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Self-Concept Clarity in Adolescents and Parents: A Six-Wave Longitudinal and Multi-Informant Study on Development and Intergenerational Transmission

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The purpose of this study was twofold: (a) to disentangle patterns of change and stability in self-concept clarity (SCC) in adolescents and in their parents and (b) to examine processes of intergenerational transmission of SCC in families with adolescents. Participants were 497 Dutch families including the father (baseline $M_{age} = 46.74$), the mother (baseline $M_{age} = 44.41$), and their adolescent child (56.9% males; baseline $M_{age} = 13.03$). Each family member completed the SCC scale for six waves, with a one-year interval between each wave.

Latent growth curve analyses indicated that adolescent boys reported higher SCC than girls. Furthermore, fathers and mothers reported higher SCC than their children, and it increased over time. Indices of SCC rank-order stability were high and increased from T1 to T2, T2 to T3, etc., for each family member, especially for adolescents. Multivariate latent growth curve analyses and cross-lagged models highlighted a unidirectional transmission process, with fathers' and mothers' SCC influencing adolescents' SCC. This result was not moderated by adolescent gender. These findings indicate that self-concept clarity is transmitted from parents to children.

"If I live to be a hundred
And never see the seven wonders
That'll be alright [. . .]
Cause I know exactly who I am
I am Rosemary's granddaughter
The spitting image of my father [. . .]
It's all a part of me
And that's who I am"
—Jessica Andrews, 2001

INTRODUCTION

Achieving a clear sense of self is a challenging task as it implies finding a consistency and continuity among a number of different self-components related to multiple life domains and roles, such as education, work, relationships, and values (Baumeister, 1987). People may vary in the extent to which they form an integrated self-image, in which multiple dimensions and aspects are organized in a clear, coherent, and well-connected structure (Erikson, 1968). In this respect, the social context in which individuals live plays a crucial role, influencing the ways in which people address self-related issues (Cooley, 1908; James, 1890).

Although self-development is a main developmental task along the entire life span, it becomes particularly relevant in adolescence (Erikson, 1950, 1968). In fact, adolescents undergo multiple biological, cognitive, and social changes that trigger the reorganization of their self-concept (Meeus, 2011). Parents can provide their children with relational contexts that stimulate exploration of self-options and alternatives and foster enactment of meaningful commitments and identity choices (e.g., Årseth, Kroger, Martinussen, & Marcia, 2009; Scabini & Manzi, 2011).

While a consistent literature has examined how parenting practices and styles affect children's self-development (for a

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review see Dusek & McIntyre, 2006), the interplay of parental and adolescent self-development is poorly understood. The ways in which parents define themselves might provide a model for adolescents, exerting a direct influence on their self-concept formation. In this study, we addressed this issue pursuing for the first time two main research goals. First, we sought to disentangle patterns of change and stability in clarity of the self-concept both in adolescents and in their parents. Second, we examined processes of intergenerational transmission of clarity of the self-concept in families with adolescents.

SELF-CONCEPT CLARITY: WHAT IS IT AND WHY DOES IT MATTER?

Self-concept clarity (SCC) indicates the extent to which self-beliefs are clearly and confidently defined, internally consistent, and temporally stable (Campbell et al., 1996). SCC belongs to a class of constructs that focus on the structural aspects of the self-concept. This class is related to but distinct from content dimensions of the self-concept that include knowledge of individual characteristics, commitments, values, and purposes, as well as evaluation of this knowledge (e.g., Campbell, 1990; Campbell et al., 1996; Campbell, Assanand, & Di Paula, 2003).

The extent to which people hold stable and consistent views of themselves is related to their levels of adjustment and well-being (Bleidorn & Koedding, 2013; Campbell et al., 2003). In this respect, high levels of SCC have been found to be positively related to self-esteem (Belon et al., 2011; Campbell et al., 1996; Smith, Wethington, & Zhan, 1996; J. Wu, Watkins, & Hattie, 2010), perception of meaning in life (Bigler, Neimeyer, & Brown, 2001; Blazek & Besta, 2012), and affect balance (Bigler et al., 2001). In contrast, low SCC has been related to a number of problems including anxiety and depression (Schwartz, Klimstra, Luyckx, Hale, & Meeus, 2012; Smith et al., 1996; Van Dijk et al., 2014), loneliness (Frijns & Finkenauer, 2009), body dissatisfaction (Vartanian & Dey, 2013), and eating disturbances (Perry, Silvera, Neilands, Rosenvinge, & Hanssen, 2008). Thus, SCC is intertwined with psychosocial functioning.

Stability and Change in Self-concept Clarity

Campbell et al. (1996) theorized SCC as a type of individual difference that exhibits high levels of temporal stability, although it is susceptible to contextual influences. Thus, like other personality traits (Caspi, Roberts, & Shiner, 2005; Roberts, Walton, & Viechtbauer, 2006), though many aspects of the self-concept may be stable across time and situations, they also might mature over time and change in response to important life experiences and transitions (Light & Visser, 2013; Lodi-Smith & Roberts, 2010; Nezlek & Plesko, 2001). So, high levels of *relative stability* (i.e., the degree to which the relative differences among individuals remain the same over time) may go together with changes in *absolute stability* (i.e., the extent to which personality scores change over time; e.g., Santor, Bagby, & Joffe, 1997).

Adolescence is a key period for investigating patterns of change and stability in SCC. Indeed, it is during adolescence that the search for an enduring sense of "self" turns into a core developmental task (Erikson, 1950, 1968), stimulated by the biological (i.e., puberty), cognitive (i.e., the acquisition of the formal–abstract reasoning), and social (i.e., the starting of new interactions with peers and modifications in parent–adolescent relationships) changes that characterize this period of the life span (Lerner & Steinberg, 2009). Thus, during adolescence, individuals may rethink their previous sense of self and experiment with new roles and life plans to find a set of goals and values that fit their aspirations and potentials.

Extant evidence about patterns of change and stability in adolescent SCC is mainly based on few longitudinal studies on mean-level change and two-wave assessment of rank-order stability (which refers to the relative placement of individuals within a group and indicates whether people retain the same rank ordering on a certain dimension over time; Roberts & DelVecchio, 2000). Specifically, longitudinal studies (Schwartz et al., 2011; J. Wu et al., 2010) on mean-level changes documented that overall mean scores of adolescents' SCC slightly increase over the course of adolescence. In addition, indices of rank-order stability have been found to increase from early (12 years) to middle adolescence (16 years; Schwartz et al., 2012) and to be very high in secondary school (Schwartz et al., 2011; Van Dijk et al., 2014; J. Wu et al., 2010) and college (Campbell et al., 1996) students. Thus, in young people, slight changes in the absolute levels of SCC go together with high levels of relative stability.

