

**Parental psychological control, adolescent self-criticism, and adolescent depressive symptoms:
A latent change modeling approach in Belgian adolescents**

ABSTRACT

Objective At the level of both between-person differences and within-person changes across time, parental achievement-oriented psychological control may influence the development of adolescent self-criticism, which in turn may increase vulnerability for adolescent depression.

Method In a two-wave prospective study of 368 adolescents (age 13–17 years), Latent Change Modeling was used with Belgian adolescents' self-report measures.

Results For mothers and fathers separately, adolescent self-criticism intervened in associations between achievement-oriented psychological control and adolescent depressive symptoms, at the level of both between-person differences and within-person changes. When investigating parents simultaneously, only maternal parenting was related directly and indirectly to adolescent depressive symptoms.

Conclusions Our results underscore the importance of personality-related vulnerability in associations between the parenting environment and symptoms of psychopathology during adolescent development.

Keywords: adolescent depressive symptoms, adolescent self-criticism, parenting

Self-criticism, a personality dimension characterized by the combination of harsh self-scrutiny and intense feelings of unworthiness and guilt (Blatt, 2008; Blatt & Luyten, 2009), has been related to an increased risk for the onset of psychopathology in adolescence and a more severe course, including elevated levels of depressive symptoms (Blatt, 2008; Blatt, Hart, Quinlan, Leadbeater, & Auerbach, 1993; Kuperminc, Blatt, & Leadbeater, 1997). Theory and research suggest that psychologically controlling parenting (i.e., a parenting style that pressures adolescents into adopting parental standards) is a potential developmental antecedent of self-criticism (Blatt & Homann, 1992; Kopala-Sibley & Zuroff, 2014). A growing number of studies, including cross-cultural studies, have shown that parental psychological control is indeed related to adolescent self-criticism and, moreover, that self-criticism has an intervening role in the relationship between psychologically controlling parenting and adolescent depressive symptoms (Campos, Besser, & Blatt, 2010; Soenens et al., 2008; Soenens, Park, Vansteenkiste, & Mouratidis, 2012; Soenens, Vansteenkiste, & Luyten, 2010).

Very few studies have investigated these assumptions longitudinally, however, and existing studies have not focused on developmental change at the within-person level. As a consequence, it remains unclear whether changes in psychologically controlling parenting across time are related to changes in adolescent self-criticism and whether these changes are in turn related to changes in adolescent depressive symptoms. This is unfortunate because adolescence is a developmental period marked by substantial room for change in parent–child relationships, personality development, and psychopathology (Steinberg, 2001).

Self-Criticism and Adolescent Maladjustment

According to Blatt and colleagues (e.g., Blatt, 1974, 2004, 2008; Blatt & Blass, 1990; Blatt & Shichman, 1983), personality development progresses from infancy to adulthood according to two developmental lines: *relatedness*, involving the capacity to form mature reciprocal relationships, and *self-definition*, which involves the establishment of a realistic and positive self. Well-functioning personality requires a balance in the development of interpersonal relatedness and self-definition (Blatt, 2008; Blatt & Luyten, 2009). The integration of the two developmental lines is thought to be hampered when adolescents overemphasize one developmental line and neglect the other. Most relevant to the topic of this study, an over-emphasis on the self-definition line, at the expense of relatedness, is considered to result in a self-critical personality vulnerability (Blatt, 2008; Luyten, Corveleyn, & Blatt, 2005).

Adolescence can be considered as a particularly relevant period for the development of self-criticism, because adolescents go through important changes in terms of both self-definition and interpersonal relatedness (Kopala-Sibley, Zuroff, Hankin, & Abela, 2015; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999; Shahar, 2015).

