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Development and Psychometric Evaluation of Parallel Short Forms of the Compassion Questionnaires for Self and Others

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Table 1 to 5 are available in the Supplementary Files section.

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Abstract

Background: The revised Compassion Questionnaires for Self and Others provide parallel multidimensional assessments but contain 39 and 33 items, respectively. This study developed matched shorter forms using two Canadian adult samples. **Methods:** The parent sample was randomly divided into development and holdout subsets. Item selection considered domain coverage, redundancy, psychometric performance, and parent-form correspondence. Fixed configurations were evaluated in the holdout subsets and externally confirmed in an independent sample. Analyses examined factor structure, internal consistency, concurrent associations, gender invariance, and associations with Suffering and Overcoming. **Results:** The CQS-20 and CQO-20 retained three matched domains: Thinking/Feeling Compassionately, Connecting With Others Compassionately, and Acting Compassionately. Holdout analyses indicated acceptable fit for both forms. In the independent sample, the CQO-20 maintained acceptable fit, whereas the CQS-20 showed weaker CFI and TLI values but preserved its loading pattern. Internal consistency was strong, and concurrent associations followed directional patterns. The CQS-20 supported metric but not scalar invariance; the CQO-20 supported scalar but not strict invariance. Conditional inference trees identified Suffering as more prominent for self-compassion and Overcoming as more prominent for compassion toward others. **Conclusions:** The short forms reduce the battery from 72 to 40 items while retaining parallel multidimensional assessment. Stand-alone evaluation remains necessary.

Keywords: compassion, self-compassion, compassion for others, suffering, short form, scale development, psychometric evaluation.

Development and Psychometric Evaluation of Parallel Short Forms of the Compassion Questionnaires for Self and Others

The concept of compassion has been central in various philosophical and religious traditions, notably Buddhism, for centuries (Shonin et al., 2014). In Western psychological research, the past few decades have seen increasing attention to compassion and its implications for health and social well-being. However, despite this growing interest, researchers have not reached a consensus on its definition or operationalization. For example, Gilbert (2009) described compassion as the awareness of another's suffering coupled with a desire to help, while Neff (2003b) focused on self-compassion, emphasizing self-kindness, mindfulness, and the recognition of shared suffering.

Different models of compassion have emerged, such as the five-factor model outlined by Strauss et al. (2016), which includes recognizing suffering, feeling empathy, tolerating discomfort, and being motivated to act. Additionally, compassion is often conceptualized in relation to self and others. Buddhist traditions, for instance, emphasize the interconnectedness of self-compassion and compassion for others (Crosby & Skilton, 1998; Maitreya et al., 2018). Recent research underscores the importance of integrating both perspectives into a comprehensive understanding of compassion (e.g., Khoury, 2019; Khoury & Dionne, 2020; Sahdra et al., 2023).

To measure compassion, several scales have been developed. Neff's Self-Compassion Scale (SCS; Neff, 2003a) evaluates self-kindness, common humanity, and mindfulness, along with their opposites (self-judgment, isolation, and over-identification). Compassion for others has been measured using the Compassion Scale (CS; Pommier et al., 2020), while Gilbert's Compassionate Engagement and Action Scales (CEAS; Gilbert et al., 2017) assess both

compassion for self and others and include direct actions. Other scales, such as the Sussex-Oxford Compassion Scales (SOCSO; Gu et al., 2020), also assess compassion for self and others. Mindfulness and compassion are conceptually related but not identical. Mindfulness generally concerns receptive awareness of present-moment experience, whereas compassion additionally involves an orientation toward suffering and a caring or helpful response. Mindful awareness may support compassion by helping a person notice suffering without becoming overwhelmed; however, including awareness, nonreactivity, or attentional balance as compassion items can make scores reflect two constructs at once. Such content complicates interpretation because a high score may indicate mindful attention, compassionate motivation, or both (Khoury, 2019; Khoury & Dionne, 2020). These conceptual and measurement concerns guided the development of two compassion scales: the Compassion Questionnaire for Self (CQS; Khoury & Vergara, 2024c; Khoury et al., 2023) and the Compassion Questionnaire for Others (CQO; Khoury & Vergara, 2024b; Khoury et al., 2023). Both were designed to assess the specific skills and abilities underlying compassion without incorporating mindfulness-related elements.

Suffering is central to compassion because compassion involves recognizing and responding to suffering, whether it is experienced by oneself or another person. However, the relationship between suffering and compassion may depend not only on the presence or intensity of suffering but also on how individuals respond to and overcome it. The Suffering Experiences Questionnaire distinguishes between Suffering, reflecting the experiential burden of suffering, and Overcoming, reflecting the capacity to engage with, move through, and respond adaptively to suffering (SEQ; Khoury & Vergara, 2026d). These dimensions may relate differently to the direction of compassion: Suffering may be more closely associated with the capacity to respond compassionately to oneself, whereas Overcoming may facilitate the integration of personal

adversity in ways that support understanding, connection, and compassionate action toward others. Examining both dimensions alongside the CQS-20 and CQO-20 may therefore clarify how experiences of suffering relate to compassion directed inward and outward.

To strengthen the measurement of self- and other-directed compassion, the revised questionnaires expanded the item pools, balanced positively and negatively worded content where feasible (Muris & Petrocchi, 2017), strengthened domain coverage, and supported interpretation of total scores. Their validation used a large Canadian sample that included participants of several gender identities, but the sample remained predominantly women (CQSO-R; Khoury & Vergara, 2026b). Accordingly, the CQSO-R study broadened the available evidence beyond women without establishing equal representativeness across gender groups (Khoury & Vergara, 2026b).

The CQS-R contains 39 items and the CQO-R 33 items. This expanded coverage strengthened measurement but produced a 72-item combined battery. A shorter parallel pair could be useful in personality-assessment research when compassion is examined alongside broader attributes, symptoms, interpersonal functioning, or well-being. Related longitudinal person-centered evidence also indicates that different configurations of compassion toward self and others correspond to meaningfully different patterns of psychological functioning, supporting coordinated assessment of both directions (Khoury & Vergara, 2026c). It may also be easier to include the pair in counselling and clinical assessment batteries. These are anticipated advantages of reduced length, however, because the proposed short forms were not administered independently in the present study.

Existing brief measures preserve different conceptualizations of compassion. The 12-item Self-Compassion Scale–Short Form retains the structure of the longer Self-Compassion Scale

(SCS-SF; Raes et al., 2011), whereas the 20-item Sussex–Oxford scales assess five compassion competencies in parallel forms for self and others (SOCS-S and SOCS-O; Gu et al., 2020). The present study addressed a distinct measurement question: whether the revised CQS-R and CQO-R could be shortened while retaining their three corresponding domains, balanced wording, parallel structure, and support for domain and total scores (Khoury & Vergara, 2026b; Khoury et al., 2023).

Using the Canadian dataset previously analyzed in the CQSO-R study (Khoury & Vergara, 2026b), the present secondary analysis derived and internally evaluated shorter forms of the revised CQS and CQO. The primary objectives were to reduce questionnaire length while preserving domain coverage, balanced wording, parallel structure, reliability, and correspondence with parent-form scores. Secondary analyses examined selected external associations and measurement invariance between women and men. The item-selection process yielded matched 20-item forms, designated the CQS-20 and CQO-20. Because the retained items were embedded within the parent forms and the holdout subsets came from the same data collection, the study involved derivation and internal cross-validation, followed by external confirmation in an independent dataset originally used to validate the SEQ and SEQ-10 (Khoury & Vergara, 2026d). In that independent sample, additional analyses examined whether Suffering and Overcoming were differently associated with compassion directed toward the self and others.

Method

Study Design

The present study used a sequential psychometric design comprising scale development, internal cross-validation, and external confirmation. The CQS-20 and CQO-20 were

retrospectively derived from responses to the CQS-R and CQO-R, respectively. The parent dataset was divided into a development subset, used to examine the measures' structure and select the retained items, and an internal holdout subset, used to cross-validate the resulting structure within the same data collection.

The resulting 20-item measures were then evaluated in a separate confirmatory sample drawn from an existing cross-sectional Canadian online study conducted in the context of validating the Suffering Experiences Questionnaire and its 10-item short form, the SEQ-10. Because the development and holdout subsets originated from the same parent data collection, the first two stages represent scale derivation and internal cross-validation rather than fully independent validation. The use of a separate dataset for the final stage provided external confirmation by examining whether the initially supported structure and psychometric properties were sustained under different sampling conditions.

This sequential approach provides a more comprehensive evaluation than deriving the measures in one dataset and evaluating them only once in a second dataset. Specifically, it allows the measures' structure to be explored in a development subset, cross-validated in a separate holdout subset, and subsequently examined in an independent sample. This separation of exploratory and confirmatory analyses reduces the risk that the identified structure reflects sample-specific characteristics or capitalization on chance, while evaluation in an independent sample provides additional evidence regarding the replicability and generalizability of the measures' psychometric properties (Boateng et al., 2018; Lorenzo-Seva, 2022; Worthington & Whittaker, 2006).