In contrast, very little is known about patterns of stability and change of SCC in adolescents' parents. In fact, to the best of our knowledge, there are no longitudinal studies examining development of SCC in parents with adolescent children. To have some preliminary suggestions about how SCC might change in adolescents' parents we looked at studies examining general adult SCC. In two cross-sectional studies comparing SCC across multiple age groups, Lodi-Smith and Roberts (2010) found that SCC had a curvilinear relation to age such that SCC was higher in young adults and middle-aged participants and lower in adults over 60. These findings might suggest that SCC matures during adulthood as well. However, from the current state of the knowledge base it is not possible to make inferences about changes of SCC in adolescents' parents.

In the current study, we sought to further advance our understanding of patterns of change and stability in SCC in the parent–child system. Thus, we examined SCC in 13-year-old adolescents until they were 18 years old, with annual assessments. Notably, we explored for the first time how SCC developed in the same period in their parents (fathers and mothers) as well.

The Interplay of Parental and Adolescent Self-concept Clarity

Individuals form their self-concept in the interaction with significant others (e.g., Cooley, 1908; James, 1890). A wide literature has empirically examined how parental practices and styles impact adolescent self-concept (cf. Dusek & McIntyre, 2006). Specifically, cross-sectional studies indicated that adolescents' warm relationships with their parents contributed in positive ways to respondents' SCC (Davis, 2013; Perry et al., 2008; C. H. Wu, 2009). Similarly, longitudinal studies highlighted that the quality of communication with parents predicted higher adolescents' SCC (Frijns & Finkenauer, 2009; Van Dijk et al., 2014).

So far, convergent findings have indicated the importance of parental relationships for adolescents' SCC, while the effects of parents' SCC on adolescents' SCC have received less attention. Does the way in which parents define their selves have a direct influence on children's self-development? In this study, we addressed for the first time this research question by investigating whether and how intergenerational transmission of SCC occurs in families with adolescents.

Drawing from various theoretical frameworks we hypothesized a unidirectional process of influence, with parents' SCC having a positive effect on adolescents' SCC. This hypothesis is consistent with the principle that systems with a greater degree of stability are more likely to affect systems with a lower degree of stability (Asendorpf & Van Aken, 2003). Thus, adult parents, having a relatively more stable personality than adolescents (Denissen, Van Aken, & Roberts, 2011; Roberts & DelVecchio, 2000), are more likely to influence them than the other way around.

Additionally, our hypothesis is consistent with social learning theory (Bandura, 1977), which emphasizes the centrality of the concept of modeling for understanding the socialization process. Therefore, parents can have an effect in shaping adolescents' SCC acting as modeling agents (Wiese & Freund, 2011). In fact, parents with self-beliefs that are clearly and confidently defined, internally consistent, and temporally stable might represent for adolescents—who are searching for their identity—a more attractive model than parents with less clear self-beliefs.

Furthermore, the theoretical background linking personality characteristics and social competences can provide further insights on the transmission of SCC. Indeed, consistent with Erikson's (1950, 1968) psychosocial theory, individuals with a well-established self-concept become capable of committing to interpersonal relationships in a mature way and of generativity toward younger generations. In fact, high SCC is related to relationship satisfaction and commitment (Lewandowski, Nardone, & Raines, 2010) and to low interpersonal problems (Constantino, Wilson, Horowitz, & Pinel, 2006). Thus, parents with higher SCC are more likely to establish warm relationships with their children and to provide them with a relational context that can support their exploration of self-relevant issues and their process of commitment making.

Thus, drawing from this theoretical background we expected that parents with higher SCC can promote achievement of higher SCC in their children. We examined whether the impact of paternal and maternal SCC is comparable or differs across opposite-sex (father–daughter, mother–son) and same-sex (father–son, mother–daughter) dyads. One hypothesis is that paternal and maternal influences assume greater relevance in same-sex dyads (father–son, mother–daughter), since same-sex parents can be stronger modeling agents than opposite-sex parents (Bandura, 1986). However, empirical results indicate that the notion of high similarity in same-sex dyads has received mixed support (Russell & Saebel, 1997). For instance, Peterson and Roberts (2003) found that daughters show striking similarities in narrative style of salient and memorable life events with their mothers, but not with their fathers; whereas sons did not show strong resemblance in narrative style with either parent. More recently, Meeusen (2014) found no evidence of gender-specific mechanisms in the intergenerational transmission of environmental concerns. This mixed evidence points to the importance of further clarifying gender differences in transmission processes. Thus, in this study we investigated whether paternal and maternal transmission of SCC was similar for adolescent boys and girls.

The Present Study

In line with the literature reviewed above, the purpose of this study was twofold. First, we sought to examine development of SCC within the parent–child system. Thus, we examined stability and change in SCC of adolescents, their fathers, and mothers. Second, we sought to disentangle reciprocal associations between parental and adolescents' SCC. We expected a unidirectional effect, with mothers' and fathers' SCC predicting adolescents' SCC but not vice versa.

In addressing both aims, we controlled for gender effects across and within generations. The rationale for doing this is based on the fact that self-development may be different for adolescent boys and girls (girls may address self-relevant issues earlier than boys; Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2010) and that paternal and maternal influences may be different in same-sex and opposite-sex dyads. Thus, we tested for gender differences in indices of stability and change in SCC and we analyzed whether the pattern of associations of mothers' SCC and fathers' SCC with adolescents' SCC was moderated by adolescent gender.

METHOD

Participants

Data were drawn from the ongoing longitudinal RADAR—young study (Research on Adolescent Development and Relationships—younger cohort), a population-based prospective cohort study conducted in the Netherlands. Participants for the current study were 497 Dutch families including the father (baseline $M_{age} = 46.74$, $SD_{age} = 5.10$), the mother (baseline $M_{age} = 44.41$, $SD_{age} = 4.45$), and their adolescent child (56.9% males; baseline $M_{age} = 13.03$, $SD_{age} = 0.46$[1]), for a total of 1,491 participants. All participating adolescents were attending secondary school. Most adolescents were native Dutch (95%), lived with both parents (86%), and came from families classified as of medium or high socioeconomic status (89%).

