



Perceived Parenting Style and Adolescent Self-Compassion: A Longitudinal, Within-Person Approach

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Abstract

Objectives Caregiver responses are important in shaping how children, and later adolescents, engage in their own self-compassionate responding and uncompassionate self-responding. However, longitudinal research exploring the relationship between parenting style and adolescent self-compassion is limited. We examined the degree to which psychologically controlling and supportive parenting styles were linked to changes in compassionate self-responding (CSR) and uncompassionate self-responding (USR), both contemporaneously and longitudinally. We further explored the extent that any effects were heterogeneous: Does parenting influence self-compassion for some adolescents but not others?

Method We measured CSR, USR, parental support, and parental psychological control in a group of 2596 adolescents annually over 4 years (Grades 9 to 12 inclusive, $M_{\text{ages}} = 14.65$ (T1) to 17.73 (T4) years).

Results The multi-level modelling analysis of individual relationships between parenting and self-compassion revealed relatively independent effects of perceived parenting on CSR and USR respectively. Individual changes in supportive parenting were more strongly associated with changes in CSR than with USR, and within-person changes in psychologically controlling parenting were more strongly associated with USR than with CSR. Further, the strength of these relationships was heterogeneous, with parenting having a larger effect on some than others. Longitudinally, controlling parenting predicted the development of USR.

Conclusions Overall, the link between parenting and adolescent self-compassion significantly varied, with some adolescents reporting a large change in self-compassion in years when parenting changed, and some reporting little to no change in self-compassion in years when parenting practices changed. The present study therefore highlights the importance of parenting in understanding self-compassion and the need for further research that seeks to identify factors that moderate the link between parenting and self-compassion.

Preregistration This study is not preregistered.

Keywords Self-compassion · Adolescent · Parenting style · Longitudinal · Ideographic research · Within-person

Self-compassion has emerged as an important construct in the study of adolescent mental health and psychopathology (Marsh et al., 2018; Neff & McGehee, 2010). Characterised as a style of relating to oneself in times of distress that is supportive, accepting, and non-judgemental, self-compassion is

conceptualised as an adaptive way of self-relating that fosters psychological adjustment and boosts wellbeing (Gilbert, 2015). Self-compassion also involves the capacity to pay attention to suffering, coupled with a motivation to alleviate it (Neff & Germer, 2022). In particular, adolescent populations appear to benefit from higher levels of self-compassion, which have been linked to increased adolescent wellbeing (Galla, 2016) and perceived social connectedness (Kelly & Dupasquier, 2016), as well as decreased depression, anxiety, and stress symptoms (Marsh et al., 2018).

What explains the positive association between self-compassion and psychological adjustment? Gilbert (2014) theorised that self-compassion activates an emotion regulation system associated with safety, affiliation, and care.

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Activation of this soothing system facilitates the regulation of difficult emotions, changing an individual's affective state and reducing psychological distress. An under-developed soothing system, or ongoing self-relating that activates emotion regulation systems associated with threat, is thought to be related to psychopathology and low self-compassion (Gilbert, 2014). Relatedly, emotion regulation has been identified as a mechanism of change explaining the positive link between self-compassion, adaptive coping, and mental health (Diedrich et al., 2017; Inwood & Ferrari, 2018).

Social relationships, especially those with primary caregivers, are thought to play a key role in developing an individual's soothing system and therefore their ability to respond to personal distress in a compassionate way (Gilbert, 2014). In support of this idea, individuals who reported experiencing warmth and connectedness in early caregiver relationships also reported being more capable of self-compassion (Kelly & Dupasquier, 2016). Further, a study that explored attachment experiences, self-criticism, and self-reassurance found that recall of parental rejection and overprotection was associated with higher self-criticism, and recall of parental warmth was associated with self-reassurance in times of distress (Irons et al., 2006). These findings reinforce Gilbert's (2015) notion that understanding parent–child relationships is important in understanding self-compassion in adolescence.

Parental social support and psychological control may be of particular relevance to understanding the development of self-compassion in adolescence. Parental social support, defined as positive attitudes and behaviours from parents, captures the parenting domain encompassing motivation to care, be empathetic, and be altruistic (Tardy, 1985). Parental social support has been associated with reduced risk of adolescent depression (Rueger et al., 2016) and increased psychological wellbeing (Ciarrochi et al., 2017). Receiving social support has also been found to increase feelings of being cared for and connected to others, which may activate the soothing emotion regulation system thought to be implicated in self-compassion (Gilbert, 2015; Kelly et al., 2012).

Parental psychological control, on the other hand, captures parenting practises that invalidate and manipulate adolescents' emotional experience (Barber, 1996). Psychologically controlling parenting practices include shaming, guilt induction, and conditional approval (Romm et al., 2020). It is important to note that parental psychological control is distinct from behavioural control, which is a more adaptive type of parenting that involves behaviour regulation through rule-setting and monitoring (Soenens & Vansteenkiste, 2010). Decades of research shows that parental psychological control impacts negatively on adolescent psychological and emotional wellbeing (Barber et al., 2005; Chyung et al., 2022). Of particular relevance to self-compassion research, parental psychological control has been linked to increased

adolescent self-criticism (Bleys et al., 2018) and chronic guilt (Gorodyansky, 2015), which have both been found to be negatively associated with self-compassion (Naismith et al., 2019; Röthlin et al., 2023).

