THE DEVELOPMENT AND PSYCHOMETRIC EVALUATION OF TWO NEW SCALES OF SELF-COMPASSION FOR PREADOLESCENTS

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Abstract

There are currently no parent-reported scales adapted or validated to measure self-compassion in preadolescent children despite growing interest in the application of this construct in both illness and wellness fields. Two-new measures of self-compassion—modelled from Neff's Self-Compassion Scale—were designed and pilot tested to provide preliminary evidence of validity with preadolescents aged between 9 and 12 years ($n = 193$) and their parents ($n = 108$). Participants completed the Self-Compassion Scale-Preadolescent (SCS-P) or the Self-Compassion Scale-Preadolescent-Parent Report (SCS-P-PR), along with measures of resilience and psychosocial wellbeing. Factor analyses indicted that both the SCS-P and SCS-P-PR measured two statistically and theoretically distinct constructs: compassionate self-responding and uncompassionate self-responding. Both types of self-responding were related to most of the measures of psychosocial wellbeing and resilience in the expected directions. Importantly, the SCS-P-PR is the first parent-reported measure of self-compassion to be introduced in the literature; moderate correlations with the SCS-P suggest that self-compassionate attitudes and behaviours in children are visible to their parents. Should further validation research replicate these promising preliminary findings, the SCS-P and the SCS-P-PR have potential to make valuable contributions to the assessments available to researchers investigating self-compassion in preadolescent children. This research adds to the growing body of literature that cautions against the common practice of viewing self-compassion as one overarching construct. It is recommended that future research take a qualitative approach to enable deeper exploration of both the positive and negative elements of self-compassionate responding in cohorts of children.

Keywords

self-compassion, measurement, scale, child, preadolescent, construct validity

Highlights

- Paper presents first known parent-reported scale to measure self-compassion in preadolescent children
- Findings suggest self-compassion is best represented as two distinct factors: compassionate self-responding and uncompassionate self-responding

Declarations

- Funding

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- Availability of data and materials

  Original data is stored and available on request

- Competing interests

  No conflicts of interest identified

- Authors' contributions

  VSBT wrote the manuscript and collected the data. VSBT and GB conducted all statistical analyses. All authors reviewed the final manuscript. LJB conducted the final editing of the manuscript

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The Development and Psychometric Evaluation of two new Scales of Self-Compassion for Preadolescents

The study of self-compassion has flourished in the decades following its inception into the academic literature in 2003. Self-Compassion was pioneered by researcher Kristen Neff (2003) and defined most simply as "compassion turned inward" (Neff, 2016b, p. 265). Findings from multiple studies have consistently supported Neff's initial hypothesis that adults and adolescents who are able to relate to themselves with kindness and caring (i.e., are more self-compassionate) tend to display greater resilience and report greater levels of subjective wellbeing (e.g., Barnard & Curry, 2011; Neff, 2009; Neff et al., 2007b; Wei et al., 2011). Consequently, interventions aimed at inspiring a healthy and balanced attitude towards oneself, particularly during times of hardship, failure, or distress, are increasingly finding their way into the clinician's 'toolbox' (Barnard & Curry; Gilbert & Procter, 2006). More recently, investigation has turned towards the existence, and/or relevance, of self-compassion in younger populations—such as those in their middle years of childhood (Stolow et al., 2016; Sutton et al., 2017). This preadolescent period of development offers a unique opportunity for young people to foster positive ways of relating to themselves with love, support and understanding, rather than blame, judgement, or cruelty, especially during a time when the conceptual sense of self is still emerging and malleable (Bosacki, 2016).

Unfortunately, theoretical and methodological issues pertaining to the most appropriate means to conceptualise and measure self-compassion have impeded accurate and consistent measurement of this construct. Prominent researchers in the field are divided (see Muris et al., 2016b; Neff, 2016a): One position asserts that self-compassion can, and should, continue to be measured with the current version of the Self-Compassion Scale (SCS; Neff, 2003b), or its abbreviated version, the Self-Compassion Scale-Short Form (SCF-SF; Raes et al., 2011). Meanwhile, an alternate view contests that the use of a total self-compassion score is not warranted and argues for separating the SCS into two separate scales: one measuring the positive, protective features of self-compassion, and the other measuring a theoretically distinct construct, coined by some 'self-coldness' (e.g., Gilbert et al., 2011), others 'self-criticism' (e.g., Lopez et al., 2015), or 'self-condemnation' (e.g., Dundas et al., 2015). Muris and colleagues further assert that self-compassion should *only* be measured by its positive, protective qualities (Muris et al., 2016a; Muris et al., 2016b; Muris & Petrocchi, 2017).

Currently, the most widely used measure of self-compassion is the 26-item self-report SCS (Neff, 2003b). Consistent with Neff's (2003a) seminal definition of self-compassion, half of the scale items are designed to capture the core 'positive' components of self-responding, namely self-kindness, common

humanity, and mindfulness. The other half of the items are designed to capture the tendency for 'negative' self-responding; namely self-judgment, isolation, and over-identification.

Neff's initial validation study of the SCS (2003b) comprised a series of confirmatory factor analyses indicating that a six-factor correlated model and a higher-order model were a reasonable fit to the data. Neff (2003b) justified the use of a total score to represent a single self-compassion construct with six subscales. However, more recent efforts to validate the SCS within different populations have yielded mixed findings. Some researchers have successfully replicated Neff's (2003b) six-factor correlated structure utilising confirmatory factor analyses in community (e.g., Garcia-Campayo et al., 2014; Mantzios et al., 2015) and clinical samples (e.g., Castilho et al., 2015). Meanwhile, others have been unable to replicate the six-factor factor solution (e.g., Brenner et al., 2017; Costa et al., 2016; Lopez et al., 2015; Petrocchi et al., 2013; Williams et al., 2014).

These discrepant and inconsistent findings have cast doubt on the SCS's validity and reliability. In addition, as only three published studies have replicated the higher-order model of self-compassion (Castilho et al., 2015; Cunha et al., 2016; Dundas et al., 2015) there is debate as to whether a total self-compassion scale (computed from both the positive and negative scale items) is a theoretically valid measure of the self-compassion construct. Brenner et al. (2017), undertook a detailed examination of the internal structure of the SCS using oblique, higher-order, and bi-factor structural models in a sample of 1,115 college students. They found support for a bi-factor model comprised of two general factors; one comprised of the positive items ('self-compassion') and the other the negative items ('self-coldness'). The authors reported their findings as compelling evidence that the SCS measures the presence of two "theoretically distinct constructs" (p. 696), rather than a single underlying self-compassion factor advocated by Neff and colleagues.

According to the evolutionary theories articulated by Gilbert (2005), compassionate behaviour and uncompassionate behaviour have a different underlying physiology and therefore require separate measurement; Gilbert et al. (2011) stated that self-compassion is better represented by only the three positive constituents (i.e., self-kindness, common humanity, and mindfulness). This stance is congruent with that of Muris and his colleagues, who have strongly argued for a distinction to be made between the positive, protective qualities of self-compassion, and the opposing qualities that they also termed self-coldness (Muris, 2015; Muris et al., 2016a; Muris et al., 2016b). In a recent meta-analysis, Muris and Petrocchi (2017) presented evidence that the items measuring the 'negative' components of compassion (i.e., those items that load on to the self-judgement, isolation, and over-identification subscales) are more strongly associated with psychopathology ($.47 < r < .50$)

than the positive components (-.27 < r < -.34). Muris and Petrocchi concluded that use of a total SCS score will result in an "inflated relationship with symptoms of psychopathology" (2017, p. 373) and thus warned future researchers against using any of the negative items of the SCS when measuring self-compassion.

In response to the ongoing controversy, Neff and colleagues (2019) published a large-scale study (N = 11,685) to examine the factor structure of the SCS with 10 community, 6 student, 1 mixed community/student, 1 meditator, and 2 clinical samples. Data were analysed using exploratory structural equation modelling (ESEM). For all samples, "excellent fit" (p. 2) was found for an ESEM six-factor correlated model and an ESEM single bifactor model, with 95% of item variance was explained by a general factor.   In conclusion, the authors surmised that there was support for "use of a total SCS score, or six subscale scores, but not two separate scores representing compassionate and uncompassionate self-responding" (p. 3). This finding is in direct contrast to the two-factor models (reflecting positive and negative ways of self-responding) indicated by the results of Brenner et al. (2017), Costa et al. (2015), Kandler et al. (2017), and Lopez et al (2016) respectively.

Theoretical and methodological issues pertaining to the most appropriate measurement of self-compassion in adult populations are mirrored within the literature pertaining to youth. Currently, the only validated adolescent scale of self-compassion is the Shortened Self-Compassion Scale for Adolescents (S-SCS-A; Muris et al., 2016a). Consistent with Muris's (2015) argument to reconceptualise self-compassion as a purely positive, protective construct, this nine-item questionnaire was derived from a selection of items from only the positive subscales of Neff's (2003b) original SCS. Items were then simplified and modified with the assistance of a panel of three young adolescents and three psychologists. Results from a Principal Components Analysis and Oblique Rotation method findings supported the hypothesised three-factor structure (i.e., self-kindness, common humanity, and mindfulness). All subscales demonstrated adequate internal reliability (all Cronbach's alphas > .70); concurrent validity was demonstrated via positive correlations with measures of self-esteem and self-efficacy.