Each member of the family unit provided information for six waves, with a one-year interval between each wave. Of the original sample, 425 families (86%) were still involved in the study at wave 6, and the average participation rate over the six waves was 90%. Results of Little's (1988) missing completely at random (MCAR) test yielded nonsignificant results for adolescents, χ^2 (840) = 750.36, χ^2/df = 0.89, $p = .988$, and for fathers, χ^2 (1020) = 1016.44, χ^2/df = 1.00, $p = .526$, indicating that their data were completely missing at random. For mothers, the MCAR test yielded a significant result, χ^2 (887) = 1066.06, χ^2/df = 1.20, $p = .000$; however, the χ^2/df value, which can be used to correct for sensitivity of the χ^2 to sample size, was low. Therefore, all 497 families were included in the analysis and for each informant we estimated missing data in SPSS using the EM procedure.

Procedure

The Medical Ethical Committee of Utrecht University Medical Centre (the Netherlands) approved the RADAR study. Before the start of the study, adolescents and their parents received written information about the study and they were all asked to provide their informed consent. Within each year of the study, trained research assistants made appointments for annual home visits. During these visits, participants completed a battery of questionnaires. Research assistants provided verbal instructions in addition to the written instructions that accompanied the questionnaires.

Measures

Self-concept Clarity

Each family member (adolescent, father, and mother) rated his/her own level of SCC by completing the Dutch version of the Self-Concept Clarity scale (SCC; Campbell et al., 1996). This measure consists of 12 items, scored on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is: "In general, I have a clear sense of who I am and what I am." Mean scale scores were computed so that higher scores indicate higher SCC. In the current study, Cronbach's alphas ranged across waves from .82 to .92 for adolescent, from .88 to .91 for maternal, and from .88 to .91 for paternal SCC, respectively. The Dutch version of the SCC scale has been used in prior longitudinal studies (e.g., Schwartz et al., 2012; Van Dijk et al., 2014), which reported high levels of internal consistency, comparable to those documented in the current study, and concurrent validity (e.g., showing that SCC is meaningful related to psychosocial functioning and adjustment).

Strategy of Analysis

To address our research questions, we conducted longitudinal statistical analyses in M*plus* 7.3 (Muthén & Muthén, 1998–2012), using the maximum likelihood robust (MLR) estimator. We tested the fit of various analytic models described below relying on multiple indices (Byrne, 2012): the comparative fit index (CFI) and the Tucker–Lewis index (TLI), with values higher than .90 indicative of an acceptable fit and values higher than .95 suggesting an excellent fit; and the root mean square error of approximation (RMSEA), with values below .08 indicative of an acceptable fit and values less than .05 representing a good fit.

Longitudinal Measurement Models

As a preliminary step, we examined longitudinal measurement invariance (Van de Schoot, Lugtig, & Hox, 2012). First, we tested for each informant (adolescent, father, and mother, as well as adolescent boys and girls separately) a measurement model with six SCC latent variables (one for each measurement wave) with three observed indicators for each latent variable (in line with statistical recommendations three observed indicators for each latent factor were constructed through the item-to-construct balance parceling method; e.g., Little, Cunningham, Shahar, & Widaman, 2002; Marsh, Hau, Balla, & Grayson, 1998). This model represents the configural (baseline) model (M1). Second, we compared the configural model with the metric model (M2), in which factor loadings are constrained to be equal across time. Third, we compared the metric model with the scalar model (M3), also constraining intercepts to be equal across time. Finally, we compared the scalar model with residual variance invariance model (M4), in which residual variances also are constrained to be equal across time. We tested differences between models representing the various levels of invariance considering changes in fit indices (e.g., Cheung & Rensvold, 2002). Specifically, a ΔCFI $\geq -.010$ supplemented by ΔRMSEA $\geq .015$ would be indicative of noninvariance (Chen, 2007). After testing whether strict invariance (implying all the invariance levels described above) could be established within each type of informant, we examined whether it also could be found across the three types of informants. When strict invariance is established, observed variables represent reliable estimates of latent variables and can be used in subsequent analyses (Steinmetz, 2013).

Analyses of Change and Stability

The first purpose of this study was to examine development of SCC occurring in each family member. In order to address this aim we examined (a) mean-level changes and (b) rank-order stability. *Mean-level change analyses* examined the average SCC developmental trajectory displayed by adolescents, mothers, and fathers. Specifically, we modeled mean-level changes in SCC by means of univariate latent growth curve (LGC) analyses (Duncan, & Duncan, 2009; Duncan, Duncan, & Strycker, 2006; Preacher, 2010). LGC analyses estimate multiple attributes of change for each informant: the intercept represents the initial level of SCC and the slope indicates the rate of change (e.g., the rate of change in SCC displayed by adolescents from 13 to 18 years old). The means of intercepts and slopes represent average

Table 1 Observed Means (M) and Standard Deviations (SD) of SCC for Each Family Member

	T1		T2		T3		T4		T5		T6	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Adolescents	3.41	0.63	3.47	0.68	3.50	0.72	3.46	0.77	3.48	0.80	3.44	0.80
Boys	3.52	0.60	3.62	0.62	3.68	0.62	3.62	0.70	3.64	0.70	3.58	0.73
Girls	3.27	0.65	3.29	0.72	3.26	0.77	3.26	0.81	3.28	0.86	3.27	0.85
Fathers	3.86	0.56	3.89	0.56	3.93	0.55	3.98	0.54	3.99	0.56	3.93	0.58
Mothers	3.72	0.62	3.77	0.63	3.82	0.66	3.87	0.64	3.87	0.64	3.88	0.66

developmental trajectories reported by a group of informants, while the variances of intercepts and slopes indicate interindividual differences in levels and rates of change. To determine which growth curve best captured observed changes, we compared three models[2]: an intercept-only model (i.e., null model; Preacher, 2010), a model with intercept and linear slope (i.e., a model in which change over time is captured by a linear trend), and a free-change model (i.e., a model that allows a parsimonious estimation of nonlinear growth by using free slope factor estimation obtained by fixing two slope factor loadings for model identification and freely estimating the others; Muthén & Khoo, 1998). We conducted model comparisons by means of Satorra and Bentler's (1994) scaled difference chi-square test statistic. *Rank-order stability* indicates whether the rank order of informants on SCC is maintained over time. To assess rank-order stability, we computed (in SPSS) Pearson's cross-lagged correlations of SCC (e.g., correlation between SCC at Time 1 and SCC and Time 2) for each family member.