Indeed, a key developmental task during adolescence is to develop a coherent personal identity (Erikson, 1968; Kroger & Marcia, 2011). At the same time, adolescents face important interpersonal challenges, including renegotiation of relationships with parents and increased involvement with peers and friends (Steinberg, 2001). The likelihood of developing a self-critical orientation is enhanced further by adolescents' heightened self-consciousness (e.g., Rankin, Lane, Gibbons, & Gerrard, 2004; Somerville et al., 2013), which comes with a strong sensitivity to evaluative remarks (e.g., from parents, teachers, and peers) and self-worth concerns—processes that may contribute further to self-criticism.

Testifying to the importance of self-criticism for adolescent development, the relationship between adolescent self-criticism and depressive symptoms has been demonstrated extensively in both cross-sectional and longitudinal studies, using samples both from typical Western countries such as the United States and Belgium, and from more collectivistic cultures such as South Korea (e.g., Blatt et al., 1993; Enns, Cox, & Inayatulla, 2003; Fichman, Koestner, & Zuroff, 1994; Shahar, Gallagher, Blatt, Kuperminc, & Leadbeater, 2004; Soenens et al., 2008; Soenens et al., 2010). Moreover, consistent with Blatt's (2008) assumption that there is continuity between normal personality development, subclinical levels of depression, and clinical depression, research has shown that self-criticism is related to depressive symptoms (i.e., feelings reflecting low mood such as hopelessness and sadness and physical complaints such as fatigue; e.g., Kopala-Sibley et al., 2015) in community adolescents, as well as to heightened risk for depressive disorders in adolescents (e.g., Evans & Frank, 2004). Considering that self-criticism is such a strong predictor of adolescent maladaptation, research has begun to address its developmental antecedents.

Psychologically Controlling Parenting as a Developmental Precursor of Adolescent Self-criticism

Theory and research suggest that a psychologically controlling parenting environment may play an important role in the development of self-criticism in adolescence (Blatt & Homann, 1992; Kopala-Sibley & Zuroff, 2014; Soenens, Elliot, et al., 2005). A psychologically controlling parenting environment is characterized by parents' use of manipulative techniques such as guilt induction and love withdrawal when the adolescent fails to live up to parental expectations (Barber & Harmon, 2002; Soenens, Vansteenkiste, Luyten, Duriez, & Goossens, 2005). It is important to note that psychologically controlling parenting is distinct from more adaptive types of parenting such as parental behavioral control (Pomerantz, 2001; Soenens & Vansteenkiste, 2010). In contrast to psychological control, which reflects an intrusive and undermining type of control, behavioral control involves adequate parental regulation of adolescent behavior through rule-setting and monitoring. While parental psychological control is related to adolescent maladjustment, parental behavioral control relates to indicators of

positive development such as academic achievement and high self-esteem (Barber, Olsen, & Shagle, 1994; Barber, Stolz, Olsen, Collins, & Burchinal, 2005; Bean, Bush, McKenry, & Wilson, 2003; Pettit, Laird, Dodge, Bates, & Criss, 2001).

Recent studies have focused on achievement-oriented psychological control, a specific type of psychological control with particular relevance to self-criticism. Parents with high levels of achievement-oriented psychological control use intrusive techniques to communicate their own excessive demands for achievement and to pressure their child to strive for perfect performance. In such an intrusive and pressuring parenting environment, adolescents are liable to gradually adopt the parents' high standards for achievement and engage in self-critical evaluation when they are incapable of meeting these externally imposed or self-imposed standards (Blatt & Homann, 1992; Soenens et al., 2010). Several studies, including a number of cross-cultural studies, have shown that achievement-oriented psychological control is related to adolescents' self-criticism (e.g., Soenens et al., 2012; Soenens, Vansteenkiste, Duriez, & Goossens, 2006; Soenens et al., 2010). Further, studies in different cultures have shown that self-criticism plays an intervening role in the relationship between psychologically controlling parenting and depressive symptoms, thus explaining how psychologically controlling parenting can influence adolescent depressive symptoms (Campos et al., 2010; Soenens et al., 2008; Soenens et al., 2012; Soenens et al., 2010).