Shared Datasets and Related Publications

The development and internal holdout subsets were drawn from a broader data collection that supported four related publications. The CQSO-R article (Khoury & Vergara, 2026b) developed and evaluated the full revised Compassion Questionnaires for Self and Others, from which the CQS-20 and CQO-20 were derived. Two additional publications (Khoury & Vergara, 2024a, 2025) examined measures of compassion for animals. A separate longitudinal study (Khoury & Vergara, 2026c) examined profiles of compassion toward the self, other humans, and animals but did not derive or psychometrically evaluate the CQS-20 or CQO-20. Related chapters (Khoury, 2025a, 2025b, 2025c; Khoury & Vergara, 2026a) describe measures from this broader research program.

The independent confirmatory sample was drawn from a separate data collection used to develop and validate the Suffering Experiences Questionnaire and its short form, the SEQ-10 (Khoury & Vergara, 2026d). Although the CQS-R and CQO-R were included in that study's assessment battery, the CQS-20 and CQO-20 were not derived or psychometrically evaluated in that publication.

The present manuscript does not treat either sample, the parent instruments, or the associated measures as new. Its incremental contribution is restricted to deriving and internally cross-validating the CQS-20 and CQO-20 in the first dataset and externally confirming their psychometric properties in the independent SEQ validation dataset. Findings from related publications based on the first dataset are not presented as independent replications.

CQS-20 and CQO-20 Item-Reduction Procedure

The short forms were derived retrospectively from items administered as part of the full CQS-R and CQO-R; participants did not complete stand-alone versions of the CQS-20 or CQO-20. Item selection was conducted within each domain and guided by four criteria:

- Candidate configurations had to meaningfully reduce the combined battery while retaining adequate representation of each domain.
- Selection considered conceptual breadth, item redundancy, and the available balance of positively and negatively worded items within each parent domain.
- Candidate forms were evaluated for internal structure and reliability in the development subsets and then assessed without further item modification in the internal holdout subsets.
- Scores derived from retained items were required to closely approximate the corresponding parent-domain scores within the shared administration. Because short- and parent-form scores shared items, this correspondence was not interpreted as evidence of equivalence or interchangeability.

No final form length was imposed in advance. Minimum representation requirements were four items each for Acting Compassionately and Connecting With Others Compassionately and six to eight items for Thinking/Feeling Compassionately, reflecting the domain's combined cognitive and affective content. The final item allocation and form length were determined jointly by content coverage and psychometric performance. The complete CQS-20 and CQO-20 items, response options, reverse-scoring designations, and scoring instructions are provided in Appendix A.

Participants

Participants were drawn from two previously reported Canadian online data collections. The first dataset served as the parent sample from which the development and internal holdout subsets were drawn. Participants were recruited through paid social media advertising, yielding a sample of 1,266 Canadian adults. The mean age was 45.2 years (SD = 16.5); 78.3% identified as

women, 15.6% as men, and 6.1% reported another gender identity or preferred not to answer. Analytic sample sizes varied because completion of measures administered after the initial questionnaires was optional. Additional characteristics of the parent sample are presented in Table 1, and comparisons between participants included in and excluded from the primary complete-case analyses are reported in Supplementary Table S1.

The second dataset served as the independent confirmatory sample. Participants were recruited through paid advertisements on social media platforms, including Facebook, Instagram, and LinkedIn, yielding a sample of 458 Canadian adults who passed Qualtrics' data-quality screening and all attention checks. The mean age was 37.8 years (SD = 15.8, range = 18–86); 63.1% identified as women, 25.1% as men, and 11.8% reported another gender identity or preferred not to answer. Most participants identified as White (60.9%) or as having a mixed racial or ethnic background (7.2%), whereas 31.9% identified with another racial or ethnic group. Regarding sexual orientation, 62.9% identified as heterosexual and 37.1% identified as LGBTQ+ or reported another sexual orientation. Additional characteristics of the confirmatory sample are presented in Table 1.

Procedure

Both data collections received institutional ethics approval, and all participants provided informed consent before completing the surveys online. Data for the parent sample, from which the development and internal holdout subsets were drawn, were collected through LimeSurvey. The CQSO-R was administered first, followed by other compassion and mindfulness measures and then the remaining instruments. Because participants could discontinue the survey before completing all measures, missingness increased progressively for measures presented later.

Data for the independent confirmatory sample were collected through Qualtrics. Only participants who passed Qualtrics' data-quality screening and all embedded attention checks were retained. In both samples, the CQS-20 and CQO-20 were scored retrospectively from responses to the corresponding CQSO-R parent-item pools and were not administered as stand-alone questionnaires. Consequently, the present study did not directly assess the short forms' completion times, acceptability, perceived burden, administration-specific missingness, or participants' responses to completing them as independent measures.

Measures

External measures available in the parent sample were organized according to their role in evaluating the short forms. Convergent validity was examined using established measures of compassion. Self-compassion was assessed with the Self-Compassion Scale (SCS, 26 items; Neff, 2003a) and the Sussex–Oxford Compassion for the Self Scale (SOCS-S, 20 items; Gu et al., 2020), whereas compassion for others was assessed with the Compassion Scale (CS, 16 items; Pommier et al., 2020) and the Sussex–Oxford Compassion for Others Scale (SOCS-O, 20 items; Gu et al., 2020). The Compassionate Engagement and Action Scales (CEAS, three 13-item scales; Gilbert et al., 2017) provided parallel indicators of self- and other-directed compassion. Related interpersonal and affiliative constructs were assessed through self-reassurance (FSCRS, 22 items; Baião et al., 2015), active-empathic listening (AELS, 11 items; Bodie, 2011), empathy (TEQ, 16 items; Spreng et al., 2009), social connectedness (SCoS-R, 20 items; Lee & Robbins, 1995), and social safeness (SSS, 11 items; Gilbert et al., 2009).

Mindfulness was included as a theoretically related but distinct construct. Intrapersonal mindfulness was assessed using the Five Facet Mindfulness Questionnaire (FFMQ, 39 items; Baer et al., 2006) and Mindful Attention Awareness Scale (MAAS, 15 items; Brown & Ryan,

2003), whereas interpersonal mindfulness was assessed using the Interpersonal Mindfulness Scale (IMS, 27 items; Pratscher et al., 2018). Meditation experience was retained as contextual information because contemplative practice may cultivate compassion, but it was not interpreted as evidence of intervention responsiveness (Neff & Germer, 2013).

Concurrent psychological criteria included perceived stress (PSS, 10 items; Cohen et al., 1983), depression, anxiety, and stress (DASS, 42 items; Lovibond & Lovibond, 1995), positive and negative affect (PANAS-GEN, 20 items; Watson et al., 1988), emotion-regulation skills (ERSQ, 27 items; Berking & Whitley, 2014), life satisfaction (SWLS, 5 items; Diener et al., 1985), and psychological well-being (PWB, 42 items; Ryff, 1989). These measures were used to examine differentiated concurrent associations rather than prospective prediction.

In the independent confirmatory sample, associations between compassion and suffering were examined using the 20-item Suffering Experiences Questionnaire (SEQ; Khoury & Vergara, 2026d). Table 2 reports the number of items, internal consistency estimates, and missingness for the measures used in both samples; additional scoring details are available in the original instrument publications.

Data Analyses

Analyses followed a three-stage design comprising short-form development, internal cross-validation, and external confirmation. The parent sample was randomly divided into a development subset, used for item selection and exploratory analyses, and an internal holdout subset, used to evaluate the finalized configurations. The resulting short forms were then evaluated in the independent confirmatory sample. Because the development and holdout subsets originated from the same recruitment period and survey administration, the holdout analyses constituted internal cross-validation rather than independent external validation. Evaluation in

the independent confirmatory sample provided an additional test of whether the resulting factor structures and psychometric properties were sustained under different sampling and administration conditions. This three-stage approach was feasible given the size of the parent sample and provided evidence regarding the replicability of the findings within and across data collections (Kyriazos, 2018a, 2018b). The random allocation procedure is reported in the publicly available analysis code to support reproducibility.

Item selection was conducted separately within each parent-form domain to preserve the three-domain structures of the CQS-R and CQO-R. Candidate configurations were evaluated based on content coverage, balance in item wording, item redundancy, psychometric performance, and correspondence with parent-form scores, consistent with recommendations for scale development and refinement (Clark & Watson, 2016; DeVellis & Thorpe, 2021). Correspondence with parent-form scores was evaluated using regression slopes and coefficients of determination, with target values of 0.90–1.10 and greater than .90, respectively. Because the retained items contributed directly to the parent-form scores, these indices were interpreted as descriptive evidence of correspondence within a shared administration rather than as evidence that the short and parent forms were equivalent or interchangeable.