Analyses of Associations Between Adolescent and Parental SCC

The second purpose of this study was to examine reciprocal associations between adolescent and parental SCC. In order to address this aim we conducted (a) multivariate latent growth curve (MLGC) and (b) cross-lagged panel analyses. *MLGC analyses* allow testing of correlations between intercepts and slopes. Specifically, (a) correlations between intercepts mirror within-time correlations and indicate that initial levels are linked (e.g., initial levels of adolescents' SCC are associated with initial levels of mothers' SCC), (b) correlations between slopes highlight overlapping developmental trends (e.g., changes in adolescents' SCC are related to changes in mothers' SCC), and (c) correlations between intercepts and slopes indicate whether SCC initial levels are linked to rates of change (e.g., initial levels of mothers' SCC are linked to over time changes in adolescents' SCC). *Cross-lagged panel analyses* allow testing of cross-lagged associations among adolescents', fathers', and mothers' SCC (e.g., adolescents' SCC at T1 predicting mothers' SCC at T2, mothers' SCC at T1 predicting adolescents' SCC at T2), controlling for one-year (e.g., adolescents' SCC at T1 predicting adolescents' SCC at T2) and two-year (e.g., adolescents' SCC at T1 predicting adolescents' SCC at T3) stability paths, and within-time correlations (e.g., correlation between adolescents' and mothers' SCC at T1). For both MLGC and cross-lagged analyses, we further conducted multigroup tests to examine whether the results were moderated by adolescent gender.

RESULTS

Preliminary Analyses

Results of measurement invariance tests indicated that all the levels of invariance (configural, metric, scalar, and residual variance invariance) across time could be clearly established within each informant and also across informants (see Appendix). Means and standard deviations of the study variables are reported in Table 1. Within-time correlations are displayed in Table 2.

Development of Self-concept Clarity

Mean Level Changes

Findings of latent growth curve analyses (see Table 3) indicated that for adolescents, as well as for boys and girls separately, the linear model fitted the data significantly better than the intercept-only model and the free-change model was statistically better than the linear model. For both mothers and fathers, the linear model was significantly better than the intercept-only model, whereas the free-change model was not significantly better than

Table 2 Within-Time Pearson's Correlations Between Adolescents' (SCCa), Fathers' (SCCf), and Mothers' (SCCm) SCC by Time Points (T)

	T1		T2		T3		T4		T5		T6	
	SCCf	SCCm	SCCf	SCCm	SCCf	SCCm	SCCf	SCCm	SCCf	SCCm	SCCf	SCCm
SCCa	.13**	.11*	.04	.17***	.06	.18***	.07	.21***	.10*	.19***	.14**	.13**
SCCf		.11*		.08		.08		.05		.09*		.12**

Note. * $p < .05$; ** $p < .01$; *** $p < .001$.

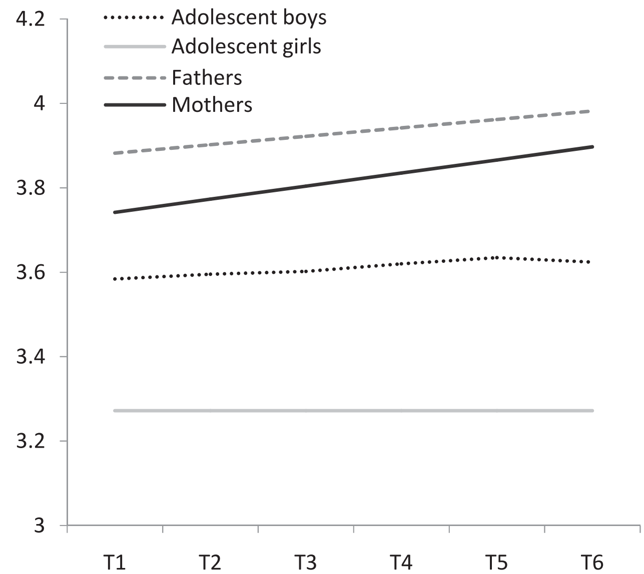

Figure 1 Estimated Growth of SCC.

the linear model. Thus, we retained the free-change model for adolescents and the linear model for both parents. Estimated growth curves are reported in Figure 1. As can be seen, adolescent females reported low stable levels of SCC; adolescent males displayed intermediate initial levels of SCC that slightly increased from T1 to T5 and then decreased toward the end of the study; fathers and mothers exhibited high initial levels of SCC that increased over the course of the study.

In order to compare mean-level changes within (boys vs. girls, fathers vs. mothers) and across (boys vs. fathers, boys vs. mothers, girls vs. fathers, girls vs. mothers) generations we tested a multigroup multivariate LGC model in which we included the free-change model for adolescents and the linear models for both parents. We conducted pairwise parameter comparisons by means of the Wald test (model comparison option available in M*plus*).

Results of intercept comparisons within generations highlighted that boys reported higher initial levels of SCC than girls ($p < .001$) and fathers reported higher levels of SCC than mothers ($p < .001$). In contrast, the slopes of boys and girls ($p = .682$) and the slopes of fathers and mothers ($p = .064$) were not statistically different. Thus, within each generation SCC intercepts of males were higher than those of females whereas rates of change were comparable (Figure 1).

Results of intercept comparisons across generations indicated that boys reported lower initial levels of SCC than their fathers ($p < .001$) and girls reported lower initial levels of SCC than their mothers ($p < .001$). Additionally, boys displayed lower initial levels of SCC than their mothers ($p < .001$) and girls displayed lower initial levels of SCC than their fathers ($p < .001$). Thus, children reported lower SCC intercepts than their parents, both in same-sex and in other-sex parent–adolescent dyads (Figure 1).

In addition, results of prior univariate LGC analyses had suggested different functional pattern of change for adolescent boys and girls and their parents (nonlinear and linear, respectively). To further compare slope across generations, we then focused solely on linear slopes and we found that linear growth rates of boys were not significantly different from those of their fathers ($p = .052$) while they were significantly different from mothers' slopes ($p < .001$). Similarly, for girls, slope differences were found with mothers ($p < .01$) but not with fathers ($p = .070$). Thus, for both boys and girls, adolescents' SCC increased less than mothers' SCC over the course of the study.

Rank-Order Stability

Findings (see Table 4) indicated that indices of one-year interval rank-order stability were high and increased for each informant. We tested for significance of differences in rank-order stability between family members and also across time. In order to reach this aim, we transformed correlation coefficients into z-scores using Fisher r-to-z transformations, and we then compared these z-scores for statistical significance ($p < .05$). First, we tested for gender differences within each generation. Results highlighted that gender differences in rank-order stability were found between adolescents (rank-order stability of girls was significantly higher than rank-order stability of boys for each between-measurement assessment, with the only exception of T4–T5 indices that were similar) but not between parents (rank-order stability of fathers and mothers was found to be similar, with the only exception of T2–T3 indices on which rank-order stability of mothers was found to be significantly higher than rank-order stability of fathers).

Second, we tested for generational differences. Findings indicated significant generational differences within males (rank-order stability of fathers was found to be significantly higher than rank-order stability of adolescent boys, with the only exception of T4–T5 indices that did not reach statistical significance with a $p = .066$), but not within females (rank-order stability of mothers was found to be similar to rank-order stability of adolescent girls, with the only exception of T1–T2 indices on which rank-order stability of mothers was found to be significantly higher than rank-order stability of adolescent girls). Furthermore, tests of generational differences across genders indicated that rank-order stability of boys was found to be lower than rank-order stability of mothers (all the comparisons were statistically significant except for T4–T5 indices), whereas levels of rank-order stability of girls were not significantly different from those of their fathers.

Finally, for each family member, indices of rank-order stability were found to increase over time. Indeed, for adolescents of both genders and for both parents, T1–T2 rank-order stability was significantly lower ($p < .001$) than T5–T6 rank-order stability.

Associations Between Adolescent and Parental Self-concept Clarity

Associations Among Adolescents', Fathers', and Mothers' Intercepts and Slopes

We examined correlations among intercepts and slopes of adolescents', fathers, and mothers' SCC by means of a MLGC model.

Table 3 Univariate SCC Latent Growth Curve Analyses

	Growth Factors		Model Fit					Model Comparisons	
	Intercept M (σ^2)	Slope M (σ^2)	χ^2	df	CFI	TLI	RMSEA [90% CI]	Models	$\Delta\chi_{SB}^2$ (Δdf)
Adolescents ($N = 497$)									
M1: Intercept-only model	3.466*** (.334***)		260.314	19	.821	.858	.160 [.143, .177]		
M2: Linear model	3.453*** (.259***)	.004 (.013***)	82.849	16	.950	.953	.092 [.073, .112]	M2–M1	188.324 (3)***
M3: Free change model	3.453*** (.255***)	.004 (.008**)	62.916	12	.962	.953	.092 [.071, .116]	M3–M1	20.201 (4)***
Adolescents—Boys ($N = 283$)									
M1: Intercept-only model	3.616*** (.237***)		122.104	19	.815	.854	.138 [.116, .162]		
M2: Linear model	3.594*** (.165***)	.007 (.010***)	46.706	16	.945	.948	.082 [.055, .110]	M2–M1	80.689 (3)***
M3: Free-change model	3.584*** (.161***)	.008 (.006***)	32.755	12	.963	.953	.078 [.047, .111]	M3–M1	13.371 (4)**
Adolescents—Girls ($N = 214$)									
M1: Intercept-only model	3.269*** (.392***)		161.718	19	.793	.836	.187 [.161, .215]		
M2: Linear model	3.273*** (.321***)	–.001 (.018***)	50.379	16	.950	.953	.100 [.070, .132]	M2–M1	120.294 (3)***
M3: Free-change model	3.272*** (.334***)	.000 (.010**)	39.135	12	.961	.951	.103 [.068, .140]	M3–M1	11.763 (4)*
Fathers ($N = 497$)									
M1: Intercept-only model	3.938*** (.222***)		89.232	19	.950	.960	.086 [.069, .105]		
M2: Linear model	3.882*** (.214***)	.020*** (.002**)	39.317	16	.983	.984	.054 [.033, .076]	M2–M1	49.716 (3)***
M3: Free-change model	3.865*** (.215***)	.020*** (.002)	38.881	12	.981	.976	.067 [.044, .091]	M3–M1	6.197 (4)
Mothers ($N = 497$)									
M1: Intercept-only model	3.831*** (.307***)		154.819	19	.920	.937	.120 [.103, .138]		
M2: Linear model	3.742*** (.297***)	.031*** (.005***)	29.822	16	.992	.992	.042 [.017, .065]	M2–M1	133.318 (3)***
M3: Free-change model	3.727*** (.296***)	.034*** (.005***)	29.513	12	.990	.987	.054 [.030, .079]	M3–M1	1.333 (4)

Note. * $p < .05$; ** $p < .01$; *** $p < .001$; M = mean; σ^2 = variance; χ^2 = chi-square; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root mean square error of approximation and 90% confidence interval; Δ = change in parameter. $\Delta\chi_{SB}^2$ model comparisons are based on Satorra and Bentler's (1994) scaled difference chi-square test statistic.

On the basis of the results described above, the MLGC analyses comprised the free-change model for adolescents and the linear models for both parents (all variances of intercepts and slopes were statistically significant at $p < .001$). This multivariate model fit the data very well, χ^2 (140) = 250.513, CFI = .981, TLI = .979, RMSEA = .040 [.032, .048]. The significant results are displayed in Figure 2. Findings indicated that the intercepts were all positively and significantly interrelated. Furthermore, the slope of adolescents was negatively related to the slope of fathers. Finally, the intercepts of fathers' and mothers' SCC correlated significantly with the slope of adolescents' SCC. Thus, higher initial levels of fathers' and mothers' SCC were positively related to changes in adolescents' SCC over the course of adolescence.

We conducted multigroup analyses to test whether the model applied differently to adolescent boys and girls. We found that the constrained model, in which all correlations were constrained to be equal across groups, was not significantly different ($\Delta\chi_{SB}^2$ [15] = 17.614, $p = .284$) from the unconstrained model, in which all parameters were free to vary across gender groups. Thus, adolescent gender did not moderate model results.

Cross-Lagged Analyses

To examine the longitudinal associations among adolescents' and parents' SCC we tested a cross-lagged panel model in which cross-lagged associations among adolescents', fathers', and mothers' SCC were analyzed controlling for stability paths and within-time correlations. To model the longitudinal associations as parsimoniously as possible, we tested whether cross-lagged effects and T2–T6 correlations were time-invariant (assumption of stationarity). Results indicated the model in which cross-lagged effects and T2–T6 correlations were time-invariant was not significantly different, $\Delta\chi_{SB}^2$ (36) = 36.751, $p = .434$, from the model in which these parameters were allowed to vary across time. Thus, we could retain the more parsimonious time-invariant model as the final one.