However, the assumption that adolescent self-criticism plays an intervening role in the effects of psychologically controlling parenting on depressive symptoms needs to be considered from a developmental perspective (Soenens et al., 2008; Soenens, Vansteenkiste, et al., 2005). An implicit assumption in these studies is that changes in the levels of depressive symptoms in adolescents over time are associated with changes in parents' use of psychological control and corresponding changes in adolescent self-criticism. Yet, in the few longitudinal studies available to date, psychologically controlling parenting was typically assessed at one wave and related to self-criticism at a subsequent wave (e.g., Koestner, Zuroff, & Powers, 1991), or modeled as a predictor of rank-order changes in self-criticism from one wave to the next (e.g., Soenens et al., 2008). However, as noted, a truly developmental test of purported relationships among psychologically controlling parenting, adolescent self-criticism, and depressive symptoms requires that within-person changes in all these variables across time are modeled. When adolescents perceive an increase in parents' use of psychological control within the family, do they display a simultaneous increase in self-criticism compared with their baseline level, and do these within-person increases in self-criticism develop in tandem with a within-person increase in depressive symptoms?

We contend that a comprehensive and dynamic test of the intervening role of self-criticism in associations between psychologically controlling parenting and adolescent depressive symptoms requires that this test is performed both at the level of between-person differences (which reflect fairly stable differences between people) and at the level of within-person change (with change being defined as change relative to an individual person's own average). Latent Change Modeling (Hertzog & Nesselroade, 2003; McArdle & Nesselroade, 1994) is ideally suited to this purpose because it partitions variance in individuals' scores assessed at two time points into two components: (a) an intercept, reflecting individuals' average level of a variable (e.g., self-criticism), and (b) a change parameter, reflecting individuals' degree of within-person change in this variable.

An additional and more exploratory goal of this study is to examine gender differences in the relationships between parenting, self-criticism, and depressive symptoms. Previous studies have identified mean-level gender differences in these variables. For example, girls typically score higher on depressive symptoms compared with boys (Nolen-Hoeksema & Girgus, 1994). Some studies show a tendency for boys to be more self-critical than girls (Kuperminc, Leadbeater, & Blatt, 2001). Also parents have shown gender differences, with results showing that parents use more achievement-oriented psychological control with boys than with girls (e.g., Soenens et al., 2010). These mean-level differences suggest that the relationship between parenting and adolescent self-criticism may depend in part on adolescents' gender—an issue that has not received much attention (Kopala-Sibley & Zuroff, 2014). However, the few studies that have addressed this issue have failed to find a substantial moderating role of adolescent gender in these associations, indicating that the hypothesized developmental pathway may be similar for boys and girls (e.g., Soenens et al., 2008; Soenens et al., 2010; Whiffen & Sasseville, 1991). Likewise, few studies have simultaneously investigated the roles of maternal and paternal parenting on adolescent self-criticism. This is unfortunate because Blatt (2004) explicitly hypothesized that both mothers and fathers may be involved in the development of self-criticism in their children. The few cross-sectional studies available (e.g., Bleys et al., 2016; Soenens et al., 2010) have shown that both maternal and paternal achievement-oriented psychological control had a unique effect on the development of adolescent self-criticism. The current study will investigate, for the first time, whether maternal and paternal parenting have unique effects not only at the level of between-person differences, but also at the level of within-person changes, in adolescent self-criticism.