Exploratory factor analyses were conducted in the development subset. Factor retention was informed by parallel analysis and the optimal coordinates method (Hayton et al., 2004; Raîche et al., 2013). Principal axis factoring was used because multivariate normality was not supported, and oblique rotation was applied to allow the domains to correlate (Costello & Osborne, 2005; de Winter & Dodou, 2012). Bootstrap confidence intervals were examined to evaluate the stability of the factor loadings. After item selection, the CQS-20 and CQO-20 configurations were fixed and evaluated without further modification in the internal holdout

subset using confirmatory factor analysis (CFA), reliability estimation, and correspondence with parent-form scores. Separating item selection from the evaluation of the finalized configurations reduced the risk of assessing the short forms exclusively in the data from which they were derived (Bandalos & Finney, 2010; Gerbing & Hamilton, 1996; Orcan, 2018; Schmitt, 2011). Procedures carried forward unchanged from the parent-form analyses are described in the CQSO-R validation paper (Khoury & Vergara, 2026b).

Confirmatory model fit was evaluated using the comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). These indices were considered collectively and interpreted as descriptive evidence rather than as rigid pass-or-fail criteria (Hu & Bentler, 1999). Models for the domain scores were evaluated before the corresponding total-score models. Internal consistency was estimated using coefficient alpha and total omega, with bootstrap confidence intervals (Cronbach, 1951; Dunn et al., 2014; Sijtsma, 2009; Zhang & Yuan, 2016). Both coefficients were reported because they rely on different assumptions, and neither was interpreted as evidence of validity by itself.

Following development and internal cross-validation in the parent sample, the fixed CQS-20 and CQO-20 configurations were evaluated in the independent confirmatory sample. The same factor structures were tested using CFA, and model fit was evaluated using the CFI, TLI, RMSEA, and SRMR. Internal consistency was reestimated using coefficient alpha and total omega. No further item selection or model modification was undertaken in the confirmatory sample. Accordingly, these analyses examined whether the structures identified and internally cross-validated in the parent sample were supported in a separate data collection.

Secondary analyses examined a limited set of theoretically informative concurrent associations. In the parent sample, associations were examined between the short-form scores and measures of compassion, related interpersonal and affiliative constructs, mindfulness, and psychological functioning. In the independent confirmatory sample, associations between compassion and suffering were examined using the 20-item Suffering Experiences Questionnaire (SEQ). Each correlation was calculated using all observations available jointly for the two variables involved; therefore, sample sizes varied across coefficients. Because questionnaire order was fixed and completion declined for measures administered later in the parent survey, these available-case analyses may disproportionately represent participants who were more willing or able to continue. The correlations were therefore interpreted as descriptive evidence of concurrent association rather than as evidence of prospective, predictive, or causal relationships.

Measurement invariance was examined in the parent sample between participants identifying as women and men who had complete data for the relevant short form. Participants who reported another gender identity or preferred not to answer were not included in the two-group models because the corresponding group sizes were insufficient for stable estimation. The analyzed groups comprised 728 women and 136 men. Configural, metric, scalar, and strict invariance models were evaluated sequentially. Model comparisons considered chi-square difference tests alongside changes in approximate fit indices because chi-square tests can be sensitive to sample size (Cheung & Rensvold, 2002; Hirschfeld & von Brachel, 2014; Putnick & Bornstein, 2016). Interpretations were restricted to comparisons between the analyzed groups and were not generalized to gender more broadly.

Complete cases were used for analyses requiring responses to the complete relevant item set, whereas available cases were used for pairwise analyses of external associations. In the

parent sample, missingness reached approximately 30%–50% for several measures administered later in the survey and may have reflected the fixed survey order, fatigue, motivation, or engagement. Participants included in and excluded from the primary complete-case analyses differed statistically in age and employment status, although the effect sizes were small. Detailed comparisons are reported in Supplementary Table S1. These comparisons do not establish that data were missing at random because differences involving unmeasured characteristics may remain. Findings involving incomplete data were therefore interpreted with attention to reduced precision, possible selection bias, and limited generalizability.

In the independent confirmatory sample, conditional inference trees were used to explore whether suffering scores identified subgroups characterized by different levels of self- and other-directed compassion. Conditional inference trees are a nonparametric form of recursive partitioning that selects variables and split points through hypothesis-testing procedures rather than the impurity or variance-reduction criteria used in conventional classification and regression trees. This approach reduces the variable-selection bias associated with predictors that offer many possible split points and uses statistical stopping criteria to limit tree growth (Hothorn et al., 2006). The analyses were considered exploratory because the resulting partitions were identified and evaluated within the same confirmatory sample. The trees were used to identify potentially nonlinear associations, thresholds, and interactions without requiring these features to be specified in advance; they were not interpreted as establishing causal or clinically diagnostic cutoffs.

Person-centered profile analyses were not conducted because compassion-profile configurations and their longitudinal associations were examined more comprehensively in a separate publication from the broader research program (Khoury & Vergara, 2026c). Excluding

these analyses avoided duplication and maintained the present study's focus on short-form development, internal cross-validation, and external confirmation.

Analyses were conducted in R using the psych, lavaan, semTools, ggplot2, gridExtra, ggpubr, qgraph, RColorBrewer, and partykit packages. Complete package versions and analytic procedures are documented in the reproducible code archive (Auguie, 2017; Epskamp, 2022; Hothorn & Zeileis, 2015; Kassambara, 2023; Neuwirth, 2022; R Core Team, 2026; Revelle, 2023; Rosseel et al., 2025; Wickham, 2016).

Results

Short-Form Derivation and Parent-Form Correspondence

The CQS-20 and CQO-20 were derived from their respective parent-item pools using all available responses, comprising 1,067 and 912 participants, respectively. Analysis-specific sample sizes were smaller when complete item-level data or additional variables were required. Because participants completed the parent forms rather than independently administered short forms, all short-form scores were reconstructed from responses obtained during the shared administration.

Within the shared administration, the short-form domain scores corresponded closely with their parent-form counterparts in both the development and internal holdout subsets (Figures 1 and 2). In the development subsets, coefficients of determination exceeded .95, regression slopes ranged from .96 to 1.00, and intercepts ranged from .03 to .12; comparable results were obtained in the holdout subsets. Standard errors for the slopes in the holdout subsets were also small for the CQS-20 domains: Thinking/Feeling Compassionately, .009; Connecting With Others Compassionately, .007; and Acting Compassionately, .007. The corresponding standard errors for the CQO-20 domains were .010, .004, and .008, respectively. These findings

provide descriptive evidence of close score correspondence within the shared administration. However, because the short- and parent-form scores were calculated from overlapping items completed during the same administration, these findings do not establish agreement between independently administered forms or demonstrate their equivalence or interchangeability.

Factor Structure and Internal Consistency

Exploratory factor analysis of the CQS-20 in the development subset supported the retained three-domain configuration, and no additional items were removed. Model indices were TLI = .95, RMSEA = .057, RMSR = .02, and KMO = 1.00. The finalized configuration was then evaluated without modification in the internal holdout subset using confirmatory factor analysis (CFA). Model fit was acceptable, CFI = .92, TLI = .93, RMSEA = .071, and SRMR = .03, and standardized factor loadings ranged from .65 to .86. Evaluation of the same fixed configuration in the independent confirmatory sample yielded somewhat weaker fit, CFI = .89, TLI = .88, RMSEA = .080, and SRMR = .07. Although the CFI and TLI were slightly below .90, the RMSEA and SRMR remained within an acceptable range, and the factor-loading pattern was generally maintained. Taken together, these results provided qualified support for the three-domain structure of the CQS-20, with some attenuation of model fit in the independent confirmatory sample. The CQS-20 models for the parent and confirmatory samples are presented in Figures 3A and 3E, respectively.

The same analytic sequence was applied to the CQO-20, with no additional items removed after the three-domain configuration was established. In the development subset, model indices were TLI = .94, RMSEA = .050, RMSR = .03, and KMO = .99. CFA of the fixed configuration in the internal holdout subset indicated acceptable fit, CFI = .95, TLI = .94, RMSEA = .050, and SRMR = .04, with standardized factor loadings ranging from .48 to .88. In

the independent confirmatory sample, the model continued to demonstrate acceptable fit, CFI = .94, TLI = .93, RMSEA = .062, and SRMR = .04. Across both short forms, the lower bounds of the 95% bootstrap confidence intervals for the exploratory factor loadings remained above .30. These findings supported the stability of the CQO-20 structure across the development, internal holdout, and independent confirmatory analyses. The CQO-20 models for the parent and confirmatory samples are presented in Figures 3B and 3F, respectively.

Internal consistency was strong across the three domains, total scores, and analytic samples. In the parent sample, Acting Compassionately yielded the lowest coefficients for the CQS-20, with α = .88 and .89 and ω = .88 and .89 in the development and internal holdout subsets, respectively. In the independent confirmatory sample, coefficient alpha and total omega were α = .89 and ω = .92 for Thinking/Feeling Compassionately, α = .88 and ω = .92 for Connecting With Others Compassionately, and α = .89 and ω = .93 for Acting Compassionately.