The model fit the data well, χ_{SB}^2 (114) = 317.901, CFI = .965, TLI = .953, RMSEA = .060 [.052, .068]. Significant cross-lagged paths are reported in Figure 3. As can be seen, fathers' and mothers' SCC had a significant and similar positive effect on adolescents' SCC over the six waves, while adolescents' SCC did not predict fathers' and mothers' SCC. Importantly, the paths from fathers' and mothers' SCC to adolescents' SCC were significantly stronger than the reverse paths (from adolescents' SCC to fathers' SCC, Wald test of parameter constraints significant at $p < .01$; and from adolescents' SCC to mothers' SCC,

Table 4 Rank-Order Stability of SCC

	T1–T2	T2–T3	T3–T4	T4–T5	T5–T6
Adolescents	.50	.66	.69	.77	.78
Boys	.36	.54	.61	.72	.71
Girls	.59	.73	.72	.79	.82
Fathers	.67	.70	.78	.78	.79
Mothers	.69	.78	.77	.78	.83

Note. All correlations were significant at $p < .001$.

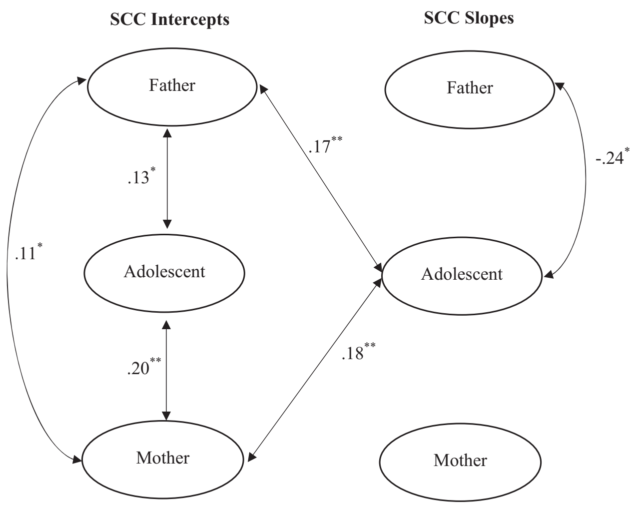

Figure 2 Correlations Among SCC Intercepts and Slopes. *Note*. *$p < .05$; ** $p < .01$; *** $p < .001$

Wald test significant at $p < .05$). Furthermore, at T1 adolescents', fathers', and mothers' SCC scores were all positively interrelated.

Finally, the moderating effect of adolescent gender was tested through multigroup analyses. Also in this case, the constrained model was not significantly different, $\Delta\chi_{SB}^2$ (12) = 5.62, $p = .93$, from the unconstrained model. Thus, the pattern of cross-lagged effects and within-time correlations was the same for adolescent boys and girls.

DISCUSSION

In this study, we sought to enrich our understanding of the dynamic development of SCC in families with adolescents, with two novel research goals. First, we studied patterns of change and stability in SCC displayed by each family member over a period corresponding to the adolescent phase. Second, we disentangled intergenerational transmission processes by examining reciprocal associations among fathers', mothers', and adolescents' SCC. Main study findings are discussed below, in light of their implications.

Stability and Change in Self-concept Clarity

The first purpose of this study was to examine stability and change in SCC in each family member. Analyses of adolescent SCC mean-level changes indicated that adolescent boys reported higher SCC than girls. Furthermore, SCC of girls remained stable over time, whereas SCC of boys displayed a curvilinear pattern, with a slight increase from ages 13 to 17, followed then by a slight decrease. Thus, this trend confirms results of a previous longitudinal study (Schwartz et al., 2011) that found slight increases in SCC in adolescents from 12 to 16 years old. Our result further adds to this picture, by underlining that after 16 years old boys' levels of SCC are likely to decrease. This is probably due to the approaching transition from adolescence to emerging adulthood. Indeed, this transition implies multiple changes in societal (e.g., secondary school to university or school to work transitions) and relational (e.g., transition from the parental home to independent living or cohabitation with a partner) domains (Arnett, 2000). These changes are likely to induce momentary decreases in self-certainty. In fact, the process of leaving one role (e.g., leaving the role of high school student) implies a weakening of established relational ties and current routines that lessen SCC (Light & Visser, 2013). What remains unclear is why this decrease in SCC, probably related to the approaching transition to emerging adulthood, applies only to boys and not to girls. An alternative explanation for the gender differences we found could be that boys might have a tendency to inflate their self-perception (e.g., boys report higher levels of competence than girls even at elementary school age, which runs counter to their true performance or ratings by others; Van Dongen-Melman, Koot, & Verhulst, 1993), which is readdressed by them coming of age. This hypothesis would be consistent with the finding that gender differences in self-esteem (with boys reporting higher self-esteem than girls) documented in early and middle adolescence tend to become weaker in emerging adulthood and adulthood (for a meta-analysis, see Kling, Hyde, Showers, & Buswell, 1999). Future longitudinal studies monitoring SCC developmental trajectories throughout a wider age period, spanning from adolescence to adulthood, are needed to further explain this gender difference.

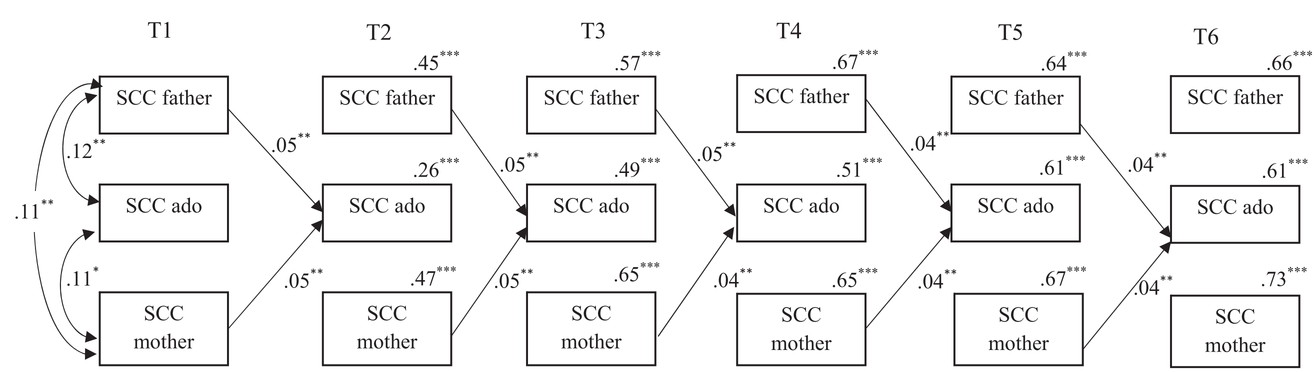

Figure 3 Standardized Results of the Cross-Lagged Model. Ado = Adolescent. *Note*. * $p < .05$; ** $p < .01$; *** $p < .001$. One-year and two-year stability paths were all significant at $p < .001$, for the sake of clarity, they are not reported.