Hypotheses

The central hypothesis tested in the present two-wave longitudinal study is that adolescent self-criticism plays an intervening role in the relationship between parental achievement-oriented psychological control and adolescent depressive symptoms. This hypothesis rests not only on the assumption that between-person

differences in self-criticism account for associations between the between-person differences in psychologically controlling parenting and depressive symptoms, but also on the assumption that within-person changes (e.g., increases) in psychologically controlling parenting relate to corresponding within-person changes in self-criticism and subsequent changes in depressive symptoms. Thus, to provide a dynamic test of the intervening role of self-criticism, we applied Latent Change Modeling to derive scores for both baseline levels of the study variables (with variance in these scores reflecting between-person differences in baseline levels) and within-person changes across time in the study variables. The level and change scores were used in a Structural Equation Model in which the level and change of parental achievement-oriented psychological control predicted, respectively, the level and change of adolescent self-criticism, which in turn predicted, respectively, the level and change in depressive symptoms. A further exploratory aim of this study was to investigate whether these relationships were invariant across adolescent gender, and whether both maternal and paternal achievement-oriented psychological control had a unique effect at the level of within-person change in adolescent self-criticism. The theoretical model for this study is presented in Figure 1.

This study investigated the proposed model using a sample of Belgian adolescents. Belgium is a typical Western European country. Similar to the United States, individualistic values are endorsed more strongly than collectivist values (Hofstede, 2001). Through socialization, children and adolescents are thought to define themselves in terms of personal attributes rather than group membership and, as a consequence, family life is characterized by an emphasis on independence (Goossens & Luyckx, 2006). Past research has shown that the effects of both the use of psychological control by parents (Kopala-Sibley, Mongrain, & Zuroff, 2013; Soenens & Vansteenkiste, 2010) and adolescent self-criticism (Kopala-Sibley et al., 2015; Luyten & Blatt, 2013) on adolescents' functioning are similar in Belgium to those in the United States.

METHOD

Participants and Procedure

Dutch-speaking adolescents from two Belgian secondary schools (9th and 10th grade) were included. The longitudinal study included two waves separated by a 1-year interval, with the first assessment taking place in the fall semester of the 2012–2013 academic year. Two weeks prior to data collection, parental consent forms were given to adolescents in sealed envelopes and adolescents were asked to give these envelopes to their parents. Teachers were asked to remind students to bring back their forms if their parents did not want them to participate. It was emphasized to parents and adolescents that participation was voluntary and could be discontinued at any time, and that the data would be treated confidentially. After active consent of the principal of the participating

schools, parents gave permission for participation of their son or daughter through passive consent (i.e., by returning the bottom slip of the consent form if they did not want their child to participate in the study). A total of 10 parents declined participation in this way. No adolescents declined to participate. Adolescents completed the questionnaires during class hours after receiving information about the study. A research assistant was present in each classroom to help with any questions. This study was conducted in accordance with guidelines provided by the Ethical Committee of the Faculty of Psychology and Educational Sciences at Ghent University.

During the first wave (T1), 368 adolescents (51.9% female, 97.3% of Belgian nationality) participated. Although no information was available about ethnicity, the study was conducted in schools with an almost exclusively White and middle-class population of students. The adolescents ranged between 13 and 17 years of age, with a mean of 14.5 years ($SD = 0.65$). Most participants (91.8%) were engaged in studies preparing for higher education. At T2 (1 year later), 295 adolescents (i.e., 80% of the participants at T1) participated again. There were no differences between adolescents who did and did not participate at T2 in terms of gender ($\chi^2(1) = 0.66, ns$) or education ($\chi^2(1) = 0.19, ns$). However, those who did not participate at T2 were generally older at T1 (non-participants: $M = 14.7$ years, $SD = 0.82$, $M_{diff} = 0.28$, $SD = 0.10$, $t_{91.41} = 2.75$, $p = .007$).