For the CQO-20, Thinking/Feeling Compassionately yielded the lowest coefficients in the parent sample, with α = .84 and .86 and ω = .84 and .86 in the development and internal holdout subsets, respectively. In the independent confirmatory sample, coefficient alpha and total omega were α = .91 and ω = .94 for Thinking/Feeling Compassionately, α = .88 and ω = .92 for Connecting With Others Compassionately, and α = .85 and ω = .89 for Acting Compassionately. Complete factor loadings and internal consistency estimates across the development, internal holdout, and independent confirmatory samples are reported in Tables 3 and 4. Overall, both short forms demonstrated strong internal consistency, and their reliability was maintained in the independent confirmatory sample.

Concurrent Associations

Secondary analyses examined whether scores reconstructed from the selected 20 items retained theoretically expected patterns of association. In the parent sample, correlations were organized into four groups: associations between the CQS-20 and CQO-20 domains; associations with mindfulness; associations with other compassion measures; and associations with psychological symptoms, affect, emotion regulation, empathy, social variables, and well-being. Figure 4 presents the principal findings using Bonferroni-adjusted *p* values, whereas the complete correlation matrix and analysis-specific sample sizes are reported in the supplementary materials. Because correlations involving the corresponding parent-form scores have been reported previously using the shared dataset, the present analyses focused specifically on associations involving the reconstructed short-form scores.

Associations between corresponding CQS-20 and CQO-20 domains were generally weaker than associations among domains within each short form. This pattern supports the conceptual differentiation of self- and other-directed compassion in the parent sample, although it does not indicate that the two forms of compassion are statistically independent.

Associations with mindfulness also differed according to the direction of compassion. CQO-20 scores were most consistently associated with interpersonal mindfulness, as assessed by the Interpersonal Mindfulness Scale. In contrast, CQS-20 scores demonstrated comparatively stronger associations with intrapersonal mindfulness, as assessed by the Five Facet Mindfulness Questionnaire and the Mindful Attention Awareness Scale. Associations with the Acting With Awareness and Observing facets of the Five Facet Mindfulness Questionnaire were comparatively modest. Overall, these findings suggest that the short-form compassion scores were related to, but distinct from, mindfulness.

Associations with other compassion measures followed the expected directional pattern. CQS-20 scores were most strongly associated with measures of self-directed compassion, whereas CQO-20 scores were most strongly associated with measures of compassion for others. Associations with the Recognizing Suffering and Understanding the Universality of Suffering domains of the Sussex–Oxford scales were comparatively weaker. These findings provide evidence of differentiated convergence among compassion measures based on distinct conceptual frameworks; however, they should not be interpreted as demonstrating the superiority of one measure over another.

The short forms also demonstrated differentiated associations with other theoretically relevant constructs. CQS-20 scores were associated with positive and negative affect, psychological symptoms, emotion-regulation skills, and well-being. In contrast, CQO-20 scores showed their clearest associations with empathy and active-empathic listening, consistent with their interpersonal orientation. Collectively, these concurrent associations provide preliminary evidence of differentiated nomological patterns, but they do not establish prospective, predictive, or causal relationships.

In the independent confirmatory sample, conditional inference trees were used to explore potentially nonlinear associations between the SEQ domains and self- and other-directed compassion. The relative contributions of the SEQ domains differed across the compassion outcomes (Figure 5). For the CQS-20 domains, Suffering generally emerged as the principal partitioning variable, with lower Suffering scores corresponding to higher self-compassion scores (Figures 5A–5C). Overcoming provided additional splits in several trees, suggesting that higher Overcoming scores may partially differentiate compassion scores among participants with similar levels of Suffering.

A different pattern emerged for the CQO-20 domains. Overcoming was generally the principal partitioning variable, whereas Suffering contributed an additional split in one of the trees (Figures 5D–5F). For Connecting With Others Compassionately and Acting Compassionately, Overcoming was the only SEQ domain retained as a partitioning variable. Thus, direct experiences of suffering appeared more relevant to variation in self-directed compassion, whereas overcoming suffering appeared more relevant to variation in compassion for others.

These tree-based findings suggest that the associations of suffering and overcoming with compassion may differ according to whether compassion is directed toward the self or others. However, the identified splits should be interpreted as exploratory, sample-specific patterns rather than as evidence of causal effects, statistical interactions, or established clinical thresholds.

Measurement Invariance

Measurement-invariance analyses compared women and men with complete data for the relevant short form (Table 5). Participants who reported another gender identity or preferred not to answer were not included in the two-group models because the available group sizes were insufficient for stable estimation. The analyzed sample comprised 728 women and 136 men; consequently, estimates for men were less precise.

The CQS-20 supported configural and metric invariance, but not scalar or strict invariance. The CQO-20 supported configural, metric, and scalar invariance, but not strict invariance. Accordingly, associations between the measured constructs and external variables may be compared between women and men for both short forms. Latent mean comparisons are supported for the CQO-20 but not for the CQS-20. The absence of strict invariance for the CQO-20 does not preclude latent mean comparisons, although it indicates that residual variances may

differ between groups. These conclusions are limited to comparisons between women and men in the present parent sample and represent internal findings from the shared dataset rather than independent confirmation.

Discussion

The present study developed and psychometrically evaluated two matched 20-item measures of self- and other-directed compassion: the CQS-20 and CQO-20. Together, they reduce the revised CQSO battery from 72 to 40 items while retaining three coordinated domains: Thinking/Feeling Compassionately, Connecting With Others Compassionately, and Acting Compassionately. The forms were developed and internally cross-validated in separate subsets of the parent sample and subsequently evaluated in an independent confirmatory sample. Across these stages, the findings generally supported their three-domain structures, internal consistency, and differentiated concurrent associations.

Matched assessment of self- and other-directed compassion addresses an important measurement need. Existing measures differ in their definitions, directional focus, dimensional structures, and psychometric coverage, and none has been comprehensively evaluated across all relevant measurement properties (Jiang et al., 2023; Vieten et al., 2024). By applying the same three-domain framework to compassion for self and others, the CQS-20 and CQO-20 permit direct examination of how these orientations converge or diverge without combining instruments based on different theoretical models. This is particularly relevant because self-compassion and compassion for others may relate differently to psychological distress, well-being, and interpersonal functioning (García-Campayo et al., 2024; López et al., 2018).

The structural findings supported the intended three-domain configurations of both short forms. Exploratory analyses supported these structures in the development subsets, and

confirmatory analyses of the fixed configurations indicated acceptable fit in the internal holdout subsets. The CQO-20 also maintained acceptable global fit and its intended loading pattern in the independent confirmatory sample. Support for the CQS-20 was somewhat weaker in the independent sample, although the overall pattern of fit and factor loadings continued to support its intended structure. Thus, both forms retained their three-domain organization across samples, with more consistent structural support for the CQO-20 and qualified support for the CQS-20

Factor loadings were generally moderate to high, and internal consistency was strong across domains and samples. Item reduction therefore did not produce instruments defined only by undifferentiated total scores. Instead, both forms retained distinguishable cognitive-affective, relational, and behavioral dimensions. These distinctions are substantively important because thinking and feeling compassionately, maintaining connection during suffering, and acting to alleviate suffering may operate differently, even when they contribute to a broader compassionate orientation.

The item-selection strategy was designed to preserve this conceptual breadth. Selecting short-form items primarily to maximize reliability or parent-form correspondence can narrow construct representation and overstate the transfer of validity from the parent instrument (Smith et al., 2000). Accordingly, selection considered domain coverage, conceptual breadth, redundancy, wording balance where permitted by the parent-item pools, psychometric performance, and parent-form correspondence. Thinking/Feeling Compassionately was represented by eight items because it integrates cognitive and affective content, whereas Connecting With Others Compassionately and Acting Compassionately were represented by six items each. The generally stable loadings and reliability estimates in the independent sample support this balance between brevity and content representation.

The CQS-20 and CQO-20 complement rather than duplicate existing abbreviated or parallel measures. The 12-item Self-Compassion Scale–Short Form retains the six-component organization of the 26-item Self-Compassion Scale (Raes et al., 2011), whereas the 20-item Sussex–Oxford forms assess five competencies in parallel self- and other-directed versions (Gu et al., 2020). The present forms instead retain the revised CQSO instruments' coordinated cognitive-affective, relational, and behavioral domains. These measures therefore provide related but theoretically distinct approaches to compassion assessment.

Short-form scores closely corresponded with their parent-form counterparts in the development and internal holdout subsets, indicating that the reduced item sets retained substantial information from their parent domains. However, the magnitude of this correspondence reflects shared administration and part-whole overlap because the retained items also contributed to the parent-form scores. Evaluation in the independent sample provided stronger evidence of structural reproducibility by testing the fixed configurations under different sampling and survey-administration conditions. It did not, however, establish agreement between independently administered short and parent forms because the short-form scores were again reconstructed from parent-form responses.

Concurrent associations further supported differentiated nomological patterns. CQS-20 scores were more strongly associated with measures of self-directed compassion and showed meaningful associations with affect, psychological symptoms, emotion-regulation skills, and well-being. These findings accord with evidence linking self-compassion to lower psychopathology, greater well-being, and more adaptive responses to personal suffering and distress (MacBeth & Gumley, 2012; Neff, 2003b; Zessin et al., 2015). They situate the CQS-20

within this established network while extending it to a measure that does not define mindfulness as a component of compassion.

CQO-20 scores were more strongly associated with compassion for others, empathy, active-empathic listening, and interpersonal mindfulness. This pattern is consistent with measures that conceptualize compassion for others through awareness of suffering, emotional engagement, and motivation or action to alleviate suffering, including the Compassion Scale, Sussex–Oxford Compassion for Others Scale, and Compassionate Engagement and Action Scales (Gilbert et al., 2017; Gu et al., 2020; Pommier et al., 2020). The findings support the CQO-20's interpersonal orientation while reflecting conceptual differences among these instruments.

Corresponding CQS-20 and CQO-20 domains were generally less strongly associated than domains within each instrument. This supports the differentiation of self- and other-directed compassion without implying their independence. Consistent with previous research, self-compassion showed stronger associations with affective functioning and psychological distress, whereas compassion for others had clearer interpersonal correlates (García-Campayo et al., 2024; López et al., 2018). The findings also accord with the flows-of-compassion perspective, in which compassion for oneself, compassion for others, and compassion received from others are related but distinguishable orientations (Gilbert et al., 2017). The matched forms may therefore be useful for examining when inwardly and outwardly directed compassion converge, diverge, or relate differently to functioning.

Compassion was also related to, but distinguishable from, mindfulness. CQS-20 scores showed comparatively stronger associations with intrapersonal mindfulness, whereas CQO-20 scores were most consistently associated with interpersonal mindfulness. Modest associations

with some mindfulness facets, including Observing and Acting With Awareness, suggest that the short forms do not simply reproduce mindful awareness. This distinction is relevant because the Self-Compassion Scale and Compassion Scale incorporate mindfulness or balanced awareness within their conceptual structures (Neff, 2003a; Pommier et al., 2020), whereas the CQS and CQO assess compassion-related capacities without defining mindfulness as compassion itself.

Similarly, weaker associations with the Recognizing Suffering and Understanding the Universality of Suffering domains likely reflect differences in the organization of compassion across measures. Whereas the Sussex–Oxford scales distinguish five competencies, the CQS-20 and CQO-20 integrate cognitive and affective engagement and separately represent relational connection and compassionate action (Gu et al., 2020; Khoury & Vergara, 2026b). These findings support differentiated convergence across theoretical models rather than the superiority of one measure.

The independent confirmatory sample also clarified how compassion relates to the Suffering and Overcoming domains of the SEQ. Conditional inference trees indicated direction-specific patterns. Suffering generally emerged as the principal partitioning variable for the CQS-20 domains, with lower Suffering corresponding to higher self-compassion. Overcoming provided additional partitions in several trees, suggesting that people reporting similar levels of Suffering could differ in self-compassion according to their capacity or disposition to overcome suffering. For the CQO-20 domains, Overcoming was generally more prominent, whereas Suffering contributed less consistently.

The prominence of Suffering for the CQS-20 is conceptually consistent with self-compassion as a supportive response to one's own pain, failure, or difficulty (Neff, 2023). Greater suffering may coincide with self-criticism, emotional overwhelm, withdrawal from

support, or difficulty initiating soothing and protective action. Lower self-compassion under these conditions should not necessarily be understood as a stable personal deficit; intense suffering may temporarily restrict access to compassionate capacities.

The contribution of Overcoming further suggests that self-compassion is related not only to the intensity of suffering but also to how suffering is approached and processed. Among individuals with comparable Suffering, differences in Overcoming corresponded to differences in self-compassion. This accords with conceptualizations of self-compassion as supporting adaptive engagement with distress rather than its avoidance or suppression (Neff, 2023), and with the SEQ framework, in which Suffering and Overcoming are related but distinguishable dimensions of suffering experiences (Khoury & Vergara, 2026d). Self-compassion may support overcoming, overcoming may strengthen compassionate engagement with oneself, or both may be influenced by other factors. The cross-sectional findings cannot distinguish among these possibilities.

The greater prominence of Overcoming for the CQO-20 suggests a different relationship with outwardly directed compassion. Experiencing personal suffering may not by itself increase compassion for others. How adversity is processed or overcome may be more relevant to whether it becomes a basis for understanding, connection, and compassionate action. This interpretation is especially compatible with Connecting With Others Compassionately, which reflects recognizing shared vulnerability and maintaining connection during suffering. Integrated experiences of adversity may support perspective taking and compassionate action, whereas overwhelming or unresolved suffering may consume emotional resources without increasing compassion for others.

This interpretation is consistent with evidence that self-compassion and compassion for others do not invariably change together. Self-compassion tends to relate more closely to distress and affective functioning, whereas compassion for others retains distinct interpersonal correlates and may be less directly associated with personal distress (García-Campayo et al., 2024; López et al., 2018). The present findings therefore do not support the assumption that greater personal suffering naturally produces greater compassion for others. Instead, overcoming or integrating suffering may be more relevant to outwardly directed compassion.

These findings identify several research priorities. Studies of compassion and adversity should assess Suffering and Overcoming jointly because their relationships with compassion may be distinct, nonlinear, and direction specific. Longitudinal work could test whether increasing suffering precedes reductions in self-compassion, whether self-compassion facilitates subsequent overcoming, and whether overcoming supports later relational connection or compassionate action. The tree-derived patterns also require independent replication and examination through theory-driven nonlinear or interaction models. Potential mechanisms include self-criticism, shame, emotion regulation, experiential avoidance, social support, meaning-making, and experiences of receiving care.

The findings also have potential clinical implications. If supported through prospective stand-alone evaluation, matched CQS-20 and CQO-20 domain scores may help distinguish capacities to respond compassionately to personal suffering from capacities to respond to others' suffering. When elevated Suffering accompanies lower self-compassion, domain scores could clarify whether difficulties primarily involve unsupportive thinking and feeling, disconnection from support, or limited compassionate action, thereby informing a more focused case formulation.

For example, lower Thinking/Feeling Compassionately may direct attention toward self-judgment, blame, or anger; lower Connecting With Others Compassionately may reflect discomfort receiving care or withdrawal from support; and lower Acting Compassionately may indicate difficulty translating compassionate intentions into soothing, protective, or alleviative behavior. Self-compassion practices are used clinically to help clients relate differently to painful experiences and cultivate supportive responses (Germer & Neff, 2013; Neff, 2023). The CQS-20 domains may eventually provide a structured means of examining which compassionate capacities warrant attention and how they relate to Suffering and Overcoming.

For compassion toward others, the prominence of Overcoming suggests that clinical inquiry should not assume that exposure to suffering necessarily produces empathy or compassionate action. It may be useful to explore whether adversity has been processed in ways that foster connection or continues to generate depletion, avoidance, or isolation. In caregiving, helping, and relational contexts, paired profiles may also identify imbalances, such as strong care for others accompanied by limited self-compassion, or adequate self-compassion accompanied by difficulty connecting with others' suffering. Such patterns could support collaborative exploration of how individuals allocate care and respond to vulnerability.

Measurement invariance differed across the two forms. The CQS-20 supported configural and metric, but not scalar or strict, invariance between women and men. Associations with external variables may therefore be compared cautiously across these groups, whereas latent mean comparisons are not supported. The CQO-20 supported configural, metric, and scalar, but not strict, invariance, supporting latent mean comparisons while indicating differences in residual variances. This interpretation follows guidance that metric invariance supports comparisons of associations, scalar invariance supports latent mean comparisons, and strict

invariance additionally requires equal residual variances (Putnick & Bornstein, 2016). The different findings reinforce the need to evaluate invariance separately for self- and other-directed compassion rather than assuming identical functioning across matched measures.

The practical value of the CQS-20 and CQO-20 lies in their matched architecture and reduced length. The forms reduce their revised parent questionnaires by 44% and 39%, respectively, and the combined battery from 72 to 40 items while preserving multiple indicators of each domain and balanced wording where feasible. They occupy a useful position between highly abbreviated measures, such as the 12-item SCS-SF, and more extensive multidimensional batteries. Although comparable in length to the Sussex–Oxford forms, their three-domain structure provides a distinct operationalization of compassion (Gu et al., 2020; Raes et al., 2011).

This format may facilitate coordinated assessment of self- and other-directed compassion in personality, counselling, clinical, and interpersonal research. It is particularly suited to questions concerning discrepancies between inwardly and outwardly directed compassion or differences among compassionate thinking and feeling, relational connection, and action. The matched forms may also help examine whether interventions influence self- and other-directed compassion similarly, whether change emerges first in particular domains, and whether these patterns vary with Suffering and Overcoming. The CQS-20 and CQO-20 thus provide lower-burden options when parallel assessment within the CQSO framework is theoretically or clinically relevant.