In the context of understanding the influence of parenting style on adolescent self-compassion, it is important to acknowledge that how to best measure and conceptualise self-compassion remains an active dialogue in the field. Self-compassion is generally measured using the Self-Compassion Scale (SCS) which is comprised of three compassionate self-responding (CSR) components (self-kindness, common humanity, and mindfulness) and three uncompassionate self-responding (USR) components (self-judgement, isolation, and over-identification) (Neff, 2003). Specifically, self-kindness is being supportive and kind to oneself, rather than harsh and judgemental (Neff, 2003). Common humanity is appreciating that distress is a shared, human experience, not something experienced in isolation (Neff, 2003). Lastly, mindfulness is responding to uncomfortable emotions with detached awareness, rather than over-identification (Neff, 2003). Findings that the CSR and USR components of the SCS predict psychopathology outcomes differently have led researchers to suggest that CSR and USR are better conceptualised as two distinct constructs and should be examined separately (Muris & Otgaar, 2020). For example, Muris et al. (2019) found that USR, but not CSR, has been found to predict negative cognitive responses to daily problems, Hardman et al. (2023) showed that USR but not CSR moderated the association between perceived social rank and depression in a sample of young adults with first episode psychosis (Hardman et al., 2023), and Carreiras et al. (2021) showed that the SCS components of isolation, self-judgement, and mindfulness, but not other components, were significant predictors of borderline personality symptoms in a non-clinical sample of adolescents. Further, recent research also showed that individuals can be high in both CSR and USR, or low in both (Ferrari et al., 2022, 2023; Marsh et al., 2023). Based on these findings, it is likely that CSR and USR have distinct and different causes. Existing research suggests that positive social support may facilitate compassionate self-responding (Gilbert, 2015) and coercive, psychologically controlling parenting may increase harsh or critical self-responding (Bleys et al., 2018); however, whether different parenting styles could be independently associated with CSR and USR has not yet been examined.

Past research examining the relationship between parenting style and adolescent CSR and USR is largely correlational, the dynamics in these relationships across time remains largely unexplored. Hamaker and Wichers (2017) argued that statistical modelling needs to separate the between (“trait”) and within (“state”) variance in longitudinal studies. Both forms of variance are important to consider when understanding the influence

of parenting on adolescent styles of relating; between-person variance reflects the stable differences in parenting and self-compassion found between adolescents over time. That is, we would expect that some adolescents will experience their parents as generally supportive over time, whereas others will experience them as generally unsupportive. Within-person variance, on the other hand, reflects the extent to which parenting and self-compassion co-vary for each individual adolescent. Between and within sources of variance are independent (Nezlek, 2001), and thus, conclusions based on between-person associations between parenting and self-compassion may not apply to within-person associations between parenting and self-compassion. Adding another dimension of complexity, within-person change processes may be non-ergodic, meaning that group averages may not apply well to individuals (Ciarrochi et al., 2022). For example, while increases in supportive parenting may generally be associated with increases in CSR (a “fixed effect”), there may be some adolescents who are relatively uninfluenced by such supportive parenting, and others who are strongly influenced. A fixed effect refers to a consistent trend or pattern between two variables which applies to most, if not all, individuals in a sample. Research exploring children’s susceptibility to environmental influences supports this notion, showing that there is significant variability in children’s sensitivity, and therefore response to, different parenting practices (Kennedy, 2013; Zhang et al., 2023). Understanding this variability will allow interventions to be targeted at adolescents who are most likely to benefit. Thus, in the present study, we also examined the extent to which fixed effects apply consistently across individual change processes.

Our hypotheses were as follows: first, we hypothesised that the strength of the association between USR, CSR, and parenting differs from person to person, that is, any within-person effects established would be stronger for some individuals than for others. More specifically, we hypothesised that supportive parenting practices such as using praise, listening, and providing help when needed will be associated with CSR but not USR. In contrast, using psychologically controlling practices such as telling a young person how to feel, blaming them for family problems, and criticising them for past mistakes will be associated with USR but not CSR. Second, we hypothesised that adolescents who reported higher psychologically controlling parenting would report higher USR (but not necessarily lower CSR), whereas adolescents who reported higher supportive parenting would report higher CSR (but not necessarily lower USR). Third, we hypothesised that this relationship would arise at both the within- and between-person levels. Finally, we hypothesised that parenting style

was more likely to be an antecedent to future CSR and USR rather than a consequence of these variables.

Method

Participants

Participants were 2593 high school students who participated in at least one of four waves of annual data collection (Grades 9 to 12 inclusive). The numbers of participants present at testing in Time 1, Time 2, Time 3, and Time 4 were 2081, 2020, 1736, and 1643, respectively. The mean age of participants at Time 1 and Time 4 was 14.65 years ($SD=0.45$) and 17.73 ($SD=0.46$), respectively. At Time 1, 49.21% of participants identified as female. Participants attended 17 Catholic schools located in Sydney and the Illawarra region of New South Wales, encompassing both regional and urban areas. Attrition in later years of the study was largely due to students leaving secondary education to enter vocational training or seek employment.