Measures

Parental achievement-oriented psychological control. The Achievement-Oriented Psychological Control scale of the Dependency-Oriented and Achievement-Oriented Psychological Control Scale (Soenens et al., 2010) was administered to adolescents, who reported on both their mothers and fathers (9 items per parent, scored on a 5-point Likert scale ranging from 1 = *Strongly disagree* to 5 = *Strongly agree*; e.g., “My mother only respects me if I am the best at everything”). This scale has shown good convergent validity with other measures of psychological control, good discriminant validity relative to alternative parenting constructs (e.g., autonomy-supportive parenting), and good internal consistency (Cronbach’s alpha values $>.70$; Soenens et al., 2010). Moreover, the validity and reliability of this questionnaire has been demonstrated in diverse cultures and countries, including South-Korea (e.g., Soenens et al., 2012), Israel (Scharf, Rousseau, & Smith, 2016) and Switzerland (Mantzouranis, Zimmermann, Biermann Mahaim, & Favez, 2012). In this study, at T1, Cronbach’s alphas were .92 and .89 for adolescent reports of maternal and paternal achievement-oriented psychological control, respectively; at T2, the respective Cronbach’s alphas were .92 and .90. Higher scores on these scales reflect more achievement-oriented psychological control.

Adolescent self-criticism. Adolescents completed the Depressive Experiences Questionnaire for Adolescents (DEQ-A; Blatt, Schaffer, Bers, & Quinlan, 1992). This self-report instrument measures self-criticism

using 66 items, which are scored on a 7-point Likert scale (ranging from 1 = *totally agree* to 7 = *totally disagree*). A self-criticism score is calculated using a weighted scoring procedure including all items (i.e., items are transformed to *z*-scores and then weighted using means, standard deviations, and scoring weights derived from Blatt et al.'s original sample and factor scoring coefficients; Blatt et al., 1992; Evans & Frank, 2004). The DEQ-A has shown good internal consistency (as reflected in stable and good-fitting solutions in confirmatory factor analyses) and test–retest reliability (after 10 days or 1 year; Blatt et al., 1992; Kuperminc et al., 1997). Cronbach's alpha, calculated on the weighted item *z*-scores, was .69 at T1 and .70 at T2. Higher scores on this scale reflect more adolescent self-criticism.

Adolescent depressive symptoms. Adolescents completed the 20-item Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), which measures depressive symptomatology experienced in the past week (e.g., "During the past week, I thought my life had been a failure"). This instrument is specifically designed for the general population and has good internal consistency (with Cronbach's alphas typically in the .80–.90 range) and external validity with other measures of depression (e.g., Knight, Williams, McGee, & Olaman, 1997; Morin et al., 2011). In this study, Cronbach's alpha was .90 at T1 and .92 at T2.

The CES-D has a potential range of 0–60, with higher scores reflecting a greater number of adolescent-reported depressive symptoms. In the current sample, depressive symptoms ranged from 0 to 50 at T1 ($M = 13.90$, $SD = 9.93$) and from 0 to 60 at T2 ($M = 14.68$, $SD = 10.89$). These results are comparable to those for other samples, including Belgian adolescents (Soenens et al., 2008) and adolescents from the Netherlands (Cuijpers, Boluijt, & van Straten, 2008). Using a cut-off at 16 (Lewinsohn, Seeley, Roberts, & Allen, 1997), T1 data showed 34.9% of cases with a possible risk for clinical depression and T2 data showed 34.7% of cases with a possible risk for clinical depression.

Analyses

First, item scores for achievement-oriented psychological control, self-criticism, and depressive symptoms were divided randomly into three parcels for each variable (allowing a maximum ratio of 1/3 missing data in each parcel). Next, we evaluated whether missing values of the parcels were completely random using Little's MCAR test. The data were missing completely at random ($\chi^2(271) = 297.75$, *ns*, $\chi^2/df = 1.1$), thus supporting the use of the Full Information Maximum Likelihood method for model estimation (Dong & Peng, 2013; Enders, 2001; Enders & Bandalos, 2001). We used Maximum Likelihood estimation with standard errors that are robust to non-normality of the data (Muthén & Muthén, 1998-2014; Yuan & Bentler, 2000).