Limitations and Future Directions

Several limitations qualify the findings and identify priorities for further evaluation of the CQS-20 and CQO-20. First, this study involved secondary analyses of two Canadian datasets used wholly or partly in related publications. Random splitting separated item selection from

evaluation within the parent sample, but the development and holdout subsets originated from the same recruitment period and survey administration. The holdout analyses therefore provided internal cross-validation rather than independent validation. The second dataset provided external confirmation under different sampling and administration conditions, although further independent replication remains necessary.

Second, participants completed the full CQS-R and CQO-R rather than stand-alone short forms. Responses may therefore have been influenced by the parent forms' item context, order, and length. Because the short-form items also contributed to the parent-form scores, part-whole dependency increased their expected correspondence. The high coefficients of determination and near-unit regression slopes consequently do not establish equivalence, alternate-form agreement, or interchangeability, consistent with cautions against assuming that parent-form properties transfer automatically to a derived short form (Smith et al., 2000).

Third, completion of the fixed-order parent survey declined for measures presented later. Complete-case and available-case analyses preserved usable information but may have disproportionately represented participants who were more willing or able to continue. Although included and excluded participants differed only modestly in observed age and employment status, these comparisons cannot establish that missingness was random or exclude unmeasured selection. Missingness may therefore have reduced precision and affected external associations, representativeness, and generalizability.

Fourth, both samples comprised English-speaking Canadian adults recruited through social media and included substantially more women than men. Measurement invariance was examined only between women and men in the parent sample, with less precise estimates for men. Other gender-response groups were too small for stable estimation. The invariance findings

should therefore be restricted to women and men in this sample and not generalized to gender more broadly.

Fifth, the study evaluated internal structure, internal consistency, within-administration parent-score correspondence, concurrent associations, and measurement invariance. It did not examine test-retest reliability, alternate-form agreement, conditional measurement precision, responsiveness to change, prospective prediction, diagnostic accuracy, or clinically meaningful thresholds. Nor did it directly assess completion time, perceived burden, readability, acceptability, or response processes. Reduced item count alone does not establish lower respondent burden.

Sixth, the conditional inference-tree analyses relating compassion to Suffering and Overcoming were exploratory. The identified partitions may reflect nonlinear and direction-specific associations, but they do not establish causal pathways, conventional statistical interactions, or clinically meaningful thresholds. These patterns require independent cross-validation and longitudinal, theory-driven examination before informing individual clinical interpretation.

Finally, the short forms were derived by investigators involved in developing the parent questionnaires. Transparent reporting of item-selection criteria, sample allocation, analytic code, and retained configurations is therefore important, alongside replication by independent researchers. This need reflects broader gaps in compassion measurement, where support for internal consistency and content validity is more common than evidence regarding structural validity, responsiveness, invariance, criterion validity, and performance across populations (Jiang et al., 2023; Vieten et al., 2024).

Future studies should administer the CQS-20 and CQO-20 independently in newly recruited and more diverse samples. Priorities include evaluating completion time, perceived burden, readability, response processes, test-retest reliability, and responsiveness; applying ordinal and item-level models; and examining replication and invariance across cultural, linguistic, clinical, and gender groups. Independently administered short and parent forms should also be compared before their scores are considered equivalent or interchangeable (Smith et al., 2000).

Although parent-form compassion scores and profiles were generally stable over three months, with somewhat greater variation in compassionate action, those findings do not establish temporal stability for independently administered CQS-20 and CQO-20 scores (Khoury & Vergara, 2026c). The short forms are therefore best regarded as promising research measures supported by internal cross-validation and initial external confirmation. Prospective stand-alone evaluation is needed to establish their temporal stability, responsiveness, and clinical utility.

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Figures

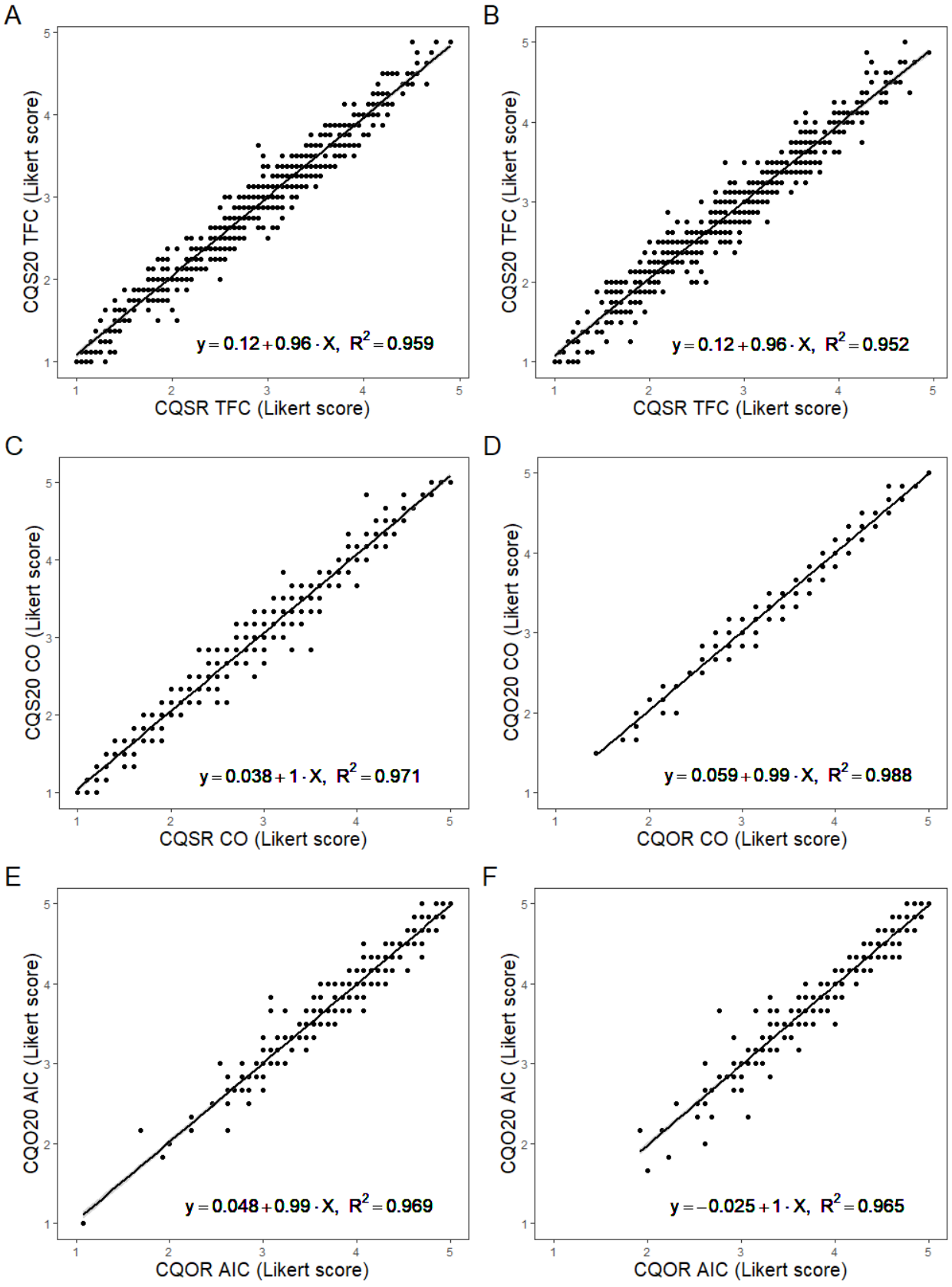
A
CQS20 TFC (Likert score)
CQSR TFC (Likert score)
y = 0.12 + 0.96 · X, R² = 0.959
B
CQS20 TFC (Likert score)
CQSR TFC (Likert score)
y = 0.12 + 0.96 · X, R² = 0.952
C
CQS20 CO (Likert score)
CQSR CO (Likert score)
y = 0.038 + 1 · X, R² = 0.971
D
CQO20 CO (Likert score)
CQOR CO (Likert score)
y = 0.059 + 0.99 · X, R² = 0.988
E
CQO20 AIC (Likert score)
CQOR AIC (Likert score)
y = 0.048 + 0.99 · X, R² = 0.969
F
CQO20 AIC (Likert score)
CQOR AIC (Likert score)
y = −0.025 + 1 · X, R² = 0.965

Figure 1. *Correspondence Between CQS-20 and CQS-R Domain Scores in the Development and Internal Holdout Subsets*

Note. Scatterplots show reconstructed CQS-20 scores in relation to their CQS-R parent-domain scores for Thinking/Feeling Compassionately in the development (A) and internal holdout (B) subsets, Connecting With Others Compassionately in the development (C) and internal holdout (D) subsets, and Acting Compassionately in the development (E) and internal holdout (F) subsets. Each panel displays the fitted linear regression equation and coefficient of determination (R^2). Because the short- and parent-form scores share items, these analyses indicate within-administration correspondence rather than equivalence or interchangeability.

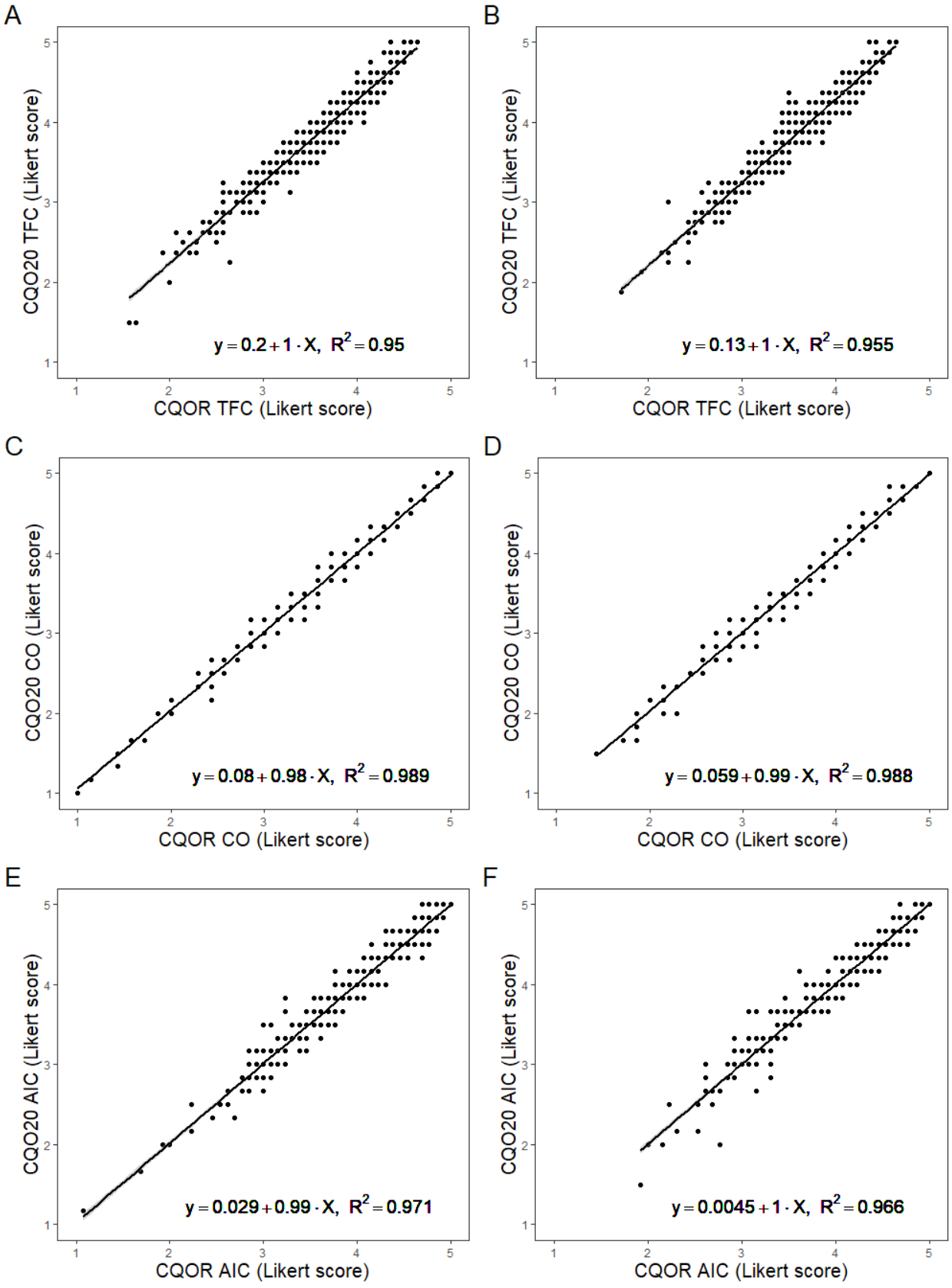
A
CQO20 TFC (Likert score)
CQOR TFC (Likert score)
y = 0.2 + 1 · X, R² = 0.95
B
CQO20 TFC (Likert score)
CQOR TFC (Likert score)
y = 0.13 + 1 · X, R² = 0.955
C
CQO20 CO (Likert score)
CQOR CO (Likert score)
y = 0.08 + 0.98 · X, R² = 0.989
D
CQO20 CO (Likert score)
CQOR CO (Likert score)
y = 0.059 + 0.99 · X, R² = 0.988
E
CQO20 AIC (Likert score)
CQOR AIC (Likert score)
y = 0.029 + 0.99 · X, R² = 0.971
F
CQO20 AIC (Likert score)
CQOR AIC (Likert score)
y = 0.0045 + 1 · X, R² = 0.966

Figure 2. *Correspondence Between CQO-20 and CQO-R Domain Scores in the Development and Internal Holdout Subsets*

Note. Scatterplots show reconstructed CQO-20 scores in relation to their CQO-R parent-domain scores for Thinking/Feeling Compassionately in the development (A) and internal holdout (B) subsets, Connecting With Others Compassionately in the development (C) and internal holdout (D) subsets, and Acting Compassionately in the development (E) and internal holdout (F) subsets. Each panel displays the fitted linear regression equation and coefficient of determination (R^2). Because the short- and parent-form scores share items, these analyses indicate within-administration correspondence rather than equivalence or interchangeability.

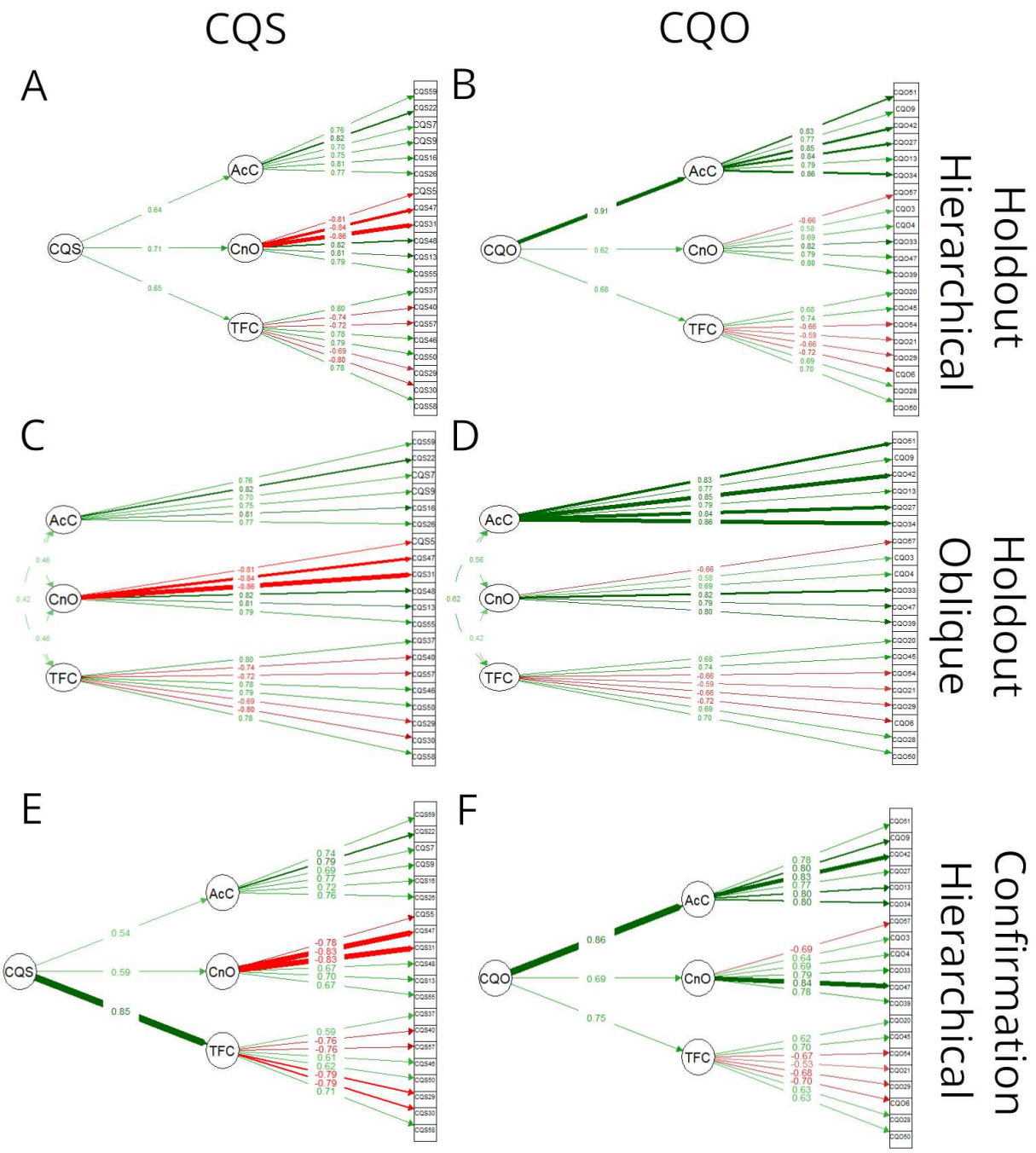

Figure 3. *Confirmatory Factor Models for the CQS-20 and CQO-20 in the Internal Holdout and Independent Confirmatory Samples*

Note. The first column presents the CQS-20 models (Panels A, C, and E), and the second column presents the CQO-20 models (Panels B, D, and F). The first row presents the hierarchical models evaluated in the internal holdout subsets (Panels A and B), and the second row presents the

correlated three-domain models evaluated in the internal holdout subsets (Panels C and D). The third row presents the hierarchical models evaluated in the independent confirmatory sample (Panels E and F). Values on single-headed arrows are standardized factor loadings, and curved double-headed arrows represent correlations between latent domains. Arrow thickness and darkness correspond to the magnitude of the standardized estimates. Green indicates positive estimates, and red indicates negative estimates. CQS-20 = 20-item Compassion Questionnaire for the Self; CQO-20 = 20-item Compassion Questionnaire for Others; TFC = Thinking/Feeling Compassionately; CnO = Connecting With Others Compassionately; AcC = Acting Compassionately.