At the time of completing this study, only two published studies had attempted to measure self-compassion in children under 12. The earliest, by Stolow et al. (2016) used an adaptation of Neff's (2003b) original 26-item SCS. One hundred and ninety-three children and adolescents were sampled across three cohorts: Grade 5 (mean age 9.9 years), Grade 8 (mean age 12.7 years), and Grade 11 (mean age 16 years). Utilising Principal Components Analysis with an Oblique Rotation their scale revealed a two-factor solution. Factor 1 was comprised of the 'negative' items from the self-judgment, isolation, and over-identification subscales. Factor 2 consisted of items from the 'positive' subscales of self-kindness, common humanity, and

mindfulness. The two factors did not correlate with one another ($r = -.03$), indicating that an Orthogonal

Rotation may have provided a clearer solution than the Oblique Rotation employed (Field, 2009; Tabachnick &

Fidell, 2013). All items (bar item 22, which was subsequently removed from the analysis) had factor loadings

exceeding .40. Factor 1 was named 'Self-Compassion Scale Negative Items' (SCS-NEG), and Factor 2 'Self-

Compassion Scale Positive Items' (SCS-POS). Both factors displayed high internal consistency across the

whole sample and for each age grade (all Cronbach's alphas >.8). This two-factor solution was consistent with

the findings of Brenner et al. (2017), Costa et al. (2015), Kandler et al. (2017), and Lopez et al (2016) in their

respective examinations of the factor structure of the SCS with adult and adolescent populations. Stolow et al.

concluded that their results indicate a "need to re-examine the factor structure of the SCS, across age and other

demographic variables" (2016, p. 15).

       Sutton et al. (2017) chose to administer a modified version of the 12-item SCS-SF (Raes et al., 2011) to

a sample of 382 children aged 8-12 years in Canada. According to their methodology, the SCS-SF scale was

adapted, "by altering the language to be age-appropriate" (Sutton et al., 2017, p. 6). Data was analysed via

confirmatory factor analyses of three competing models. The first was a unidimensional model, where one

common factor (self-compassion) was regressed onto the twelve items; it had poor fit. A second model

examined the fit of two separate but correlated factors, comprising the negatively worded items and the

positively worded respectively; this model had fair fit. Finally, based on the recommendations of Neff (2016a;

2016b), a bi-factor model was also examined. While this model showed adequate fit, examination of the

standardised factor loadings revealed that the general self-compassion factor did not account for significant

variance among the items. Rather, items loaded more strongly onto their corresponding negative and positive

self-responding factors. Therefore, Sutton et al. (2017) concluded that their 12-item scale had a two-factor

structure, whereby the negatively worded items and positively worded items formed two discrete subscales.

They named these subscales 'positive self-compassion' and 'negative self-compassion' respectively. Each

factor demonstrated acceptable internal consistency (.81 < Cronbach's alpha < .83). Echoing Stolow et al.'s

(2016) conclusions regarding their adapted SCS, these findings add further weight to the literature reporting that

the SCS measures two distinct constructs rather than one coherent and overarching self-compassion construct

(e.g., Brenner et al., 2017; Costa et al., 2015; Kandle et al., 2017; Lopez et al., 2016).

       Unfortunately, limitations identified within both the Stolow et al. (2016) and Sutton at al. (2017)

studies cast doubt as to the utility of their respective modified self-compassion scales. Firstly, examination of

the methodologies of both studies revealed an apparent lack of rigour in terms of item selection and scale

development. Neither study reported to have employed a clear method of selecting, adapting, or rewording their scale items, nor was item comprehension checked within their child samples prior to scale administration. In contrast, Muris et al. (2016a), outlined a detailed a procedure of item selection, deletion and/or modification in their development of a self-compassion scale specifically for adolescents (i.e., the S-SCS-A).

Secondly, there are questions regarding the generalisability of findings from both the Stolow et al. (2016) and Sutton et al. (2017) studies. For example, the unnamed 26-item scale adopted by Stolow et al. (2016) was administered to children from a broad age range (9-16 years), within a relatively small sample ($N =$ 193). Thus, the applicability of their overall findings to the preadolescent age range is uncertain. Meanwhile, Sutton et al. (2017) sampled a larger number of children within a more specific preadolescent age range (8-12 years); however, they used a shortened 12-item measure, ruling out any potential for more detailed subscale analysis.

Thirdly, neither study attempted to gather data from a parent-perspective, an important oversight given the valuable information parents can provide to supplement children's self-reports (Snow et al., 2005). Levitt et al. (2007) emphasise "the importance of relying on multiple informants" in the assessment of childhood disorders (p. 176). This is echoed by Achenbach (2006), who argued that even though discrepancies are frequently found between self-reports and reports by others, the "use of multi-source data is essential for clinical assessment" (p. 94).

More recently, Neff at al. (2020) published a new scale designed to measure self-compassion in youth. Over a series of four studies, these authors developed and validated the Self-Compassion Scale-Youth version (SCS-Y) with children attending Grades 6, 7 and 8 of middle school in the USA (mean age = 12.4). Their final 17-item scale contained three items from each of Neff's original SCS six subscales (with the exception of the over-identification subscale, which had two items), with each item re-worded to be more "developmentally appropriate" (p. 3). Utilising ESEM, Neff et al. (2020) concluded that their findings mirrored those of the adult SCS, supporting the use of the six subscale scores and a single 'global' self-compassion score (calculated as a grand mean of the subscales' scores, after reverse scoring the negative items). This is in direct contrast to previous studies involving the measurement of self-compassion in children where both Stolow et al. (2016) and Sutton et al. (2017) found strong support for a two-factor solution using exploratory and confirmatory factor analyses (CFA), respectively. It is noted that ESEM, whilst an important step in survey development, has fit indices that are somewhat more liberal than CFA (Marsh, 2009), which may explain the different findings

reported in these studies. Neff et al. (2020) did not attempt to obtain a parent-reported measure of self-compassion, which is a unique contribution of the current study.

Study Aim

The aim of the current study was to develop, pilot, and provide preliminary evidence of validity for two new measures of self-compassion for preadolescent children—a self-report measure, and a parent-perspective version of the same scale. The convergent validity between child self-report and parent-rated self-compassionate responding has yet to be examined in the literature. However, it is expected that a parent-reported perspective is likely to make a valuable contribution to the overall assessment of self-compassion in preadolescent youth, for several reasons. Firstly, obtaining informant-reported data to supplement self-report has the potential to increase both the reliability and generalisability of findings via a process of aggregation (Rushton et al., 1983). In fact, informant-report measures can provide a more accurate measure of "traits that are highly observable by others" (Markon et al., 2013, p.370). Self-compassionate behaviours are highly observable (Neff et al., 2017): Neff, Kirkpatrick, and Rude (2007a) demonstrated that therapists were able to significantly predict individuals' SCS scores after a brief interaction, and strong associations have been found between self-reported and partner-reported scores on the SCS for couples (Neff & Beretvas, 2013).

Secondly, for children who are developmentally unable to provide their own self-report, parents are viewed as the optimal proxy; "by virtue of their daily sharing of the children's experience, parents amass a corpus of observational data that cannot be duplicated" (Seifer, 2005, p. 1953). Meanwhile, for those children who are equipped to provide accurate self-report—such as many preadolescents (Marsh et al., 2005)—parents' perspectives can provide valuable supplementary information to enable a broader understanding of the construct (Snow et al., 2005). Schools and clinicians frequently use self-report measurements, supplemented with teacher and/or parent-report measurements, to support screening for problems and early intervention (Levitt, 2007).

Prior research has shown robust relationships between self-compassion, wellbeing, and resilience in adult and adolescent populations (Bluth et al., 2018; Neff et al., 2007a; Neff et al., 2007b; Neff & McGehee, 2010); emerging evidence has shown similar associations between self-compassion and wellbeing in child populations (Sutton et al., 2017). Therefore, additional measures of psychosocial wellbeing and resilience were included in this study to determine the construct validity of the two new measures of self-compassion.

Method

This study was granted approval by the Human Ethics Committee of the University of Southern Queensland, approval number H17REA022.

Scale Development

The item development procedure adopted for both the preadolescent scale and the parent-reported scale of self-compassion follows the guidelines set out by Colton and Covert (2007). It mirrors the process employed by Jackson and Marsh (1996) in their development of the Flow State Scale, as well as that documented in the construction of the Child and Adolescent Mindfulness Measure (CAMM; Greco et al., 2011b). Firstly, an item pool was developed according to the six components articulated in Neff's (2003a) seminal operationalisation of self-compassion: self-kindness, common humanity, mindfulness, self-judgement, isolation, and over-identification. The 26-item SCS (Neff, 2003b) was examined in conjunction with the 12-item SCS-SF (Raes et al., 2011) and the 9-item S-SCS-A (Muris et al., 2016a). These provided a reference base from which items were generated and/or reworded to be comprehensible by children aged 9-12 years.