Second, Latent Change Models (Hertzog & Nesselroade, 2003; McArdle & Nesselroade, 1994) were constructed for each of the study's main variables (paternal achievement-oriented psychological control, maternal achievement-oriented psychological control, adolescent self-criticism, and adolescent depressive symptoms) using Mplus (Muthén & Muthén, 1998-2014). An example of the model specifications for achievement-oriented psychological control is provided in Figure 2. The factor scores for self-criticism were linearly transformed (multiplied by 100) because of the very small factor scores ($<.01$) and the risk of rounding errors. The factor scores for the level and change of each variable were then saved to use in subsequent analyses.

Third, to test the hypothesized intervening role of self-criticism, we used Structural Equation Modeling. As illustrated in Figure 1, the first model investigated whether the initial level and change of maternal parenting predicted the level and change of adolescent depressive symptoms, respectively, both directly and indirectly through the level and change of adolescent self-criticism. The second model was the same as the first, but included paternal parenting instead of maternal parenting. The third and final model included the scores for maternal and paternal parenting simultaneously, to investigate whether the initial level and change of maternal and paternal parenting (modeled separately) were related uniquely to the level and change of adolescent depressive symptoms, respectively, both directly and indirectly through the level and change of adolescent self-criticism. In all models, we first tested a fully saturated model (Figure 1) including both direct and indirect paths. These models also included the covariances between the corresponding level and change factor scores of each study variable (e.g., the level and change of self-criticism were allowed to correlate). This model was then refined in a step-by-step fashion, omitting the non-significant paths. A test of indirect effects was performed using the Sobel method with 95% confidence intervals (MacKinnon, 2008; Muthén, 2011). Moderation by adolescent gender was investigated using multi-group analyses. These analyses compared an unconstrained model (with path coefficients and covariances being allowed to vary across gender) with a constrained model (with path coefficients and covariances fixed to equality across gender). If the difference between the constrained and unconstrained model was non-significant, this suggested that there was no moderation by adolescent gender. Although we used multi-group analysis to examine the moderating effect of gender, we could not use a multi-group analysis to compare effects of maternal and paternal parenting. This is because a multi-group analysis is suited only to comparing independent groups; as mothers and fathers are nested within families (creating dependency between maternal and paternal variables), multi-group analysis could not be used to compare the effects of maternal and paternal parenting.

Model fit for all models was evaluated according to current guidelines (Hooper, Coughlan, & Mullen, 2008): the Root Mean Squared Error of Approximation (RMSEA) should be ≤ 0.08 for an acceptable fit (Byrne, 1998)

and close to 0.06 for a good fit (Hu & Bentler, 1999); the Comparative Fit Index (CFI) should be ≥ 0.90 for an acceptable fit and close to or higher than 0.95 for a good fit (Hu & Bentler, 1999); and the Tucker-Lewis Index (TLI) should be > 0.95 (Hooper et al., 2008; Hu & Bentler, 1999). Consecutive models were compared in terms of differences in the Satorra-Bentler scaled chi-square (SBS- χ^2 ; Bryant & Satorra, 2012), which uses a scaling correcting factor for each difference test..

RESULTS

Latent Change Models

Table 1 presents the fit indices and parameter estimates of the univariate Latent Change Models for maternal achievement-oriented psychological control, paternal achievement-oriented psychological control, adolescent self-criticism, and adolescent depressive symptoms. Overall, the models showed good fit indices for all variables, except for depressive symptoms, which showed only acceptable fit according to the RMSEA ^{Footnote 1}. As shown in Table 1, the Latent Change Models partition the variance in each study variable into an intercept (indicating the mean level of each variable) and a change parameter (indicating the degree of within-person change in each variable). The models also estimate the variance of both types of parameters. The variance in the intercepts of each variable was significant, indicating individual differences in the overall means of all variables (e.g., with some adolescents generally displaying higher levels of self-criticism than others). There was no mean-level change in the constructs, except for self-criticism, which showed an average increase between the two time points. In addition, highly significant variances were found for the change factor scores of all variables, indicating significant individual differences in within-person change across the 1-year interval. Thus, adolescents differed in the degree of within-person change they displayed (with some adolescents displaying increases in the study variables, while other adolescents displayed no change or decreases). Given that the mean-level change of all study variables (except self-criticism) was non-significant, positive associations between the change parameters of these variables simply indicate that increases in one study variable (relative to no change or stability, which is indicated by a value of 0 on the change parameter) are related to increases in the other study variable. Because there was a mean-level increase in self-criticism, positive associations with the change parameter of self-criticism indicate associations with an above average increase in self-criticism (i.e., an even more pronounced increase than the average increase observed in the total sample). Although it is important to keep this information in mind when interpreting the findings of this study, for ease of presentation we will simply use the term “increase” when discussing the meaning of positive associations between the change parameters.

Table 2 presents the zero-order correlations for the level and change factor scores derived from the Latent Change Models. First, all correlations between the level score of a variable and corresponding change score were significantly negative, with correlations ranging between $-.41$ and $-.47$, suggesting that higher initial levels of a construct are associated with less change across time. Second, for both level and change factor scores and for both maternal and paternal parenting, correlations indicated significant relationships, as hypothesized in the theoretical model in Figure 1. Both mothers' and fathers' parental achievement-oriented psychological control was positively related to adolescent self-criticism and adolescent depressive symptoms. One exception was the relationship between changes in paternal achievement-oriented psychological control and changes in adolescent self-criticism, which was only marginally significant ($r = .10, p = .061$). Further, level and change factor scores in adolescent self-criticism were also related to, respectively, level and change factor scores for adolescent depressive symptoms.

The Intervening Role of Self-Criticism

Before the mediation analyses we examined the effects of the background variables on the study variables. For this purpose, we performed a Multivariate Analysis of Covariance with the background variables (adolescent gender, adolescent education, and age) as predictors and with the factor scores as dependent variables. This analysis resulted in a significant multivariate effect of gender ($F(8,344) = 12.93, p < .001$). Compared with girls, boys reported a higher level of maternal achievement-oriented psychological control ($t(365) = 4.76, p < .001, M_{\text{diff}} = 0.34$) and a higher level of paternal achievement-oriented psychological control ($t(358) = 4.55, p < .001, M_{\text{diff}} = 0.33$). Compared with boys, girls showed a stronger increase in self-criticism ($t(364.46) = -2.35, p = .019, M_{\text{diff}} = -0.24$) and a higher level of depressive symptoms ($t(364.39) = -3.97, p < .001, M_{\text{diff}} = -0.20$). Thus, the role of adolescent gender was considered further in the main analyses, where it was examined as a potential moderator in a multi-group analysis.

Maternal Parenting. The model with maternal achievement-oriented psychological control, adolescent self-criticism, and adolescent depressive symptoms had a good fit ($\text{SBS-}\chi^2(6) = 9.14, ns; \text{RMSEA} = .04; \text{CFI} = .99; \text{TLI} = .97$). Indirect effects between maternal achievement-oriented psychological control and adolescent depressive symptoms through adolescent self-criticism were significant for both level and change ($\beta = 0.12, p < .001, 95\% \text{CI} [0.08; 0.16]$, and $\beta = 0.07, p = .006, 95\% \text{CI} [0.02; 0.12]$, respectively; Figure 3). Moreover, there were significant direct paths between achievement-oriented psychological control and adolescent depressive symptoms for both level and change (Figure 3).

Paternal Parenting. The model using paternal achievement-oriented psychological control, adolescent self-criticism, and adolescent depressive symptoms had a good fit ($SBS-\chi^2(8) = 11.73$, *ns*; RMSEA = .04; CFI = .99; TLI = .98). As in the model for maternal parenting, indirect effects between paternal achievement-oriented psychological control and adolescent depressive symptoms through adolescent self-criticism were significant for both level and change ($\beta = 0.10$, $p < .001$, 95%CI [0.06; 0.15], and $\beta = 0.05$, $p = .012$, 95%CI [0.01; 0.10], respectively; Figure 4). In contrast to the model using maternal parenting, direct paths between paternal achievement-oriented psychological control and adolescent depressive symptoms were non-significant for both level and change.