In this study, we shed new light into developmental patterns of SCC among adults. We found that fathers and mothers differed in their initial levels of SCC (higher in fathers) but not in the shape of SCC development. In fact, SCC increased throughout the study for both parents. These results provide longitudinal support to cross-sectional age comparisons reported by Lodi-Smith and Roberts (2010), who found that SCC increased until the age of 60 and then decreased in older adulthood.

Further comparisons between adolescents' and parents' SCC developmental patterns indicated that children reported lower SCC initial levels than their parents, both in same-sex and in other-sex parent–adolescent dyads. This confirms that parents have a more stable self-concept than their children and poses the basis for a unidirectional process of transmission that we will discuss more in detail below.

The analysis of rank-order stability further enriched our understanding of SCC developmental patterns. We found that rank-order stability of SCC was high for adolescents, their mothers, and fathers. In this respect, levels of rank-order stability of SCC were comparable to those found for other core personality characteristics. For instance, adolescents' indices of rank-order stability of SCC were comparable to indices found for the Big Five personality traits of Agreeableness, Extraversion, Conscientiousness, Emotional stability, and Openness to experience (Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2009). Moreover, results indicated that indices of rank-order stability increased over the period under investigation for each family member. This increase was particularly evident in adolescents, confirming that adolescence is a key period for self-development (Meeus, 2011; Schwartz et al., 2012). Overall, this body of evidence suggests that individual differences in SCC become increasingly more set with age.

In addition, we found gender differences in rank-order stability but only among adolescents. Specifically, rank-order stability of girls was found to be higher than rank-order stability of boys whereas mothers and fathers exhibited comparable levels of rank-order stability. Furthermore, findings indicated generational differences for males (rank-order stability of fathers was significantly higher than rank-order stability of adolescent boys), but not for females (rank-order stability of mothers was similar to rank-order stability of adolescent girls). Taken together, this evidence underlines that girls have higher rank-order stability than boys in adolescence but then males catch up, so that rank-order stability of women and men is similar in adulthood. This pattern mirrored research into personality development (e.g., Klimstra et al., 2009) and identity formation (e.g., Klimstra et al., 2010) that shows that differences between males and females occur mainly in early to middle adolescence and then tend to be leveled by late adolescence and early adulthood. Girls are found to mature at an earlier stage than boys, probably as an effect of earlier physical (girls reach puberty 1–2 years earlier than boys) and cognitive (in early adolescence, girls tend to be up to a full year ahead of boys in several aspects of brain development) development (Meeus, Van de Schoot, Keijsers, Schwartz, & Branje, 2010).

Intergenerational Transmission of Self-concept Clarity

The second main purpose of this study was to unravel intergenerational transmission processes by disentangling reciprocal associations between adolescents' and parents' SCC. In line with our hypothesis, we found support for a unidirectional effect, with parents' SCC influencing adolescents' SCC but not the other way around. More specifically, we found that rates of change in adolescents' SCC were associated with initial level of fathers' and mothers' SCC. This result underlines that when adolescents can count on parents with high levels of self-certainty they are more likely to increase their SCC over the course of adolescence. Similarly, the cross-lagged analyses highlighted that fathers' and mothers' SCC had a similar and positive effect on their offspring's SCC. This effect was modest but consistent over the course of adolescence (from age 13 to age 18).

The process of influence within the parent–child system can be interpreted considering multiple explanatory models. It can be conceived as a unidirectional process, in which parents have an influence on their children, or as a bidirectional one, in which parents and children influence each other in an active way (Kerr, Stattin, Biesecker, & Ferrer-Wreder, 2003). In this study, we found that intergenerational transmission of SCC appears to be a unidirectional process. This is consistent with previous longitudinal studies that disentangled intergenerational processes in other domains of adolescent development. In fact, prior longitudinal studies, for instance on transmission of cultural orientations (Vollebergh, Iedema, & Raaijmakers, 2001) and conflict resolution styles (Van Doorn, Branje, & Meeus, 2007), consistently found a unidirectional effect, from parents to adolescents, while the reverse path, from adolescents to parents, was not significant. Taken together, this set of evidence suggests a parental dominance in intergenerational transmission processes. As anticipated above, this can be explained by the higher SCC stability reported by parents. In fact, parental SCC is more stable, or time-invariant, than adolescent SCC. So, the impact of parental SCC on adolescent SCC is an example of the impact that time-invariant processes have on less time-invariant processes (Meeus, 2014).

Furthermore, our results are consistent with the perspective of social learning theory (Bandura, 1977), suggesting that parents with higher self-certainty are more likely to represent models for their children and, doing so, affecting in a positive way their SCC. In fact, although in adolescence parents' influence may somehow decline since other socialization agents gain increasing relevance (e.g., peers), parents continue to play a central role in children's lives (Helsen, Vollebergh, & Meeus, 2000).

Additionally, the mechanism through which parents can exert this positive influence on their offspring can be further understood considering Erikson's (1950, 1968) psychosocial theory according to which individuals with a stable self-concept are more likely to establish intimate interpersonal relationships and to show generativity toward younger generations. Our results clearly highlight that parents' SCC has a direct influence on adolescents' SCC. In fact, parents with higher SCC can promote achievement of higher SCC in their children. From a practical point of view, this points to the responsibility role of parents within the family. Parents with low levels of SCC might fail in playing their model and generative role and, as a consequence, can increase their offspring's self-confusion.

Interestingly, the effects of fathers' and mothers' SCC were not moderated by adolescent gender. Thus, the unidirectional influence of fathers' and mothers' SCC on adolescents' SCC applied equally to adolescent boys and girls. Furthermore, the sizes of these effects (as indicated by the regression coefficients) were comparable for fathers and mothers. So, the pattern of influence in same-sex dyads (i.e., father–son, mother–daughter) was similar to the pattern of influence in opposite-sex dyads (i.e., father–daughter, mother–son). These findings are consistent with recent results showing, for instance, that processes of maternal and paternal transmission of environmental concerns are similar for adolescent boys and girls (Meeusen, 2014).

Finally, we should acknowledge that effect sizes of the transmission of parental SCC were small. However, their size should be interpreted in light of two aspects. First, cross-informant designs yield effect sizes that are generally smaller than those obtained in studies relying exclusively on self-reports (as it would be if in one study adolescents rate both their level of SCC and that of their parents). Furthermore, small cross-lagged paths in longitudinal autoregressive models are very common (since they are controlled for stability effects) but still meaningful (Adachi & Willoughby, 2014). In fact, these effects suggest that one variable is associated with changes in levels of another variable over time. These predictive effects on change in levels of the variable of interest may reflect an ongoing process of cumulative effects and thus may have a substantial impact on this variable over time (Adachi & Willoughby, 2014). In addition, we found that these effects (from parents to adolescents' SCC), although small, were significantly stronger than the reciprocal effects (from adolescents to parents' SCC). Thus, this evidence provides support to the unidirectional transmission process of SCC.