To estimate the power to detect an effect in our random intercept models reported below, we used the R package *powRCLPM* (Mulder, 2023). Taking a conservative approach, we assumed a small cross-lagged, longitudinal effect ($\beta = 0.10$). We expected contemporaneous effects to be larger than this. Based on past research using this dataset (Donald et al., 2022), we assumed that variables would show moderate stability (0.60), correlate moderately at each wave (0.30), and have an intra-class correlation (ICC) of 0.50. The ICC refers to the degree to which individuals in the same group resemble each other. We ran 1000 replications with sample sizes varying between 1643 (the smallest sample size in a given wave) and 2593 (the total number of participants). We found that we had power of 0.83 to detect an effect with the smallest sample and power of 0.95 with the largest sample.

Procedure

Ethics approval was granted by the Australian Catholic University Human Research Ethics Committee (HE10/158), the Diocesan Schools Authority, and schools. The current study analysed data from the Australian Character Study (ACS; Australian Research Council grant number DP140103874), a large-scale longitudinal research project that measured a range of psychological constructs in four waves of data collection over 4 years. This large dataset has been used to address research questions relating to different psychological constructs to those reported here, such as Donald et al. (2022) who examined the longitudinal relationship between adolescent’s compulsive internet use and social support.

Participants were invited to participate in a longitudinal study of “Youth Issues”. Participants, parents, and schools provided informed consent prior to completing the questionnaire each year. Participants were informed in the information and consent forms that they could discontinue the study at any time without consequence. Administration of the questionnaires, in the form of paper booklets, took place during regular classes under the supervision of a research assistant. Students completed the questionnaires independently, without any discussion, and were debriefed following administration with any questions answered by the research assistant. To enable the matching of each participant’s data over years of the study, a unique code was created for each participant.

Measures

Self-Compassion Scale Self-compassion was measured using the 12-item short form of the Self-Compassion Scale (SCS-SF) which uses 5-point Likert scale items (1 = *almost never* to 5 = *almost always*) (Raes et al., 2011). The SCS-SF has a near-perfect correlation with the 26-item SCS (Raes et al., 2011) and was used due to administration time constraints. Compassionate subscales include Self-Kindness (e.g. “I try to be understanding and patient towards those aspects of my personality I don’t like”), Common Humanity (e.g. “I try to see my failings as part of the human condition”), and Mindfulness (e.g. “When something upsets me, I try to keep my emotions in balance”). The Uncompassionate subscales include Self-Judgement (e.g. “I’m disapproving and judgmental about my own flaws and inadequacies”), Isolation (e.g. “When I fail at something that’s important to me, I tend to feel alone in my failure”), and Over-Identification (e.g. “When I fail at something important to me, I become consumed by feelings of inadequacy”). Negative items are reverse scored. The SCS has been validated for use in adolescent populations (Cunha et al., 2016), and in the current study, both the Compassionate subscale ($\alpha = 0.78$; McDonald’s $\omega = -0.81$) and Uncompassionate subscale ($\alpha = 0.88$; McDonald’s $\omega = 0.88$) demonstrated high reliability.

Student Social Support Scale Supportive parenting was measured using 7 “parent” items of the Student Social Support Scale (Malecki & Elliott, 1999). Due to limitations in time given to administer the questionnaire, the 7 parental support items with the highest factor loading were used (see Malecki & Elliott, 1999, for factor analysis results). Participants rated social support from parents using a 6-point Likert scale (1 = *never*, 6 = *always*). Example items include “My parents make suggestions when I’m uncertain”, and “My parents listen to me when I’m mad”. In the current study, the total score demonstrated high reliability ($\alpha = 0.95$; McDonald’s $\omega = 0.95$).

Psychological Control Scale – Youth Self Report Psychologically controlling parenting was assessed using the 8-item Psychological Control Scale – Youth Self-Report (Barber, 1996). Participants are asked to rate the extent to which items described their parents using a 3-point Likert scale (1 = *not at all like them* and 3 = *a lot like them*). Example items are “My parents bring up my past mistakes when they criticise me”, and “My parents blame me for other family members’ problems”. In the current study, the total score demonstrated high reliability ($\alpha = 0.92$; McDonald’s $\omega = 0.85$).

Data Analyses

All analyses were conducted in R (R core team, 2013). Based on recommendations for individual differences research, effect sizes of 0.10, 0.20, and 0.30 were considered small, typical, and large respectively (Gignac & Szodorai, 2016).

Missing Value Analysis We conducted multi-level analyses to examine if there was a relationship between degree of missingness and our key variables.

Main Analysis: Multi-level Modelling of Changes in Parenting and Self-compassion As yearly observations were nested within-person, multi-level modelling and the NLME package were used to model multi-level structure (Pinheiro et al., 2022). Given research suggesting gender differences in self-compassion, year level and gender were controlled for in all analyses (Yarnell et al., 2019). A control for autoregressive error structures was applied to all multi-level models.

We sought to decompose the influence of parenting on self-compassion into two effects: one reflecting the within-person association between parenting and self-compassion and one reflecting the between-person association between parenting and self-compassion. Therefore, we created two predictor variables from the original parenting variables (support and psychological control). These predictor variables included a stable between-person mean for each person across the years of the study (“trait”) and the deviation from this mean representing within-person change (“state”). Our key hypotheses focused on the within-person slope of self-compassion regressed on state supportive and controlling parenting. This decomposition of within-person change in parenting from between-person differences allows our estimates of parenting effects to be interpreted as “pure” within-person effects (Bolger & Laurenceau, 2013).

To identify the best model, we tested a series of progressively more complicated models, focused on either CSR or USR. The simplest, Model 1, estimated random intercepts (individuals vary in self-compassion) and the fixed effects of covariates (gender and year) and the state and trait variables of parental support and parental psychological control.

Model 2 was identical to Model 1 however also estimated psychologically controlling parenting as both a random and fixed effect. Model 3 did the same with supportive parenting. Models 2 and 3 allowed us to test the extent that the fixed effect adequately described the relationships at the individual level. If Models 2 and 3 were significantly different from Model 1, this would suggest that we could not assume parenting had the same effect on all adolescents. Our final Model 4 included both psychologically controlling and supportive parenting as fixed and random effects. Multi-level modelling uses a principled approach to missing data that uses all data for parameter estimation (Enders, 2010). This procedure was employed for all models.

Final Analysis: Clarifying the Directionality of Relationships Our final analysis examined the extent that parenting was an antecedent to future CSR and USR and or a consequence of these variables. We created lagged versions of all key variables, and then used multi-level modelling to predict a particular outcome using the lagged version of the outcome and the lagged version of the predictors. For example, we predicted CSR at Time $T+1$ with CSR, parenting support, and psychological control at time T . Thus, the dependent variable can be conceptualised as the residual change from time T to time $T+1$. All models were controlled for gender, year, and the autocorrelation structure. This resulted in the testing of four models: two models predicting CSR and USR, and two models predicting supportive and psychologically controlling parenting.

Results

Missing Value Analysis

Given the size of the dataset, we conducted a missing values analysis to understand potential patterns in the data points that were missing. There were small, significant relationships between less missingness and CSR (standardised beta $\beta=0.07$, standard error $SE=0.01$, $t=4.74$, $p<0.001$),

parental support ($\beta=0.06$, $SE=0.02$, $t=3.91$, $p<0.001$), and lower parenting control ($\beta=-0.05$, $SE=0.02$, $t=3.62$, $p<0.001$). There was no relationship between missingness and USR ($\beta=0.02$, $SE=0.02$, $t=1.20$, $p=0.22$). As controlling for missingness in our key Model 4 had no meaningful effects on the model estimates, no estimation method for missing data was applied.

Preliminary Analysis

Descriptive statistics and correlations between study variables are presented in Table 1, showing key between-person or “trait” effects. Averaging across time and participants, adolescents who reported experiencing more supportive parenting generally reported higher CSR and lower USR, whereas adolescents who reported experiencing more psychologically controlling parenting generally reported higher USR and lower CSR.

Mean Changes in CSR and USR Over Time

CSR and USR varied significantly over the duration of the study (Fig. 1). On average, CSR remained relatively stable over the first 3 years, with a significant increase reported by students in Grade 12 compared to Grade 9 ($t(4453)=1.92$, $p<0.05$). Average USR varied more over time, with a linear increase from Grades 9 to 10 ($t(4456)=6.04$, $p<0.001$), and Grades 9 to 11 ($t(4456)=7.49$, $p<0.001$), followed by a slight decrease in Grade 12 ($t(4456)=4.73$, $p<0.001$).

To explore individual variability in how much adolescents reported CSR, USR, and parenting practices, within-person variance was calculated. Within-person variance ($1-ICC$) was 0.59 for CSR, 0.50 for USR, 0.43 for parental psychological control, and 0.40 for parental support. Parenting variables had slightly lower within-person variability compared to self-compassion variables. This indicates more consistency in reported parenting variables compared to USR and CSR. There was adequate variability to proceed with multi-level modelling analyses.

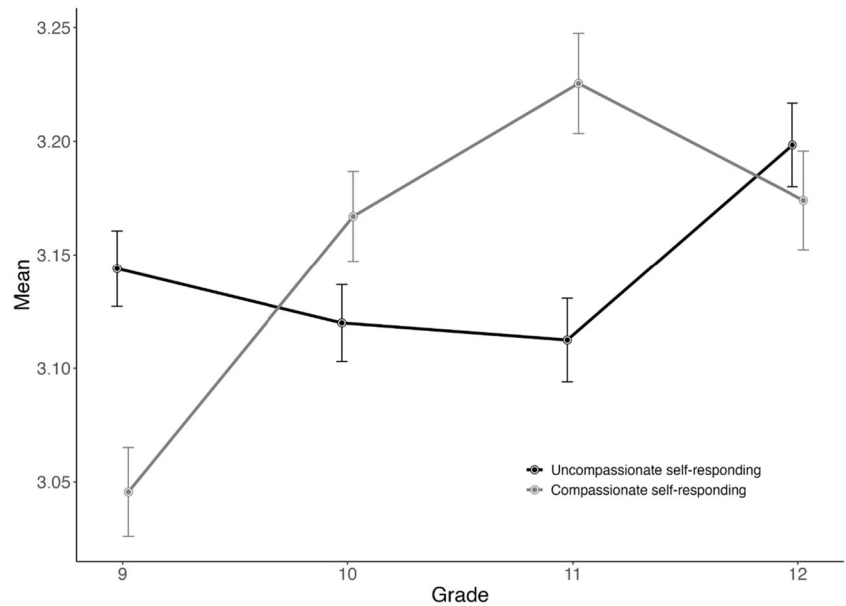
Table 1 Descriptive statistics and correlations (with confidence intervals) for study variables, averaged across 4 years (trait effects)

Variable	<i>M</i>	<i>SD</i>	1	2	3
1. Supportive parenting	4.52	1.13			
2. Psychologically controlling parenting	1.67	0.43	−0.59** [−0.61, −0.56]		
3. Compassionate self-responding	3.12	0.62	0.38** [0.34, 0.41]	−0.26** [−0.30, −0.23]	
4. Uncompassionate self-responding	3.14	0.75	−0.22** [−0.25, −0.18]	0.34** [0.31, 0.38]	−0.18** [−0.21, −0.14]

Note. *M* and *SD* represent mean and standard deviation, respectively. Values in square brackets represent the 95% confidence interval for each correlation. Confidence intervals are a range of possible correlations that could have caused the sample correlation (Cumming, 2015)

** $p<0.01$

Fig. 1 The development of compassionate and uncompassionate self-responding across high school. *Note.* Error bars represent standard error of the mean



Main Analysis: Multi-level Modelling of Changes in Parenting and Self-Compassion

In our analysis, both Model 2, which estimated parental psychological control as a random and fixed effect, and Model 3, which estimated parental support as a random and fixed effect, were significantly different from Model 1 (Table 2). Consistent with our first hypothesis, these results suggest that psychologically controlling and supportive parenting have variable effects on adolescent self-compassion. Assuming that psychologically controlling parenting has different effects on participants' CSR and USR (Model 2) improved the model by 3.40% and 2.24% respectively. Both of these effects were in the small to medium effect size range (Gignac & Szodorai, 2016). Assuming that supportive parenting has different effects on participants' CSR and USR (Model 3) improved the model by 2.94% (small to medium effect size) and 5.61% (medium to large effect size) respectively. Overall, the effect of both psychologically controlling and supportive parenting was found to have significantly different

effects on different individuals, suggesting that the strength of the association between self-compassion and parenting differs from person to person. A summary of these results is shown in Table 2.

Mixed effects from Model 4, which explored the effect of trait and state parenting on CSR and USR, are shown in Table 3. Consistent with our second hypothesis, trait parental support was found to be more strongly associated with CSR, with larger effect sizes, and more weakly associated with USR, with smaller effect sizes. The opposite relationship was found for parental psychological control, which was found to be more strongly associated with USR and weakly associated with CSR. This means that, on average, participants who reported more supportive parenting also reported higher CSR; however, participants who reported less supportive parenting did not, on average, report higher USR. In contrast, participants who reported more psychologically controlling parenting also reported higher USR; however, participants who reported less psychologically controlling parenting did not, on average, report higher CSR.

Table 2 Summary of MLM statistics

Model	df	Compassionate self-responding				Uncompassionate self-responding			
		LogLik	LRatio Test	r^2	$r^2 \Delta$	LogLik	LRatio Test	r^2	$r^2 \Delta$
Model 1: Baseline: Parenting has same effect	12	−9112.11	NA	0.38	NA	−8843.27	NA	0.46	NA
Model 2: Controlling parenting has different effects	14	−9097.23	29.75**	0.41	0.03	−8833.47	19.60***	0.48	0.02
Model 3: Supportive parenting has different effects	14	−9090.31	43.60**	0.41	0.03	−8789.42	107.70***	0.52	0.06
Model 4: Controlling and supportive parenting have different effects	17	−9082.66	58.90**	0.43	0.05	−8785.06	116.42**	0.53	0.07

Note. ** $p < 0.01$. *** $p < 0.001$

Table 3 Predicting USR and CSR as a function of state and trait supportive and psychologically controlling parenting (fixed effects from Model 4)

	Compassionate self-responding			Uncompassionate self-responding		
	β	<i>SE</i>	<i>t</i>	β	<i>SE</i>	<i>t</i>
State parental support	0.14	0.01	12.62**	−0.03	0.01	−3.21**
Trait parental support	0.29	0.02	15.29**	−0.02	0.02	−1.25*
State parental psychological control	−0.03	0.01	−3.02**	0.08	0.01	7.92**
Trait parental psychological control	−0.05	0.02	−2.89**	0.27	0.02	14.06**

Note. * $p < 0.05$. ** $p < 0.01$

Consistent with our third hypothesis, a similar pattern of results was found for state effects, albeit with smaller effect sizes overall. State supportive parenting was associated strongly with CSR (moderate effect size) and weakly with USR (small effect size). State controlling parenting was associated strongly with USR and weakly with CSR. This means that in years when adolescents reported higher parental support than usual, they generally reported higher CSR than usual (but not lower USR than usual), and in years when adolescents reported significantly higher parental psychological control, they generally reported higher USR than usual (but not lower CSR than usual).

This pattern of results captured the relationship between supportive and psychologically controlling parenting, and CSR and USR, for most individuals. However, the effects established were heterogeneous, as shown in Figs. 2 and 3. For example, some individuals reported little change in CSR in years when their parents were particularly supportive. Other individuals reported that their CSR increased much higher than their baseline in years where their parents were particularly supportive. Put another way, these individuals'

CSR seemed to be particularly sensitive to parental support. Similar variability in changes in USR associated with shifts in psychologically controlling parenting was found.

Final Analysis: Clarifying the Directionality of Relationships

Our fourth hypothesis, that parenting style was more likely to be an antecedent to future CSR and USR rather than a consequence of these variables, was partially supported. We found no evidence that supportive or psychologically controlling parenting predicted CSR ($\beta_{\text{support}} = 0.02$, $SE = 0.01$, $p = 0.11$; $\beta_{\text{control}} = -0.01$, $SE = 0.01$, $p = 0.77$). However, there was evidence that psychologically controlling parenting, but not supportive parenting, predicted USR ($\beta_{\text{support}} = -0.01$, $SE = 0.02$, $p = 0.47$; $\beta_{\text{control}} = 0.02$, $SE = 0.01$, $p = 0.02$). The reverse models showed no evidence that CSR or USR predicted supportive parenting ($\beta_{\text{USR}} = -0.02$, $SE = 0.03$, $p = 0.50$; $\beta_{\text{CSR}} = -0.02$, $SE = 0.01$, $p = 0.10$) or psychologically controlling parenting ($\beta_{\text{USR}} = -0.01$, $SE = 0.03$, $p = 0.67$; $\beta_{\text{CSR}} = 0.01$, $SE = 0.01$, $p = 0.31$).

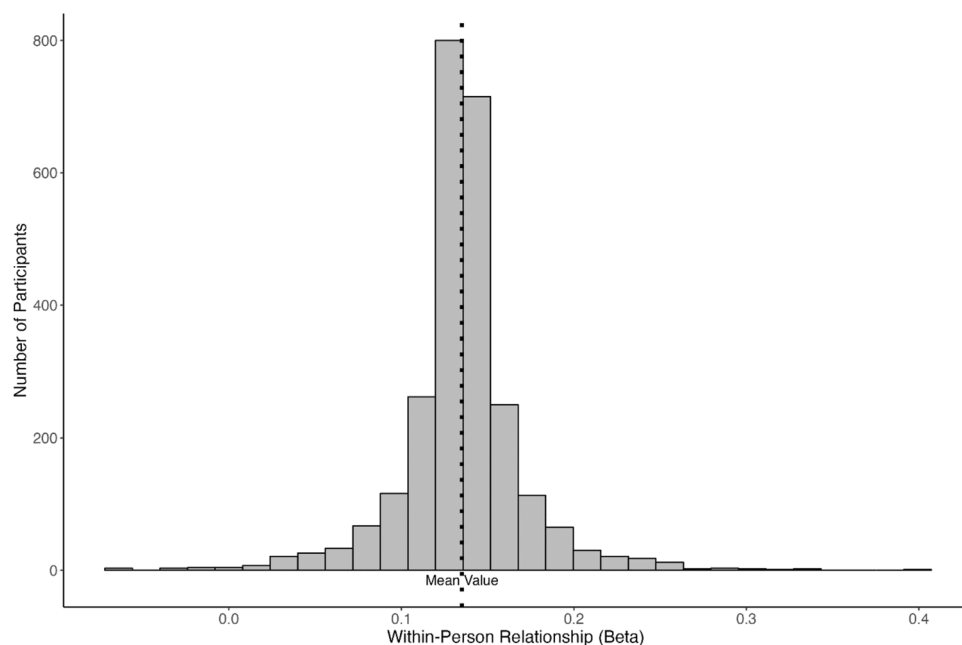
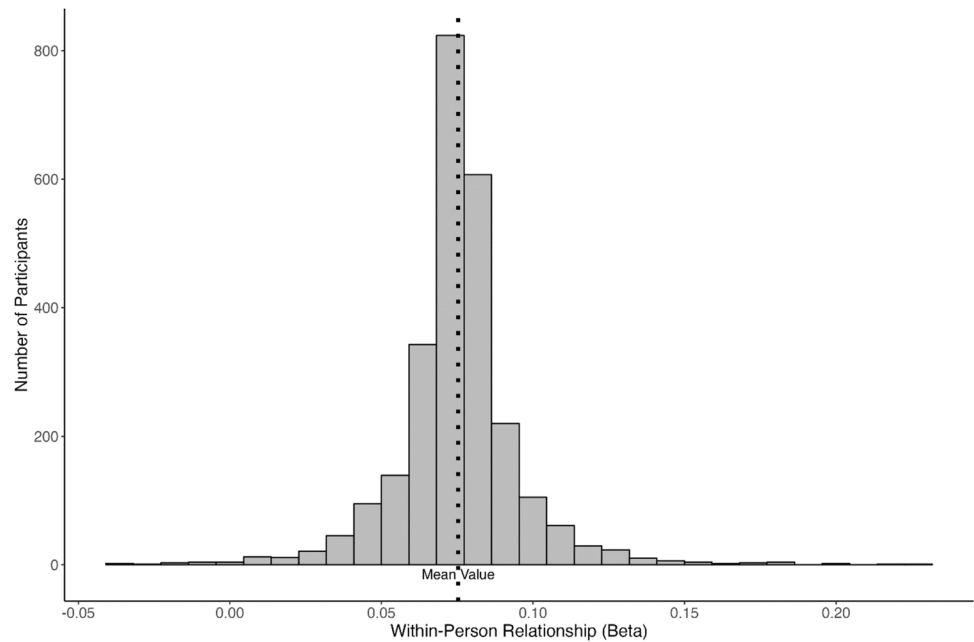
Fig. 2 Variability in the link (beta) between supportive parenting and compassionate self-responding. Note. The within-person relationship, or beta value, is the fixed within-person effect for each participant

Fig. 3 Variability in the link (beta) between psychologically controlling parenting and uncompassionate self-responding. *Note.* The within-person relationship, or beta value, is the fixed within-person effect for each participant



Discussion

The overarching aim of the present study was to gain a deeper understanding of the relationship between supportive and psychologically controlling parenting and compassionate self-responding style in adolescence. Consistent with our first hypothesis, results suggested that supportive and psychologically controlling parenting styles affect CSR and USR differently. Changes in supportive parenting were strongly associated with changes in CSR but weakly associated with changes in USR. In contrast, changes in psychologically controlling parenting were associated strongly with changes in USR but weakly with changes in CSR. This relationship arose both at the within- and between-person levels, meaning that there was a close link between psychologically controlling parenting and USR (but not CSR) when we examined how responses given by the same adolescent changed over time (within level), and when comparing responding given by different adolescents at the same time (between-persons level). Further, we found meaningful variation in these effects. Both supportive and psychologically controlling parenting had differential effects on adolescent CSR and USR, having a relatively large effect on some participants, but little to no effect on others.

Previous research reported that parenting styles characterised by affiliation and care lead to higher rates of compassionate self-responding (Moreira et al., 2018). Specifically, adolescent self-compassion and mindfulness seemed to develop when a parent–child relationship was characterised by affection and self-awareness. Consistent with these past findings, our results showed that, on average, adolescents who reported more supportive parenting

also reported engaging in higher levels of CSR. In addition, when supportive parenting increased in a given year, CSR also increased (reflective of the “state” effect, meaning that supportive parenting and CSR both fluctuated for each individual adolescent). These findings complement research conducted in high school students in Turkey and their mothers, who reported a link between self-compassion and parenting practices that facilitate social connection, including warmth (Temel & Atalay, 2020). Interestingly, however, these participants did not report engaging in lower USR. Parental support was only weakly associated with USR in our sample of adolescents. To the best of our knowledge, no previous research has established this link, possibly due to the use of the SCS in a way that obscures the possibility of identifying it (Ferrari et al., 2022).

The same pattern, in reverse, was established for psychologically controlling parenting and USR. On average, participants who reported more psychologically controlling parenting also reported engaging in higher levels of USR, compared to a weaker link between psychologically controlling parenting and less CSR. The significance of this key finding lies in its non-bidirectionality. Put another way, this contradicts previous conceptualisations of self-compassion, as research using the SCS total score has generally assumed that a high score in the SCS captures “high self-compassion”, and a low score in the SCS captures “low self-compassion”. By combining CSR and USR into one score, the specific components of the SCS that may drive different effects are unable to be identified, which limits our understanding of the processes and causes for different components of self-compassion as conceptualised by the SCS. While previous research has linked various parenting

domains to self-compassion, including warmth (Kelly & Dumasquiere, 2016), and rejection (Pepping et al., 2015), it is difficult to draw parallels between these findings as it is unclear which SCS components these associations are driven by.

Why did supportive and psychologically controlling parenting associate relatively independently with CSR and USR respectively? A possible answer lies in Gilbert's (2014) conceptualisation that CSR is related to emotional safety and USR is related to emotional threat. CSR is connected to the soothing system, meaning it is easier to be compassionate, kind, and supportive to oneself when we are in a state of relaxed comfort and safety. In contrast, when our threat systems are triggered, our bodies and minds are hypervigilant and prepared to respond to a threat, and within this state, self-criticism is often a default cognitive thinking style that is triggered (Irons & Lad, 2017). It could be that for many adolescents, highly supportive parenting is associated with emotional safety, but a lack of supportive parenting does not create emotional threat. On the other hand, highly psychologically controlling parenting could be associated with emotional threat, but a lack of psychologically controlling parenting does not create emotional safety. This may explain why parental support seems to be more associated with CSR, and parental psychological control seems to be more associated with USR. Further research is needed to clarify this possibility; however, the specificity (and therefore increased usefulness) of this possible explanation illustrates the potential increased explanatory power that researchers could contribute to by using the SCS in a more nuanced way.

Consistent with our third hypothesis, a relatively independent relationship between supportive parenting and CSR, and psychologically controlling parenting and USR, was found both between- and within-person. The effect was stronger for between-person relationships, which may reflect the relative stability of parenting as a variable in general (Teuber et al., 2022). It may also reflect confounds with other time-invariant, unmeasured covariates, such as the stable aspects of family, culture, and personality. The within-person relationships, though smaller, are not affected by time-invariant covariates whether measured or not (Usami et al., 2019). Further, within-person relationships relate to aspects of parenting and self-compassion that change and thus are most relevant to implementing effective interventions (Hamaker & Wichers, 2017).

It is also important to acknowledge the heterogeneity of effects. While fixed effects captured the experience of most adolescents in our sample, an important finding of the present study is that fixed effects did not explain the relationship between parenting and self-compassion for many individuals. For some adolescents, an increase in perceived supportive parenting led to significantly higher reports of self-compassion, whereas for others, it had little to no effect. In other

words, within-person change processes were non-ergodic, meaning group averages did not apply well to individuals. This suggests that self-compassion, and how it manifests in adolescents, is not uniformly sensitive to parenting practices. Some adolescent's self-compassion was strongly influenced by parenting, and other's self-compassion was relatively independent from parenting. Variation in the effects of parenting on self-compassion is generally treated as error (Coffey et al., 2022); however, research showing differences in sensitivity to parenting supports the notion that this variation is meaningful and should be examined and understood (Zhang et al., 2023).

Adolescents reported higher CSR in years when they reported perceiving their parents as more supportive than usual, and vice versa for USR and parental psychological control. Our lagged analyses found evidence that parental psychological control predicted USR, but we did not find evidence that parental support predicted CSR. The null lagged results may indicate a lack of a causal connection but may also be due to the length of our lag missing true effects. We focused on yearly lags and administered measures at the end of each school year. For example, if a parent became more supportive during the year and, as a result, the young person developed more CSR days or weeks afterwards, then we might have missed the effect, given we measured at only a yearly interval. Future research is needed to measure daily parenting behaviour and daily experience of CSR and USR with high density measurement, for example daily diary studies, to clarify this result (Hayes et al., 2020).

The results from the present study have important practical and theoretical implications. Firstly, our results have implications for how self-compassion is conceptualised and therefore measured. Our data supports the notion that self-compassion is a set of dynamic and interrelating processes that are unique to each individual and are influenced by their context and the timeframe in which these processes are measured (Ferrari et al., 2022). In the present study, different parenting styles were associated relatively independently with CSR and USR, suggesting that self-compassion, as measured by the total score of the SCS scale, may capture a broader set of processes, each more unique, and with more independent causal factors, than initially thought. When using the SCS, rather than measuring self-compassion as a single factor, measuring self-compassion by using two or six factors of the SCS may facilitate a deeper understanding of these component-specific processes and causes.

Lastly, and most importantly, research looking at change at the individual level, and heterogeneity in effects, has important implications for clinical practice. While future research is needed to establish the present results, our data suggest that increases in supportive parenting may not reduce USR in adolescents, and changes in parenting may affect some young people more than others. While the "trait"

effects established in this study are interesting, they are less relevant to clinical practice as they capture stable effects, and what is interesting to clinicians and to individuals seeking to change are effects that are susceptible to change over time (Ciarrochi et al., 2022; Molenaar, 2004).

Limitations and Future Research

Although this study contributes to our understanding of self-compassion and parenting in adolescent populations, it has some limitations. First, both self-compassion and parenting practices were self-reported by adolescents in our study. While we sought to understand perceived parenting, making this approach the most appropriate, this may introduce bias into our results. Future research could incorporate parent-adolescent interaction observations, or parent self-reports, to explore if similar results are established. Second, some research suggests that within-person effects are best captured on shorter time scales (Orth et al., 2021). While longer time lags provide long-term developmental information, future research using shorter time lags, and with a higher number of measurement occasions, would provide valuable information regarding the relationship between self-compassion and parenting in adolescence (Hayes et al., 2020). Further potential method effects include concerns with the measurement tools; the brevity of the measures was important to reduce burden on the participants, but may raise the concern of their suitability for measuring complex psychological constructs.

In summary, the results of the present study support the value of an ideographic, process-based framework of intervention research for adolescent wellbeing. Further, by mapping out the heterogeneity in effects of parenting on adolescent self-compassion, we hope to encourage future research that explores why different adolescents respond differently to parenting, which other factors could be contributing to compassionate self-responding style, and which individuals will benefit from compassionate self-responding the most. These questions can all be answered with longitudinal, idiographic research that focuses on change at the level of the individual (Hayes et al., 2020). Such future research is likely to be useful given that our study found distinct trends in the relationship between parenting style and development of self-compassion in adolescence, but these trends did not uniformly hold for every individual in the same way. Thus, when understanding the relationships between perceived parenting style and self-compassion in adolescence, it is important to assess and focus on the uniqueness of a particular person at a particular time.

Author Contribution Sorcha Kaufmann: led the design of the study, co-led the analysis and interpretation of the data, and wrote the manuscript.

Joseph Ciarrochi: collected the original dataset in a larger study published elsewhere, collaborated with the design of the study, led the analysis of the data, and edited the final manuscript.

Keong Yap: collaborated with the design of the study, reviewed and edited the manuscript.

Madeleine I. Fraser: collaborated with the design of the study, and writing of the final manuscript.

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Data Availability Given the clinical nature of this underage sample, a deidentified copy of the dataset can be made available on reasonable request.

Declarations

Ethics Statement Ethics approval was granted by the Australian Catholic University Human Research Ethics Committee (HE10/158), the Diocesan Schools Authority, and schools. The current study analysed data from the Australian Character Study (ACS; Australian Research Council grant number DP140103874).

Informed Consent This study used an existing dataset and conducted secondary analysis. The original study secured informed consent from all participants.

Conflict of Interest The authors declare no competing interests.

Use of Artificial Intelligence AI was not used.

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