Combining Maternal and Paternal Ratings. The model examining the relative contributions of maternal and paternal parenting to self-criticism and depressive symptoms (Figure 5) had a good fit ($SBS-\chi^2(13) = 12.95$, *ns*; RMSEA = .00; CFI = 1.00; TLI = 1.00). Significant covariances were obtained between paternal and maternal level and change of achievement-oriented psychological control (Table 3, standardized covariance = 0.48 and 0.30, respectively). Compared with the results of the separate models, the effect of level of paternal psychological control on adolescent self-criticism was reduced to a trend ($p = .055$) and the effect of change in paternal psychological control on change of adolescent self-criticism became non-significant ($p = .249$, Table 3). Removing the non-significant paths also provided a good fit for the model ($SBS-\chi^2(15) = 17.34$, *ns*; RMSEA = .02; CFI = .99; TLI .99; figure not shown).

Moderation by Adolescent Gender. We evaluated whether adolescent gender would moderate the findings in the models presented above (Table 4). Multi-group analyses showed no difference between the constrained and unconstrained models of the mediation model with maternal ratings ($\Delta SBS-\chi^2(9) = 15.91$, *ns*), the model with paternal ratings ($\Delta SBS-\chi^2(9) = 14.67$, *ns*), or the model combining maternal and paternal ratings ($\Delta SBS-\chi^2(18) = 25.51$, *ns*). Thus, adolescent gender did not moderate effects in any of the models.

DISCUSSION

Psychologically controlling parenting has been proposed as a potential factor in the development of self-criticism in adolescents, with self-criticism potentially accounting for associations between parental psychological control and depressive symptoms (Barber, 1996, 2001; Blatt & Homann, 1992). Because existing studies focusing on the intervening role of adolescent self-criticism in the relationship between psychological control and depressive symptoms have not explicitly modeled within-person changes (e.g., Campos et al., 2010; Soenens et al., 2008; Soenens et al., 2010), this study revisited this hypothesis by examining the intervening role of self-

criticism both at the level of between-person differences and at the level of within-person change across time in a sample of Belgian adolescents.

A first important finding was the observation of substantial and systematic variation in within-person change across time for each of the constructs studied. This finding contrasts with the high levels of rank-order stability of psychologically controlling parenting (e.g., Barber et al., 2005), self-criticism (e.g., Zuroff, Blatt, Sanislow, Bondi, & Pilkonis, 1999), and depressive symptoms (e.g., Holsen, Kraft, & Vittersø, 2000; Reitz, Deković, & Meijer, 2005) typically observed in studies relying on cross-lagged longitudinal modeling. Although these previous studies suggest that adolescents' perceptions of psychologically controlling parenting, self-criticism, and severity of depression typically remain highly stable in terms of rank order, findings of the current study suggest that there is considerable variation across time in these variables in terms of within-person change (i.e., change relative to adolescents' baseline levels). It is increasingly argued that it is important to consider this within-person level of change because this type of change is psychologically meaningful to individuals, perhaps even more so than individuals' change in a rank order relative to other people (e.g., Voelkle, Brose, Schmiedek, & Lindenberger, 2014). Specifically with regard to self-criticism, our findings mesh with emerging evidence that self-criticism has both trait-like and state-like features, with the latter features even fluctuating across time intervals as short as days (Boone et al., 2012; Zuroff, Sadikaj, Kelly, & Leybman, 2016). In addition to variability in terms of within-person change, our data show a mean-level increase in self-criticism. This finding is line with Blatt's theory (Blatt, 2008; Blatt & