet and form of the two constructs completely. It was not possible to analyze the correlations of the single subscales of psychological well-being. Regarding the subscales of self-compassion, the computations of the correlations were limited. Because of a lack of experimental research on the subscale level of self-compassion, no assumptions regarding single relationships can reasonably be made. Research has not yet given an answer regarding whether the components are positively associated or merely engender one another (Barnard & Curry, 2011), and how this interacts with well-being. Therefore, assumptions regarding their specific relationships to well-being could not been tested and were excluded from this article. However, the results can be found in the Supplemental Material. Further research with single subscales is recommended in order to find new perceptions and understandings of the relationship between self-compassion and well-being. The composed variable other types of well-being was very heterogenic and therefore not adequate for a detailed analysis. Although this variable

did not contribute much to the enlightenment of the research questions investigated, it does show the diversity and the different facets of the construct well-being.

A methodical point of criticism is that further unpublished data in the United States or other countries might exist. However, the analysis of possible publication bias does not indicate that studies that were not considered would alter the overall findings to a non-significant level.

Besides, the present meta-analysis could not clarify the development of the relationship between self-compassion and well-being in view of specific critical life events. Further research should investigate the influence of stressful life events (Park, 2010) on this relationship. Finally, the variation and stability over time could not be analyzed in the present analysis. Perhaps the effects weaken or strengthen over time. A starting point for further research could be the moderating effect of age on psychological well-being.

Further research is also needed to specify and find other moderators that could explain different relationships. One direction could be to analyze more expectation-influencing variables, such as self-efficacy (Bandura, 1977) or control beliefs (Rotter, 1966). They could explain the present effects between self-compassion and well-being, and influence the evaluation process of experienced situations. Another direction could be to analyze more social psychological variables, such as empathy or altruism, or more emotion-regulating variables, such as emotional intelligence. These variables could influence the effects between self-compassion and well-being in a more general way, and could interact in interesting ways through their positive attributes and their related characteristics to self-compassion.

This meta-analysis offers insights into the (causal) relation between self-compassion and well-being. At the same time, our analysis helps to investigate new research questions. The diversity in the relationship between self-compassion and the different forms of well-being emphasises the specific need to distinguish between the single operationalisations of well-being. In future studies, the scientific research community should examine the influence of possible moderators in particular as well as the behavior of the relationship on the subscale level, and the stability in long-term investigations. This will help to gain a more complete understanding of the nature of the relationship between self-compassion and well-being.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Figure S1. Funnel plot of the relationship between self-compassion and overall well-being

Table S1. Meta-Analytic Findings on the Relationship Between Subscales of Self-Compassion and Well-Being

Table S2. Descriptive Parameters of the Included Studies in the Meta-Analysis (Relationship Between Self-Compassion and Well-Being)

Table S3. Descriptive Parameters of the Included Studies in the Meta-Analysis (Causal Relationship Between Self-Compassion and Well-Being)