An initial pool of 36 items (6 items per subscale) was then evaluated independently by a panel of five researchers and clinicians with knowledge and interest in the field of child clinical psychology and self-compassion. These evaluators scrutinised each of the 36 items in terms of perceived relevancy to its proposed dimension and provided feedback regarding wording and comprehensibility. Each item was rated for content and face validity; those rated lowly were removed, replaced and/or reworded. A refined pool of 26 items remained following this iterative process. A further process of item modification was guided by the input of eight independent children (four girls and four boys) aged 9-12 years. Each child read all items and then provided feedback regarding their understanding of each item's meaning. Minor wording changes were made on the basis of this feedback, and one item (i.e., *"I try to be loving towards myself when I am sad"*) was removed in its entirety due to a general consensus that it was indistinguishable from another item (i.e., *"I am kind to myself when I feel unhappy"*). The resulting items underwent final review by the initial panel of experts prior to their final inclusion in the scale. The final instrument was constructed via an iterative process, whereby continual refinement and revision of the item composition was carried out both systematically and creatively (Colton & Covert, 2007).

The resulting 25-item instrument was named the Self Compassion Scale for Preadolescents (SCS-P). The final scale consisted of four self-kindness items, four common humanity items, four mindfulness items, five self-judgement items, four isolation items, and four over-identification items.

A parent-report version of this instrument (named the SCS-P-PR) was constructed from the SCS-P. The scale items were introduced with the following statement: "*We want to know more about how your child acts towards themselves in difficult times. Please read each statement. Then, circle the number that tells how*

often each statement is true for your child". SCS-P-PR items were developed via simple adaptation of each of the 25 items from the SCS-P scale, whereby pronouns were changed from first person to third person. For example, Item 1 on the SCS-P read "*I am hard on myself when I'm not good at something*"; on the SCS-P-PR scale, Item 1 became "*They are hard on themselves when they are not good at something*". This simple method of item development was employed in order to preserve the scale's consistency and enable reliable comparison of item responses between the preadolescent and parent-versions of the scale.

Participants

Participants were recruited via convenience sampling from local schools in the Darling Downs region of Queensland, Australia. In order to reduce the effects of clustering bias, schools known to attract students across differing geographic areas and socioeconomic groups were contacted. Of the 12 schools invited, five school principals provided informed consent to participate. Three were co-educational government schools and two were single-sex independent schools. One of the independent schools was an all-girls education facility; the other was all-boys. The administration team from each school contacted the parents of Year 5 and 6 students regarding the study; parents registering interest were provided more detailed information regarding the participation requirements of their children and advised they could also participate themselves. Children whose parents had provided informed consent were advised of the study aims and participation requirements via their schoolteacher or Guidance Officer. Children were given the option either assent to participate or opt out without penalty. To maximise participation rates, entry into a draw to win an iPad Air was offered as an incentive.

Measures

Preference was given to concise, freely available instruments with published reliability and validity data relevant to the preadolescent age-range. Wherever possible, measures were selected that had a validated parent-report version available.

Self-compassion. The newly developed SCS-P and SCS-P-PR were used to measure self-compassion in preadolescent children.

Psychosocial wellbeing. Three measures were used to assess multiple components of children's psychosocial wellbeing: affect, life satisfaction, and psychosocial strengths and problems. Affect was measured with the shortened, 10-item Positive and Negative Affect Schedule for Children, child (PANAS-C; Laurent et al.,1999; Ebesutani et al., 2012) and parent version (PANAS-P; Ebesutani et al., 2011; 2012). Both self-report scales measure positive affect (PA) and negative affect (NA) in children and comprise a variety of adjectives

reflective of mood states (e.g., *happy*, *sad*). The PACAS-C asks children to rate how often they have felt a

particular way in the past few weeks, according to a 5-point Likert scale ranging from 1 ("*very slightly or not at

all*") to 5 ("*extremely*"). The PANAS-C-P mirrors the child's scale, asking parents to report how frequently their

child has felt a particular way in the past few weeks. Scores are tallied on two separate scales, PA and NA, and

can theoretically range from 5-25 with higher scores indicating stronger endorsement of each affective state.

Strong psychometric properties were reported from the initial validation study of the long version PANAS-C

(Laurent et al., 1999). Utilising item-response theory, Ebesutani et al. (2012) shortened both the PANAS-C and

PANAS-P into the 10-item scale, improving both the efficiency and psychometric properties of the scales.

Children's life satisfaction was assessed using the Satisfaction with Life Scale for Children (SWLS-C;

Gadermann et al., 2010). This five-item measure is a modified version of the Satisfaction with Life Scale

(SWLS; Diener et al., 1985), created to assess global life satisfaction. Respondents rate their agreement with

items on a five-point Likert scale ranging from 1 (*Disagree a lot*) to 5 (*Agree a lot*). Scores are summed to

produce a total score; higher scores indicate higher levels of life satisfaction. Research supports the validity and

reliability of the SWLS-C with samples of children and early adolescents (Gadermann et al., 2011; Gadermann

et al., 2010). As there is no parent-report measure of children's SWL, a parent-reported assessment of this

construct could not be included in the battery of parent survey instruments.

Psychosocial problems and strengths were measured via the Strengths and Difficulties Questionnaire

(SDQ; Goodman, 1997). Separate scales allow for informants (i.e., parents and/or teachers) to report on the

difficulties and strengths of children aged between 3-16 years old; youths aged 11–16 years can self-report on

their difficulties and strengths. The measure consists of 25 items, formulated as statements, e.g., "*other people

my age generally like me*". Answers are elicited based on how true the statement has been over the last six-

months, on a three-point Likert scale (0 = *not true,* 1 = *somewhat true,* 2 = *certainly true*). Following the

advice of Goodman, Lamping, and Ploubidis (2010) regarding low-risk and/or non-clinical population samples,

subscale scores were collapsed onto three broader scales: internalising problems (comprising 10 items tapping

into emotional and peer-problem symptoms), externalising problems (comprising 10 items tapping into conduct

and hyperactivity-inattention symptoms) and the prosocial scale (5 items). Scores on the internalising and

externalising scales can theoretically range from 0-20. Scores on the prosocial scale can range from 0-10.

Psychometric properties of both the self-report and parent-report SDQ for primary-aged children have been well

established (Stone et al., 2010; Tsang et al., 2012), including non-clinical children as young as 8 years (Muris et

al., 2004; Muris et al., 2003; Van Roy et al., 2008).

Resilience. The 12-item Child and Youth Resilience Measure (CYRM-12; Liebenberg et al., 2013) was developed as a shortened version of the 28-item (CYRM; Liebenberg et al., 2012). Consistent with the ecological model of resilience, individual traits, relationships with caregiver(s), as well as contextual factors known to facilitate a sense of belonging are measured. Two versions are available, one for young children (aged 5-9 years), and another for youth (aged 10-23 years). A separate scale is completed by someone who knows the child/youth well, such as a parent or teacher ('Person Most Knowledgeable'). The scale consists of 12 items phrased as statements. Responses are provided on either a three or five-point Likert scale, depending on how well the child believes each statement describes them (*not at all, a little, somewhat, quite a bit, a lot*). The CYRM is a reliable and valid self-report instrument with adequate psychometric properties (Liebenberg et al., 2012).

Procedure

Child and parent participants were required to complete a battery of self-report measures that were able to be accessed online or completed via pen and paper. Participants were required to endorse that they had read and agreed to the informed consent/assent information before they could proceed to the next stage of the survey. Following the demographics section (e.g., initials of child, gender, date of birth, school and grade attended, cultural group), child participants completed the SCS-P, the CYRM, the PANAS-C, the SWLS-C, and the SDQ. Instructions were provided for each questionnaire, and there was no time limit, so participants could complete the surveys in their own time. The parents' survey followed the same structure as the child survey, but incorporated the SCS-P-PR, the CYRM-PMK, the PANAS-P, and the SDQ-initial parent-report.

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Results

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Demographic Information

A total of 193 children and 108 parents completed the surveys. Ages of children ranged from 9-12 years, with a mean age of 11. Sixty-five percent of child participants identified as female and 35% as male. Forty-two percent of participants were in Year 5, and 58% in Year 6. Children from government schools comprised 63% of the sample with 37% from independent schools. Ninety-eight mothers completed the 'parent' survey, nine fathers, and one grandparent. Culturally, the majority (82%) of the children identified as Australian (Anglo-Saxon) and 9% identified as Aboriginal Australian or Torres Strait Islander. Other cultural groups represented were South East Asian (2%), Central Asian (2%), South Sea Islander (2%), Northern European (2%), North African (1%), South American (1%), and Polynesian (1%).

Factor Analysis of SCS-P

All data analyses were conducted with the statistics package SPSS, version 25. A series of exploratory factor analyses were conducted to examine the factor structure of the SCS-P. As noted above, exploratory factor analysis was chosen over confirmatory factor analysis as: (a) there were no strong theoretical expectations regarding the structure of the data, as prior research with this cohort is sparse; (b) an exploratory method can be used to generate theory; (c) the data is derived from the pilot test of a *new* measure of self-compassion. A major criticism of exploratory factor analysis regards the subjectivity of each decision a researcher must make at the various steps of conducting the analysis (Tabacknich & Fidell, 2014). As poor choices regarding methodological decisions can significantly distort results (Fabrigar et al., 1999), a clear rationale regarding the method of factor extraction, rotation method, and factor retention employed is needed and are described below. This is consistent with Henson and Robert's (2016) recommendations regarding improved practice for the use of exploratory factor analysis in published research.

Assumptions and data screening. There were no cases with missing data, therefore all cases ($n = 193$) were retained for analysis. MacCallum, Browne, and Sugawara (1996) state that 100-200 is an adequate sample size for an exploratory factor analysis when the factors are well defined, and communalities in the range of .50. Sampling adequacy was confirmed with the Kaiser-Meyer-Olkin (KMO; Kaiser, 1970) statistic (Field, 2009); the KMO for this data set fell just short of the 'superb' range, at .88 (Hutcheson & Sofroniou, 1999). In addition, Bartlett's Test of Sphericity was significant ($\chi^2 (300) = 2138.88$, $p = < .001$). Thus, the characteristics of this data set were deemed suitable to proceed with exploratory factor analysis.…

Following recommendations of Field (2009) and Tabachnick and Fidell (2013), item distributions were examined to screen for severe nonnormalities (i.e., skewness > 2; kurtosis > 7; West et al., 1995). None of the SCS-P items showed severe non-normal distribution (all variables = skewness < 1; kurtosis < 1.3). Visual examination of scatterplots revealed that the assumption of linearity was also met (Tabachnick & Fidell). Multivariate outliers amongst cases were screened for by calculating Mahalanobis distance. Probability calculations indicated that 22 cases had values < .05. However, as visual inspection of individual cases revealed that the cause of outliers was not due to incorrectly entered or measured data, all cases were retained.

Correlations between variables were examined via visual inspection of the correlation matrix. For each variable, there were at minimum several Pearson correlations exceeding .3, and at least half of the correlations met the .01 level of significance. Multicollinearity and singularity were also checked via visual inspection of the correlation matrix. There were no variables perfectly correlated, and no variable correlated highly (> .8) with multiple other variables. The absence of multicollinearity was confirmed via examination of both the

tolerance and variance inflation factors (VIF): tolerance levels were greater than 0.10 for each item, and VIF

levels were less than 10 for each item.

Sensitivity Analysis. Study sensitivity was determined using correlation. The sample size (n = 193),

given a two-tails alpha of .05 and power of .80, was sensitive to detect an effect size of at least r = .20

(Schönbrodt & Perugini, 2013).

Method of factor extraction. Prior research examining the factor structure of the SCS (and its

relatives) have employed a variety of different methods of factor extraction. Predominantly these have included

principal component analysis (e.g., Mantzios et al., 2015; Muris et al., 2016a; Stolow et al., 2016), and

maximum likelihood (e.g., Cleare et al., 2018; Lopez et al., 2015). Other studies utilising exploratory factor

analysis have neglected to specify which method of extraction was utilised (Deniz et al., 2008; Min-Ying, 2015;

Neff, 2003b). It has been noted that while principal components analysis is the most frequently adopted method

within psychological literature, it does not always lead to the best results (Costello & Osbourne, 2005). As the

basic intention of principal components is to summarise many variables into fewer components (i.e., data

reduction), rather than identify latent constructs (Costello & Osbourne, 2005; Fabrigar et al., 1999; Henson &

Roberts, 2016; Tabachnick & Fidell, 2013), this method was not deemed consistent with the aims of this study

and therefore ruled out. Instead, the maximum likelihood method of exploratory factor analysis was chosen as

there were no severe violations of multivariate normality (Costello & Osbourne, 2005; Fabrigar et al., 1999). It

was noted that this method was been adopted in prior research with the SCS (Cleare et al., 2018; Lopez et al.,

2015).

Factor retention rule. A parallel analysis (Horn, 1965) was run using the SPSS syntax provided by

O'Connor (2000) and compared to the initial results from an exploratory factor analysis using a maximum

likelihood method. Using the eigenvalue corresponding to the 95th percentile of the random data set (Glorfeld,

1995), a two-factor solution was selected as the most appropriate. Examination of the scree plot (Figure 1) also

indicated that a two-factor solution was the best fit for the data (Zwick & Velicer, 1986). A subsequent factor

analysis using the maximum likelihood method was conducted with two factors specified (Field, 2009). With

an eigenvalue of 6.93, Factor 1 explained 27.71% of the variance. Factor 2 had an eigenvalue of 4.54 and

explained 18.14% of the variance. The eigenvalue of the first factor not retained was 1.46. Consideration was

given to conducting further factorial analyses (such as the Bass-Ackwards procedure; Goldberg, 2006);

however, as parallel analysis enables the interpretation of scree plots to be more objective (Horn, 1965), and the

two-factor solution was in keeping with current theory (see Muris & Petrocchi; 2017), this was not deemed necessary.

[Figure 1]

Rotation method. An orthogonal rotation method (Varimax) was chosen as an oblique rotation (Promax) revealed that the correlation between factors was .218 (Henson & Roberts, 2016; Tabachnick & Fidell, 2013). After Varimax rotation, the 13 negatively formulated items (i.e., items worded to tap into the tendencies towards self-judgement, isolation and over-identification) loaded onto the first factor, and the 12 positively formulated items (i.e., items worded to tap into the tendencies towards self-kindness, common humanity and mindfulness) loaded onto the second factor; all loadings exceeded .5. The total explained variance of this two-factor rotated solution was 41.27%. The percentage of unexplained variance was attributed to the high heterogeneity of the SCS-P's items. Loadings of factors on variables pre- and post-rotation, communalities, and precents of variance and covariance are shown in Table 1. Negative formulated items were reverse scored prior to analyses.

[Table 1]

Factor analyses of subscales. Two additional maximum likelihood factor analyses were conducted to examine the structure of Factor 1 and Factor 2 individually; specifically, to see if the self-judgment, isolation and over-identification components emerged within Factor 1, labelled 'Uncompassionate Self-Responding' and the self-kindness, common humanity and mindfulness components emerged within Factor 2, labelled 'Compassionate Self-Responding'. Results from the Kaiser-Meyer-Olkin Measure of Sampling Adequacy revealed that the data sets fell into the 'superb' range for both Uncompassionate Self-Responding (KMO = .92) and Compassionate Self-Responding (KMO = .90). Bartlett's Test of Sphericity also indicated that both data sets met the minimum standards for this type of analysis (Uncompassionate Self-Responding = χ^2 (78) = 1075. 87, $p = < .001$; Compassionate Self-Responding = χ^2 (66) = 895.341, $p = < .001$).

Examination of the scree plots in conjunction with the results of a parallel analysis did not reveal the emergence of three-factor solution for either the Uncompassionate Self-Responding factor, or the Compassionate Self-Responding factor. Rather, results suggested one-factor solutions for both factors. Therefore, a second set of maximum likelihood factor analyses were conducted with one fixed factor specified. Regarding the Uncompassionate Self-Responding scale, a one-factor solution (eigenvalue = 6.01) accounted for 46.23% of the variance. The eigenvalue of the first factor not retained was 1.18. Regarding the Compassionate Self-Responding scale, a one-factor solution (eigenvalue = 5.30) accounted for 44.13% of the variance. The

eigenvalue of the first factor not retained was 1.29. For the Uncompassionate Self-Responding scale, item

factor loadings ranged from .53 to .80. For the Compassionate Self-Responding scale, item factor loadings

ranged from .51 to .73.

Taken together, findings indicated that the SCS-P measures two distinct constructs: the tendency to

respond to the self in a negative fashion (Uncompassionate Self-Responding), and the tendency to respond to the

self with compassion (Compassionate Self-Responding). This is consistent with the findings of previous

research that has examined similar versions of the SCS within child populations (i.e., Stolow et al., 2016; Sutton

et al., 2017). Subsequent analyses independently examined the reliability and validity of the two emerging

factors, Compassionate Self-Responding and Uncompassionate Self-Responding.

Reliability. The internal consistency of the two emerging factors was analysed with Cronbach's alpha

statistic. Values of .80 or higher were considered as good, and over .70 acceptable (Gliem & Gliem, 2003). As

displayed in Table 2, Cronbach's alphas for both the Uncompassionate Self-Responding factor and the

Compassionate Self-Responding factor indicated good internal consistency. Examination of the item-total

statistics table revealed that that removal of any item would result in a lower Cronbach's alphas, and thus all

items were retained for both factors. It was noted that the Cronbach's alphas for both the internalising

difficulties and prosocial scales of the SDQ fell slightly short of the .70 cut-off for acceptable internal

consistency, and therefore results pertaining to these scales were interpreted with caution.

[Table 2]

Concurrent validity. Pearson correlations were used to test the associations between Compassionate

Self-Responding and Uncompassionate Self-Responding with the measures of psychosocial wellbeing and

resilience (see Table 3). Following the recommendations of Goodman et al. (2010) for low-risk and/or general

population samples, results from the SDQ were analysed via three-subscales: internalising problems (10 items

tapping into emotional and peer-problem symptoms), externalising problems (10 items tapping into conduct and

hyperactivity symptoms) and the prosocial scale (5 items). Correlations coefficients below .3 were interpreted as

small or weak, from .3 to .5 as moderate and above .5 as strong (Cohen, 1988).

[Table 3]

As seen in Table 3, Compassionate Self-Responding was significantly related to all the comparison

indicators in the expected directions, with the exception of internalising problems. Compassionate Self-

Responding showed the strongest positive associations with resilience and satisfaction with life. Weaker

associations were revealed with positive affect and prosocial behaviour. The strongest negative association was with externalising problems, while a weaker association was revealed with negative affect.

Meanwhile, Uncompassionate Self-Responding was significantly related to all comparison indicators in the expected directions, with the exception of prosocial behaviour. It showed moderate positive associations with internalising problems, externalising problems, and negative affect. The strongest associations in the negative direction were with satisfaction with life and resilience. Weaker negative associations were found with positive affect.

Factor Analysis of SCS-P-PR

Following the same steps as the SCS-P, a series of exploratory factor analyses were conducted to examine the factor structure of the parent report (i.e., the SCS-P-PR). The sample size ($n = 108$) just reached the cut-off recommended by commonly applied 'rules of thumb' for this type of analysis (e.g., MacCallum, et al., 1996). Inspection of communalities revealed that they fell in the range of .6 (mean = .62), and thus the size of this sample was not considered problematic (Field, 2009). Indeed, results from the Kaiser-Meyer-Olkin Measure of Sampling Adequacy revealed that this data set fell into the 'superb' range (KMO = .92); Bartlett's Test of Sphericity also indicated that the data met the minimum standards for this type of analysis (χ^2 (300) = 2278.39, $p = < .001$).

Multivariate outliers amongst cases were screened for by calculating Mahalanobis distance. Probability calculations indicated that 14 cases had values < 0.05. However, visual inspection of individual cases revealed that the cause of outliers was not due to incorrectly entered or measured data, and therefore a decision was made to retain all cases. Following suggestions of Field (2009) and Tabachnick and Fidell (2013), item distributions were also examined to screen for severe nonnormalities. None of the SCS-P-PR items showed severe non-normal distribution (all variables = skewness < 1; kurtosis < 1.3). Visual examination of scatterplots revealed that the assumption of linearity was also met (Tabachnick & Fidell, 2013).

Correlations between variables were examined via visual inspection of the correlation matrix. For each variable, there were at minimum several Pearson correlations exceeding $r = .30$, and at least half of the correlations met the .01 level of significance. Multicollinearity and singularity were also checked via visual inspection of the correlation matrix. There were no variables perfectly correlated, and no variable correlated highly ($> r = .80$) with multiple other variables. The absence of multicollinearity was confirmed via examination of both the tolerance and variance inflation factors (VIF): tolerance levels were greater than .10 for each item, and VIF levels were less than 10 for each item.

Sensitivity Analysis. Study sensitivity was determined using correlation. The sample size ($n = 108$), given a two-tails alpha of .05 and power of .80, was sensitive to detect an effect size of at least $r = .27$ (Schönbrodt & Perugini, 2013).

Method of factor extraction. An exploratory factor analysis using the maximum likelihood method and oblique (Promax) rotation was conducted to see if factors were correlated. As a strong positive correlation was revealed between factors (.70), results from the Promax rotation were retained; in these conditions they are considered more likely to be reliable than those obtained after orthogonal rotation (Field, 2009). Orthogonal factor scores also have the advantage of parsimony when predicting important criteria (Goldberg, 2006) and encourage the development of factor markers that are maximally unrelated to each other (Saucier, 2002).

Examination of the scree plot (Figure 2) in conjunction with the results of a parallel analysis suggested a two-factor solution was the best fit for the data. As Item 25 did not load significantly on either factor, it was removed prior to a subsequent factor analysis. Following the deletion of item 25, with an eigenvalue of 12.79, Factor 1 explained 53.3% of the variance. Factor 2 had an eigenvalue of 2.22 and explained 9.25% of the variance. The eigenvalue of the first factor not retained was 1.09. After rotation, Factor 1 and Factor 2 comprised items from the negative and positive elements of self-responding respectively. No cross loadings exceeded .36. The percentage of unexplained variance was attributed to the high heterogeneity of the SCS-P-PR's items. Loadings of factors on variables, communalities, and percent of variance and covariance are shown in Table 4.

[Figure 2]

[Table 4]

Factor analyses of subscales. To examine the structure of Factor 1 and Factor 2 individually, two further maximum likelihood factor analyses were conducted. Specifically, these analyses aimed to determine if the self-judgment, isolation, and over-identification components emerged within Factor 1, labelled 'Uncompassionate Self-Responding', and the self-kindness, common humanity and mindfulness components emerged within Factor 2, labelled 'Compassionate self-responding'. Results from the KMO Measure of Sampling Adequacy revealed that the data sets each fell into the 'superb' range (Uncompassionate Self-Responding KMO = .90; Compassionate Self-Responding KMO = .91; Bartlett's Test of Sphericity also indicated that the data sets met the minimum standards for this type of analysis (Uncompassionate Self-Responding = $\chi^2 (78) = 1000.34$, $p = < .001$; Compassionate Self-Responding = $\chi^2 (55) = 960.02$, $p = < .001$). Mirroring the results from the SCS-P, examination of the scree plots in conjunction with the results of a parallel

analysis suggested one-factor solutions for both factors. A one-factor solution (eigenvalue = 7.63) accounted

for 58.72% of the variance in the factor Uncompassionate Self-Responding. The eigenvalue of the first factor

not retained was .99. Similarly, a one-factor solution (eigenvalue = 7.13) accounted for 64.81% of the variance

in the Compassionate Self-Responding factor. The eigenvalue of the first factor not retained was .84. For

Uncompassionate Self-Responding, all item factor loadings ranged between.55 and .83. For Compassionate

Self-Responding, item factor loadings ranged from .69 to .86. Further analyses examined the reliability and

validity of the two factors Compassionate Self-Responding and Uncompassionate Self-Responding separately.

Reliability. As displayed in Table 5, Cronbach's alphas for both the Uncompassionate Self-

Responding factor and the Compassionate Self-Responding factor indicated very good internal consistency.

Examination of the item-total statistics table revealed that that removal of any item would result in a lower

Cronbach's alphas, and thus all items were retained for both factors.

[Table 5]

Concurrent validity. Pearson correlations were used to test the associations between parent-reported

Compassionate Self-Responding and Uncompassionate Self-Responding with indicators of children's

psychosocial wellbeing and resilience. As displayed in Table 6, Compassionate Self-Responding was

significantly related to all the comparison indicators in the expected directions. Compassionate Self-

Responding showed moderate positive associations with positive affect, resilience, and prosocial behaviour,

respectively. Strong negative associations were revealed between Compassionate Self-Responding and

internalising problems on the SDQ; moderate associations were evident between Compassionate Self-

Responding and negative affect, and externalising problems on the SDQ, respectively. Meanwhile,

Uncompassionate Self-Responding was also significantly related to all the comparison indicators in the expected

directions. Uncompassionate Self-Responding showed strong negative associations with positive affect, and a

moderately strong association with resilience and prosocial behaviour. Strong associations in the positive

direction were revealed with negative affect, and internalising problems, while a moderate association was

found with externalising problems.

[Table 6]

Cross-scale congruence. To compare the congruence between each of the factor loadings elicited from

the SCS-P and the SCS-P-PR respectively, Tucker's phi was calculated to compare measurement invariance

(Lorenzo-Seva & Berge; 2006). Tucker's phi coefficients were calculated by means of an Excel spreadsheet

containing the formula. Both factors (i.e., Compassionate Self-Responding and Uncompassionate Self-

responding) achieved Tucker's phi coefficients of .92, exceeding accepted thresholds and therefore indicative of good cross-scale congruence between the SCS-P and SCS-P-PA (Lorenzo-Seva & Berge, 2006).

Cross-informant correlations. Within the child-report data set, there were only 65 cases that could be successfully matched with their parents' data. Sensitivity analysis using a Pearson correlation revealed that the current sample size ($n = 65$), given a two-tails alpha of .05 and power of .80, was still sensitive enough to detect an effect size of at least $r = .34$ (Schönbrodt & Perugini, 2013).

Pearson correlations were used to test the associations between Compassionate Self-Responding and Uncompassionate Self-Responding as self-reported by preadolescent children on the SCS-P and the parents on the SCS-P-PR. For the purposes of comparison, the Pearson correlations between the child and parent-reported data obtained via the SDQ, CYRM, PANAS are also provided in Table 7. Correlation coefficients below r .30 were interpreted as small or weak, r .30 to .50 are deemed moderate, and correlations above r .50 are strong (Cohen, 1988).

[Table 7]

Moderate correlations were observed between the SCS-P and SCS-P-PR scales for both the Compassionate Self-Responding and the Uncompassionate Self-Responding subscales. While caution must be exercised when making inferences from this small data set, the findings are considered noteworthy, particularly given that the analysis was sensitive to detect only moderate effect sizes ($r > .34$). Indeed, the correlations between the SCS-P and SCS-P-PR were stronger than those observed between the measures of positive affect on the PANAS-C and PANAS-P, and the SDQ child and parent forms. Meanwhile, non-significant correlations were observed between child and parent-reported resilience on the CYRM/CYRM-PMK, negative affect on the PANAS, and externalising problems on the SDQ; this was likely due to the sample's modest size.

Gender differences. To assess if there were significant gender differences in the levels of self-compassion and mindfulness reported in children 9-12 years, t-tests were conducted to compare the scores of boys and girls on the measures of mindfulness, compassionate self-responding, uncompassionate self-responding. No significant differences between boys and girls were found $t(191) = .872$, $p = .38$; $t(191) = .-1.356$, $p = .18$. Means and standard deviations across gender are presented in Table 8.

[Table 8]

Discussion

The aim of this study was to develop, pilot, and provide preliminary evidence of validation for two new measures of self-compassion for children in their preadolescent years (i.e., aged 9-12 years)—a self-report

measure (SCS-P) and a parent-reported measure (SCS-P-PR)—to enable accurate and consistent evaluation of this construct. The 'tween' years were chosen in favour of a younger, or broader age-range of children, to capture those within a similar range of cognitive and language abilities. In Australia, this age bracket covers children in their last two years of primary school (i.e., Years 5 and 6), and thus face an impending transition to high school. Therefore, self-compassion may hold particular relevance to this cohort, who are likely to require support to successfully navigate this transition. It was envisioned that development of a parent-perspective scale could supplement the children's self-report and thus provide a more detailed, and holistic, assessment of the self-compassion construct.

Prior to the development of the scales in this study, only two prior studies had aimed to investigate self-compassion in children under 12 years using different adaptations of Neff's SCS (2003b): Stolow et al. (2016) and Sutton et al. (2017). However, as neither study employed a clear method of selecting, adapting, or rewording their scale items, nor checked for item comprehension within their child samples prior to scale administration, these differing measures were not deemed suitable to explore self-compassion within the preadolescent age group. This study developed two new scales following a similar process to the S-SCS-A (Muris et al., 2016), using Neff's (2003b) SCS as a template. The SCS-P-PR became the parent-perspective measure, utilising the same order and wording of items to facilitate comparison with the child-reported measure. This process was consistent with the development of other informant-rated scales, such as the PANAS-C-P and SDQ parent form.

Exploratory factor analysis was the chosen method of factor analysis for both the SCS-P and SCS-P-PR, as exploratory methods are necessary when prior research is scarce, and/or when piloting new measures (Patil et al., 2008). As little is known regarding the conceptualisation of self-compassion within cohorts of preadolescent children, and the two measures were being piloted for the first time, an exploratory method of factor analysis was deemed more favourable than confirmatory methods.

Preliminary results were promising and indicative of both measures having sound psychometric properties. From a maximum likelihood method, a two-factor solution emerged as the best fit to the data for both measures. In both cases, the same items loaded onto the same two factors: one representing the 'positive' facets of self-compassion (i.e., the items designed to tap into self-kindness, common humanity and mindfulness), and the other representing the 'negative' facets of self-compassion (i.e., self-judgement, isolation and over-identification). The two factors of the SCS-P and SCS-P-PR, named Uncompassionate Self-Responding and Compassionate Self-Responding, showed strong internal consistencies (Cronbach's alphas

ranging from .88 to .95). Furthermore, each factor displayed concurrent validity; significant correlations in the expected directions were found between Uncompassionate Self-Responding and Compassionate Self-Responding with indicators of psychosocial wellbeing (i.e., positive and negative affect, satisfaction with life, internalising difficulties and externalising difficulties, prosocial behaviour) and resilience on both the SCS-P and SCS-PR, respectively.

Further preliminary analyses revealed that convergent validity was evident between the SCS-P and the SCS-P-PR. Congruence between the factors elicited on both the self-report and parent-report versions of the scale were confirmed with strong Tucker's phi coefficients (Lorenzo-Seva & Berge, 2006). Despite only a small sample of matched-pairs ($n = 65$), significant, moderate correlations ($.30 < r < .40$) were found between child self-reported and parent-reported Uncompassionate Self-Responding and Compassionate Self-Responding. This is an important preliminary finding. Firstly, it supports prior research that has suggested that self-compassion is a trait observable by others (e.g., Neff & Beretvas, 2013). Secondly, it indicates the viability of collecting potentially valuable supplementary data regarding a child's self-compassion from an informant. In fact, the method of triangulation of data from multiple informants is frequently recommended by researchers interested in studying psychological phenomena as a method to enhance assessment (Snow et al., 2005). Meta-analyses have revealed that cross-informant agreement in the field of child and adolescent research is approximately $r = .30$ (Achenbachet al., 1987). While this modest correlation could be interpreted as reflecting low reliability between informants, Achenbach et al. (1987) argued that different informants validly contribute different information: "low correlations between informants may indicate that the target variables differ from one situation to another, rather than that the informants' reports are invalid or unreliable" (p. 213).

As no prior research had assessed the convergent validity between child self-report and parent-rated self-compassionate responding, this study addressed an important gap within the current knowledge. Future research could assess more precisely what the parent-report 'adds' to the assessment of self-compassion, beyond that supplied via self-report. Indeed, according to the Self-Other Knowledge Asymmetry Model (Vazire, 2010), there are many personality constructs that others can describe better than the self. Where self-compassion lies on this continuum of self vs other-knowledge remains to be investigated.

The findings of this preliminary validation study suggests that both the SCS-P and SCS-P-PR scales possess sound psychometric properties; if future studies can replicate these findings, both scales can be used by researchers as reliable and valid measures of self-compassion in children aged 9-12 years. The finding that scores on SCS-P and SCS-P-PR are best represented by two distinct factors (Compassionate Self-Responding

and Uncompassionate Self-Responding) rather than six subscales or one overarching construct, is contrary Neff's (2003b) recommended practice of subscale analysis and/or combining the positive and negative items of the SCS into a total self-compassion score. Rather, the finding that items on the SCS-P and SCS-P-PR formed two orthogonal constructs is consistent with a growing body of literature suggesting that the positive and negatively worded items of the SCS form two theoretically distinct factors (e.g., Brenner et al., 2017, Costa et al. 2015; Castilho et al. 2015; López et al. 2015). This finding is also consistent with the results of factor analyses reported by Stolow et al., (2016) and Sutton et al., (2017), who similarly administered adapted versions of the SCS to children under 12 years. It is inconsistent, however, with the findings of Neff et al. (2020), in their recent validation of the SCS-Y. Rather than two distinct constructs, Neff and colleagues found support for a bi-factor solution, whereby self-compassion could be reliably represented as six subscale scores, or via calculation of a single score representative of a "self-compassionate mindset" (p. 11). While Neff et al. (2020) recommend future researchers to adopt a single score approach, they do concede that an alternative is to calculate two composite scores, composed of the three positive and three negative subscales scores respectively, as a "heuristic to understand the mechanisms of action entailed by self-compassion" (p. 11).

There is related argument in the literature (Muris, 2015; Muris et al., 2016a; Muris et al., 2016b; Muris & Petrocchi, 2017), that posits all negatively worded items should be excluded from measures of self-compassion. According to these researchers, the negative items represent indicators of psychological maladjustment, such as anxiety and depression, and therefore are not relevant to the 'true' protective nature of self-compassion. Muris et al. (2016a) does not include any of the negatively worded items in their adolescent measure of self-compassion (S-SCS-A). However, the results from this study suggest that it is important to measure the negative aspects of self-compassion in addition to the positive aspects; there is evidence that both tendencies can operate independently within preadolescent children, and are not mutually exclusive (i.e., they are not two ends of the same scale). The findings from this study do, therefore, offer support for Neff's (2003b, 2016a, 2016b) assertions that both the negative and positively worded items on the SCS tap into important elements relevant to the assessment of an individual's tendencies to relate to themselves during times of suffering, and thus warrant inclusion on measures of self-compassion. The recognition of both positive, and negative, aspects of self-responding is also consistent with the Buddhist teachings on self-compassion (Kraus & Sears, 2008). However, the current findings indicate that compassionate self-responding and negative-self responding (as measured with the SCS-P and SCS-P-PR, respectively) operate as two theoretically and psychometrically distinct constructs rather than two inherent components of the self-compassion construct.

This study extends the knowledge regarding self-compassion's relationship with other psychological constructs in children. Firstly, findings from the current study support those of Sutton et al. (2017), who similarly found that both positive and negative aspects of self-compassion were significantly associated with satisfaction with life and positive affect in their sample of children aged 8-12 years. Neff et al. (2020) also found the three 'positive' self-compassion subscales to correlate positively with life satisfaction, and the three negative subscales correlated in the negative direction, in their sample of children in Grades 6, 7 and 8 (mean age 12.2). Together, these studies suggest that for preadolescents, positive ways of responding to the self (i.e., with kindness, connection, and acceptance), may lead to more objective evaluations, and a greater appreciation of life's experiences in general. Conversely, a negative mode of self-responding during times of hardship may entail preadolescents becoming over-identified with negative internal and external experiences. This in turn would reduce positive affect and satisfaction with life in general. It is recommended that future research adopt a qualitative approach to attain a deeper meaning of the nature of theses associations in preadolescents.

This study also revealed self-compassion's relationship with other aspects of psychosocial wellbeing in preadolescence. While associations between self-compassion and psychosocial wellbeing were expected based on robust findings in adult and adolescent populations (Neff et al., 2007a; Neff & McGehee, 2010; Neff et al., 2007b), the current study was the first to examine, and reveal, that compassionate self-responding was inversely associated with measures of preadolescent externalising difficulties (i.e., conduct and hyperactivity problems), while uncompassionate self-responding was positively associated with these difficulties. One possible interpretation of this finding is that the adoption of a self-compassionate mode of responding during difficult times reduces the likelihood of getting 'caught-up' in uncomfortable thoughts and feelings that may otherwise lead to disruptive, externalised behaviour. It is recommended that future researchers explore the nature of the relationship between self-compassion and psychosocial difficulties in greater detail, as this has the potential to inform programs aimed specifically at reducing these problematic behaviours in preadolescents.

Another key finding elicited from this study was that preadolescents' compassionate self-responding (as reported on both the SCS-P and SCS-P-PR) was positively related to resilience, while uncompassionate self-responding was associated with resilience in the negative direction. This finding was expected based on previous research with adult and adolescent populations (e.g., Bluth et al., 2018; Neff & McGehee, 2010), and is in line with the recent findings of Neff et al. (2020), who reported correlations with resilience in the same directions for their positive and negative subscale scores. An interpretation of these findings is that responding to the self with compassion during times of hardship can provide both an internal source of resilience (e.g., via

improved self-concept; Alvord & Grados, 2005), and an external source of resilience (e.g., via social competence, Alvord & Grados, 2005) for preadolescents. Conversely, engaging in negative ways of self-responding during challenging times will inevitably decrease resiliency resources; this may occur at the individual level (e.g., by over-identifying with negative thoughts or feelings) and/or external levels (e.g., via social isolation, causing detachment from resilience resources that may be present in the family or community). Further research exploring the relationships between styles of self-responding and resilience is required to replicate and validate these interpretations.

Finally, it is noted that gender was not found to be related to preadolescents' compassionate self-responding or uncompassionate self-responding in this study. Prior research with children has reported mixed results in this regard (Stolow et al., 2016; Sutton et al., 2017; Neff et al., 2020). It may be the case that preadolescent children display reduced gender differences than when compared with their adolescent counterparts (see Bluth & Blanton, 2015), as gender identity is less pronounced during this phase of development.   Future research with larger samples is needed to clarify the nature of gender differences in the preadolescent age-range.

This study has several limitations, including modest sample sizes and reliance on convenience sampling methods. Notably, mothers were greatly over-represented in the sample of parents completing the SCS-P-PR; future validation studies will need to focus on collecting father's perspectives to redress this balance. Another limitation of this study was the employment of a cross-sectional, rather than longitudinal, design. Therefore, causal pathways in the models presented cannot be determined. Longitudinal studies are recommended to future researchers. In addition, while efforts were made to employ a large, diverse sample of Year 5 and Year 6 students from the Darling Downs Region of Queensland, the effects of clustering bias cannot be ruled out and therefore generalisability is limited. Replication of this study's findings across larger and more diverse samples of children and youth is vital, as self-compassion is likely to be interpreted differently depending on culture, race, ethnicity, and social economic status.

Measurement factors may have also influenced the results of the factor analyses of the SCS-P and SCS-P-PR. While phrasing half of a scale's items in a positive direction, and half in a negative direction can help control for respondent response bias (Comrey, 1988), it has also been revealed that positively and negatively worded items frequently load onto distinct factors (see Spector et al., 1977). Indeed, research conducted with children from Grades 4–6 (i.e., aged 8-12 years) revealed that children were more likely to agree with an item that was positively-worded than they were to disagree with an item that was negatively worded (Benson &

Hocevar, 1985). However, following the evolutionary arguments of Gilbert et al. (2011) it can be contended that it is theoretically logical that the positive and negative aspects of self-responding should be measured separately, as they are related to different affective and physiological systems. Therefore, to rule out measurement artefacts as influencing the current results, future research should apply different methods of balancing item phrasing to correct for this potential form of response bias.

To surmise, the availability of psychometrically sound instruments is essential to enable accurate and consistent measurement of the self-compassion construct in preadolescent populations. This research has provided preliminary evidence supporting the viability of both the SCS-P and SCS-P-PR scales as valuable contributions to the toolbox of measures available for the assessment of self-compassion in preadolescents. As the first known parent-reported measure of self-compassion, the SCS-P-PR can be used to both supplement and enhance the assessment of this construct within the preadolescent age-range. Indeed, the development and validation of the SCS-P and SCS-P-PR marks an important step towards improving the screening and measurement of self-compassion within this cohort. It is noted, however, that validation is an ongoing process. Therefore, further research using the SCS-P and SCS-P-PR across more diverse populations is essential to ensure that the promising results from this preliminary study can be replicated. Furthermore, the SCS-P-PR offers a means to both educate and include parents in the assessment of their child's style of self-responding and enable the accurate identification of both protective features and vulnerabilities to support the mental health and development of preadolescents. Indeed, future research based on qualitative research methods may provide a deeper understanding of how compassionate self-responding, and uncompassionate self-responding, interact and influence mental health and wellness in Australian youth. Establishing how the different aspects of self-compassion protect and/or promote vulnerability towards psychosocial wellbeing and resilience in preadolescent children is a critical direction for future research.

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Table 1

SCS-P Item-factor Loadings Before and After Rotation for Exploratory Factor Analysis

Item description	Rotated (Varimax)		
	Factor 1	Factor 2	h^2
20. *When I am upset, I am hard on myself*	**0.79**		0.63
7. *When things go wrong, I am really hard on myself*	**0.79**		0.65
24. *When I fail at something important to me, I feel like I' m all alone*	**0.73**		0.53
1. *I am hard on myself when I'm not good at something*	**0.68**		0.47
5. *When I fail at something important to me, I feel like I'm not good enough*	**0.67**		0.46
10. *I get frustrated or upset about parts of my personality that I don't like*	**0.64**		0.41
15. *I get down on myself when I see things about me that I don' t like*	**0.62**		0.39
19. *When something upsets me I get carried away with my feelings*	**0.62**		0.39
23. *I over-react when things go wrong*	**0.58**		0.36
4. *My weaknesses make me feel very different from everyone else*	**0.57**		0.32
2. *When I'm feeling sad, I can't stop thinking about everything that's wrong*	**0.56**		0.31
12. *When I' m feeling sad, I feel like most kids are happier than I am*	**0.53**		0.29
17. *When things are going bad, it feels like everyone else has it easier*	**0.52**		0.28
9. *When I feel like I'm not good enough, I remind myself that everyone feels that way sometimes*		**0.74**	0.54
14. *When I fail at something, I remind myself that everybody fails sometimes too*		**0.73**	0.53
22. *When I make a mistake, I remind myself that it's ok to make mistakes*		**0.71**	0.52

16. *When I fail at something really important, I remind myself that it is not the end of the world*		**0.67**	0.45
21. *When I am feeling down, I can still think about positive things*		**0.64**	0.44
13. *When something bad happens, I try to focus on the good things as well*		**0.61**	0.42
6. *When I feel sad, I remind myself that I am not the only person in the world feeling like this*		**0.60**	0.37
11. *When I'm going through a very hard time, I'm nice to myself*		**0.57**	0.36
3. *When I have problems, I remind myself that everybody has problems from time to time*		**0.56**	0.31
25. *I am kind towards those things about myself I don't like*		**0.56**	0.32
18. *I am kind to myself when I feel unhappy*		**0.54**	0.31
8. *When something upsets me I try to stay calm*		**0.50**	0.27
Trace	5.55	4.78	10.32
% of variance	22.20	19.12	41.27

Note. Variables are ordered and grouped by size of loading post-rotation to facilitate interpretation. Coefficients lower than .4 are left blank. Percentage variance is post-rotation; because there were 25 measured variables, percentage of variance is trace divided by 25, times 100. h^2 = communality coefficient. Factor 1: 'Uncompassionate Self-Responding'; Factor 2: 'Compassionate Self-Responding'.

Table 2

Means, Standard Deviations and Cronbach Alphas of Study Variables - Preadolescent Data

Variable (Scale)	*M*	*SD*	*Cronbach's α*
Compassionate Self-Responding (SCS-P)	37.71	9.61	.88
Uncompassionate Self-Responding (SCS-P)	36.85	11.40	.90
Psychosocial wellbeing indicators			
Positive affect (PANAS-PA)	10.54	4.91	.86
Negative affect (PANAS-NA)	17.87	4.61	.88
Internalising difficulties (SDQ)	7.55	3.60	**.55**
Externalising difficulties (SDQ)	7.06	3.70	.75
Satisfaction with life (SWLS-C)	17.83	4.83	.83
Prosocial behaviour (SDQ)	7.54	2.00	**.68**
Resilience (CYRM)	47.43	9.54	.89

Note. Cronbach's alphas under .70 are highlighted in bold. Compassionate Self-Responding scores can range from 12-60. Uncompassionate Self-Responding scores can range from 13-65. PANAS-PA = Positive and Negative Affect Scale for Children-Positive Affect subscale; scores can range from 5-25. PANAS-NA = Positive and Negative Affect Scale for Children-Negative Affect subscale; scores can range from 5-25. SDQ = Strengths and Difficulties Scale; scores can range from 25-75. SWLS-C = Satisfaction with Life Scale-Child; scores can range from 5-25. CYRM = Child and Youth Resilience Measure; scores can range from 12-60.

Table 3

Pearson Correlations of SCS-P Subscales with Self-Report Measures of Psychosocial Wellbeing and Resilience

Variable (Measure)	Compassionate Self-Responding	Uncompassionate Self-Responding
Psychosocial wellbeing indicators		
Positive affect (PANAS-PA)	.19**	-.25**
Negative affect (PANAS-NA)	-.14*	.33**
Internalising problems (SDQ)	-.12	.42**
Externalising problems (SDQ)	-.31**	.42**
Prosocial behaviour (SDQ)	.19**	-.10
Satisfaction with Life (SWLS-C)	.35**	-.35**
Resilience (CYRM)	.32**	-.33**

Note. *p < .05; **p < .01. SCS-P = Self-Compassion Scale-Preadolescent; PANAS-PA = Positive and Negative Affect Scale for Children-Positive Affect subscale; PANAS-NA = Positive and Negative Affect Scale for Children-Negative Affect subscale; SDQ = Strengths and Difficulties Scale; SWLS-C = Satisfaction with Life Scale-Child; CYRM = Child and Youth Resilience Measure.

Table 4

SCS-P-PR Item-Factor Loadings Before and After Rotation for Exploratory Factor Analysis

Item description	Rotated (Promax)		
	Factor 1	Factor 2	h^2
1. They are hard on themselves when they are not good at something	**0.91**	-	.62
4. Their weaknesses make them feel like they are very different from everyone else	**0.87**	-	.60
5. When they fail at something important to them, they feel as if they are not good enough	**0.85**	-	.70
7. When things go wrong, they are really hard on themselves	**0.80**	-	.69
15. They get down on themselves when they see things about themselves that they don't like	**0.77**	-	.51
24. When they fail at something that's important to them, they feel like they are all alone	**0.76**	-	.60
2. When they are feeling sad, they fixate on everything that's wrong	**0.70**	-	.62
23. They over-react when things go wrong	**0.63**	-	.64
17. When things are going bad, they feel like everyone else has it easier	**0.61**	-	.59
10. They get frustrated or upset about parts of their personality that they don't like	**0.58**	-	.30
12. When they are feeling sad, they feel most kids are happier than they are	**0.56**	-	.32
20. When they are upset, they are hard on themselves	**0.55**	-	.54
19. When something upsets them, they get carried away with their feelings	**0.46**	-	.56
9. When they feel like they are not good enough, they remind themselves that everyone feels that way sometimes	**0.42**	-	.84

6. When they feel sad, they remind themselves that they are not the only person in the world feeling that way	-	**1.05**	.70
21. When they are feeling down, they can still think about positive things	-	**1.02**	.71
3. When they have problems, they are able to see that everybody has problems from time to time	-	**0.76**	.54
11. When they are going through a very hard time, they are nice to themselves	-	**0.75**	.59
16. When they fail at something really important, they remind themselves that it is not the end of the world	-	**0.75**	.74
8. When something upsets them, they try to stay calm	-	**0.72**	.48
14. When they fail at something, they remember that everybody fails sometimes too	-	**0.70**	.71
22. When they make a mistake, they remind themselves that it's ok to make mistakes	-	**0.62**	.58
18. They are kind to themselves when they feel unhappy	-	**0.59**	.49
13. When something bad happens, they try to focus on the good things as well	-	**0.51**	.58
Trace	10.93	10.65	14.25
%	45.54	44.38	59.38

Note. Variables are ordered and grouped by size of loading to facilitate interpretation. Coefficients lower than .40 are left blank. Percentage variance is post-rotation; because there were 24 measured variables after Item 25 was deleted, percentage of variance is trace divided by 24, times 100. h^2 = communality coefficient.

Table 5

Means, Standard Deviations and Cronbach alphas of Study Variables - Parent Data

Variable (Scale)	*M*	*SD*	*Cronbach's α*
Compassionate Self-Responding (SCS-P-PR)	36.95	9.47	.95
Uncompassionate Self-Responding (SCS-P-PR)	39.86	10.86	.94

Note. Cronbach's alphas under .70 are highlighted in bold. Compassionate Self-Responding scores can range from 12-60. Uncompassionate Self-Responding scores can range from 13-65. SCS-P-PR = Self-Compassion Scale-Preadolescent, self-report; scores can range from 25-125.

Table 6

Correlations of SCS-P-PR Subscales with Parent-Reported Measures of Psychosocial Wellbeing and Resilience

Variable (Measure)	Compassionate Self-Responding	Uncompassionate Self-Responding
Positive affect (PANAS-P-PA)	.44**	-.51**
Negative affect (PANAS-P-NA)	-.49**	.61**
Internalising problems (SDQ)	-.51**	.60**
Externalising problems (SDQ)	-.49**	.47**
Prosocial behaviour (SDQ)	.46**	-.41**
Resilience (CYRM PMK)	.37**	-.40**

Note. $*p < .05$; $**p < .01$. SCS-P-PR = Self-Compassion Scale-Preadolescent-Parent; PANAS-P-PA = Positive and Negative Affect Schedule for Children-Parent-Positive Affect subscale; PANAS-P-NA = Positive and Negative Affect Schedule for Children-Parent-Negative Affect subscale; SDQ = Strengths and Difficulties Scale; CYRM PMK = Child and Youth Resilience Measure-Person Most Knowledgeable.

Table 7

Cross-Informant Correlations of Self- and Parent-reported Measures of Self-Compassion, Psychosocial

Wellbeing and Resilience

Variable (Self-Report / Parent-Report)		Pearson Correlation
Self-Compassion	Compassionate Self-Responding	.30**
(SCS-P / SCS-P-PR)	Uncompassionate Self-Responding	.40**
Indicators of Psychosocial Wellbeing	Positive affect	.21*
(PANAS-C / PANAS-P)	Negative affect	.20
(SDQ / SDQ parent-report)	Internalising problems	.32**
	Externalising problems	.03
	Prosocial behaviour	.22*
Resilience (CYRM / CYRM PMK)	Resilience	.01

*Note. *p < .05; **p < .01. SCS-P = Self-Compassion Scale-Preadolescent; SCS-P-PR = Self-Compassion

Scale-Preadolescent-Parent; PANAS-C = Positive and Negative Affect Scale for Children; PANAS-P = Positive

and Negative Affect Scale for Children-Parent; SDQ = Strengths and Difficulties Scale; CYRM PMK = Child

and Youth Resilience Measure-Person Most Knowledgeable.

Table 8

Means and Standard Deviations for Compassionate Self-Responding and Uncompassionate Self-Responding

across Gender

Measure	Gender			
	Boys		Girls	
	Mean	*SD*	Mean	*SD*
Compassionate Self-Responding	38.37	10.23	37.02	9.27
	35.26	10.78	37.23	11.77

Figure 1.

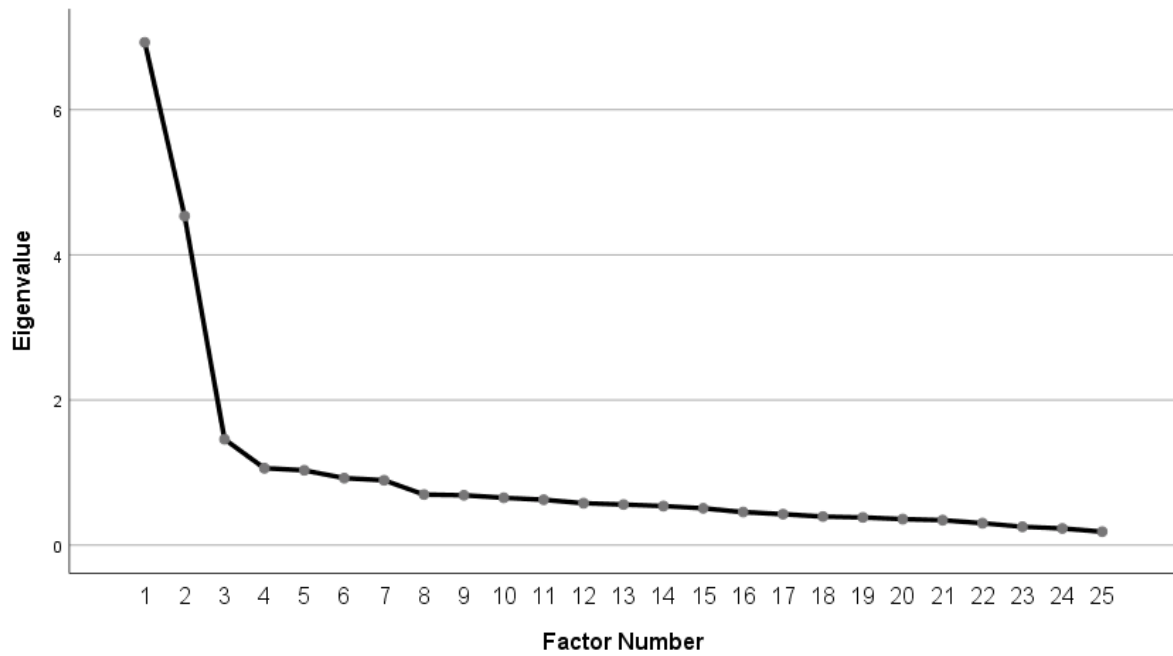*Scree plot showing distribution of factors by their eigenvalues for the SCS-P*

Figure 2.

Scree plot showing distribution of factors by their eigenvalues for the SCS-P-PR