Limitations and Suggestions for Future Research

This study should be considered in light of some shortcomings that can suggest venues for future research. First, the sample included Dutch families with medium or high socioeconomic status. Thus, we do not know if our findings would be replicated in other family types and in other cultural groups. An important direction for future research could be to unravel the interplay of parental and adolescent SCC in multiproblematic families, in which parents may fail in providing their children with role models. In this case, it would be important to focus on other socialization agents (e.g., teachers, mentors) that can serve as additional modeling agents for adolescents.

Second, in this study we provided a comprehensive understanding of parental influences on SCC in adolescence. Future longitudinal research could further enrich available knowledge by unraveling the interplay of parents' and offspring's SCC during and after the transition to emerging adulthood. In fact, emerging adulthood continues to represent a privileged period for self-development being a phase in which individuals can explore a large array of alternatives before transitioning to adult roles and commitments (Arnett, 2000).

Third, in this study we modeled longitudinal variations in SCC in adolescents, fathers, and mothers. All intercepts and slopes were characterized by significant variance, suggesting interindividual differences in initial levels and rate of change of SCC. Thus, future studies might extend our current knowledge by applying a person-centered approach (Bergman, Magnusson, & El Khouri, 2003). In this way, they could identify the presence of distinct subgroups within adolescent boys, girls, fathers, and mothers. For instance, it could be that the overall flat growth curve detected for girls could hide three developmental trajectories (stable SCC group, increasing SCC group, and decreasing SCC group). So, future studies could greatly advance our understanding of heterogeneity in development of SCC by (a) identifying classes of individuals with distinct SCC developmental trajectories (by means of analytic techniques such as latent class growth analysis and growth mixture modeling; e.g., Muthén, & Muthén, 2000), and (b) further disentangling the profile of each trajectory in terms of relevant correlates (e.g., personality traits, self-esteem, psychosocial functioning; Crocetti & Meeus, 2014).

Conclusions

In this longitudinal study involving three family members (adolescents and their fathers and mothers), we found that SCC is a relatively stable personality characteristic and individual differences in SCC increase with age. Findings clearly indicated that intergenerational transmission of SCC is a unidirectional process, with fathers' and mothers' SCC having a similar positive effect on adolescents' SCC. Thus, echoing the fragment of the song cited at the beginning, we can conclude that adolescents can have a better understanding of who they are looking at their parents' levels of self-consistency.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and publication of this article.

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Notes

1. The mean ages of boys ($M_{age} = 13.05$, $SD_{age} = 0.49$) and girls ($M_{age} = 13.01$, $SD_{age} = 0.44$) were not statistically different, F (1, 496) = 1.14, $p = .287$, $\eta^2 = .00$.
2. Sample M*plus* syntax files for the three models were: a) intercept-only model: i| scca1@0 scca2@1 scca3@2 scca4@3 scca5@4 scca6@5; b) linear model: i s| scca1@0 scca2@1 scca3@2 scca4@3 scca5@4 scca6@5; free-change model: i s | scca1@0 scca2 scca3 scca4 scca5 scca6@5.

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APPENDIX

Measurement Invariance Tests for Adolescents' (Boys' and Girls'), Fathers', and Mothers' SCC

	Model Fit					Model Comparisons		
	χ^2	*df*	CFI	TLI	RMSEA [90% CI]	Models	ΔCFI	ΔRMSEA
Adolescents (*N* = 497)								
M1. Configural	286.614	90	.968	.946	.066 [.058, .075]			
M2. Metric	296.777	100	.968	.951	.063 [.055, .071]	M2–M1	.000	–.003
M3. Scalar	322.456	115	.967	.955	.060 [.053, .068]	M3–M2	–.001	–.003
M4. Residual variance	348.216	130	.965	.959	.058 [.051, .066]	M4–M3	–.002	–.002
Adolescents—Boys (*N* = 283)								
M1. Configural	177.475	90	.970	.950	.059 [.046, .071]			
M2. Metric	190.942	100	.969	.953	.057 [.044, .069]	M2–M1	–.001	–.002
M3. Scalar	221.246	115	.964	.952	.057 [.046, .068]	M3–M2	–.005	.000
M4. Residual variance	252.093	130	.959	.951	.058 [.047, .068]	M4–M3	–.008	–.002
Adolescents—Girls (*N* = 214)								
M1. Configural	193.578	90	.966	.942	.073 [.059, .088]			
M2. Metric	201.369	100	.966	.949	.069 [.055, .083]	M2–M1	.000	–.004
M3. Scalar	213.328	115	.967	.957	.063 [.050, .076]	M3–M2	.001	–.006
M4. Residual variance	235.425	130	.965	.959	.062 [.049, .074]	M4–M3	–.002	–.001
Fathers (*N* = 497)								
M1. Configural	286.968	90	.967	.945	.066 [.058, .075]			
M2. Metric	297.093	100	.967	.950	.063 [.055, .071]	M2-M1	.000	–.003
M3. Scalar	366.115	115	.958	.945	.066 [.059, .074]	M3-M2	–.009	.003
M4. Residual variance	393.239	130	.956	.949	.064 [.057, .071]	M4-M3	–.002	–.002
Mothers (*N* = 497)								
M1. Configural	350.996	90	.965	.940	.076 [.068, .085]			
M2. Metric	369.348	100	.964	.944	.074 [.066, .082]	M2–M1	–.001	–.002
M3. Scalar	447.636	115	.955	.940	.076 [.069, .084]	M3–M2	–.009	.002
M4. Residual variance	468.039	130	.954	.946	.072 [.065, .079]	M4–M3	–.001	–.004
All families (*N* = 497, for a total of 1,491 participants)								
M1. Configural	1968.394	1164	.964	.956	.037 [.034, .040]			
M2. Metric	1990.307	1168	.964	.955	.038 [.035, .040]	M2–M1	.000	.001
M3. Scalar	2326.923	1219	.951	.942	.043 [.040, .045]	M3–M2	–.013	.005
M4. Residual variance	2755.291	1270	.934	.926	.049 [.046, .051]	M4–M3	–.017	.006

Note. χ^2 = chi-Square; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root mean square error of approximation and 90% confidence interval; Δ = change in the parameter.