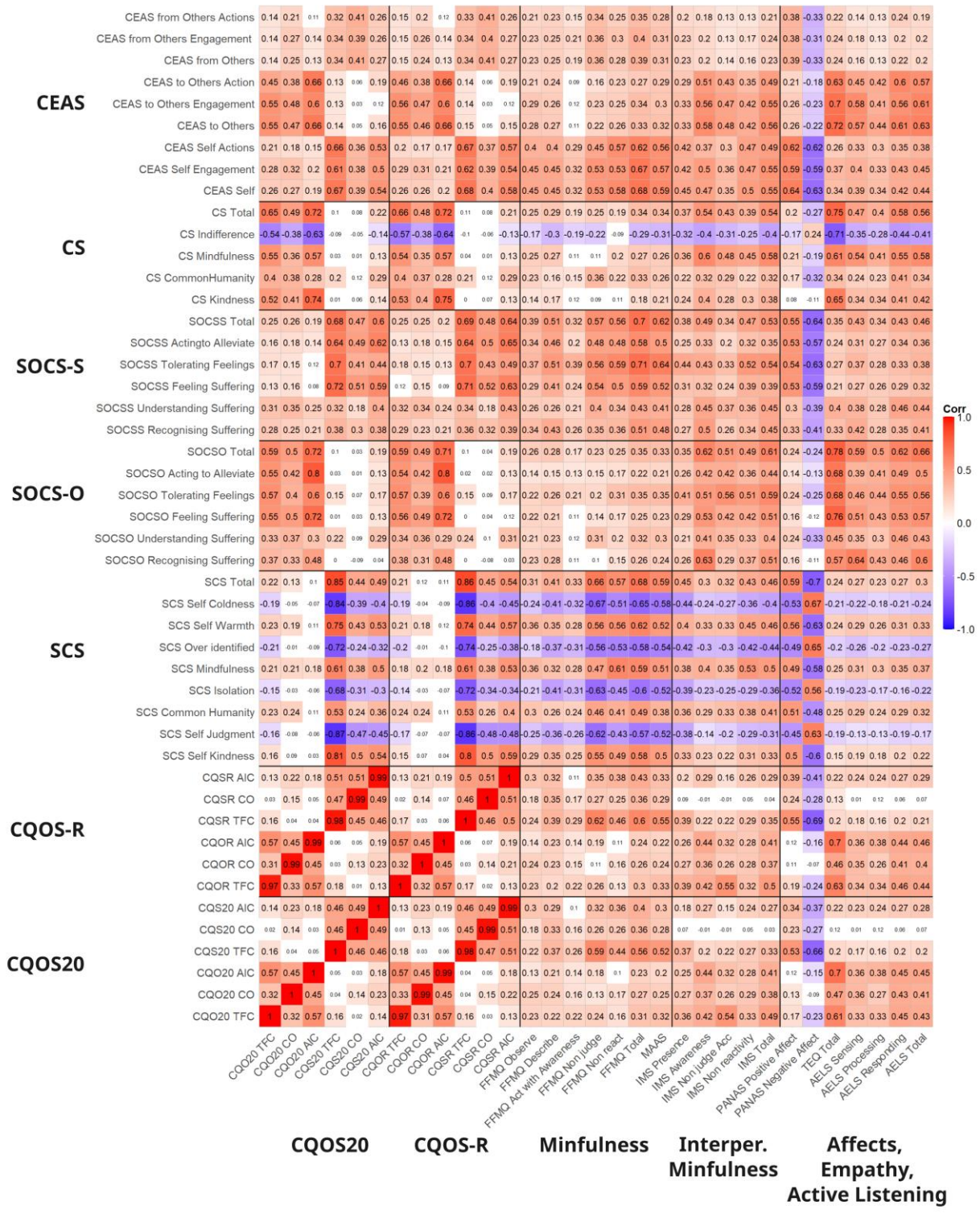

Figure 4. *Concurrent Associations of CQS-20 and CQO-20 Scores With Compassion, Mindfulness, and External Criteria*

Note. The figure presents correlations between the CQS-20 and CQO-20 scores and theoretically relevant external measures in the parent sample. Statistical significance was determined using Bonferroni-adjusted *p* values. Complete correlations and analysis-specific sample sizes are reported in the supplementary materials. CQS-20 = 20-item Compassion Questionnaire for the Self; CQO-20 = 20-item Compassion Questionnaire for Others.

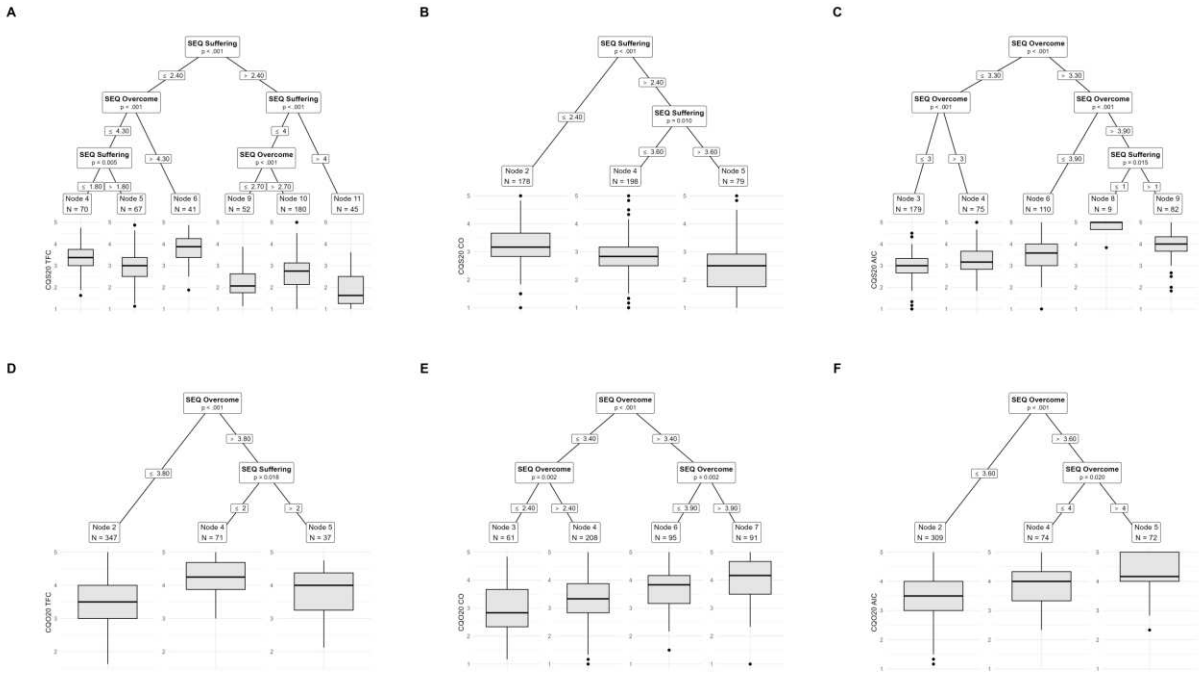

Figure 5. *Conditional Inference Trees Relating Suffering Experiences to Self- and Other-Directed Compassion in the Independent Confirmatory Sample*

Note. The Suffering and Overcoming domains of the Suffering Experiences Questionnaire were entered as predictors in all models. The outcomes were (A) CQS-20 Thinking/Feeling Compassionately, (B) CQS-20 Connecting With Others Compassionately, (C) CQS-20 Acting Compassionately, (D) CQO-20 Thinking/Feeling Compassionately, (E) CQO-20 Connecting With Others Compassionately, and (F) CQO-20 Acting Compassionately. Values displayed at each internal node indicate the partitioning variable and split point, and values in the terminal

nodes represent the estimated compassion scores for the resulting subgroups. CQS-20 = 20-item Compassion Questionnaire for the Self; CQO-20 = 20-item Compassion Questionnaire for Others; SEQ = Suffering Experiences Questionnaire.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- CQSO20Tables.docx
- CQSO20TableS1.docx
- CQSO20AppendixA.docx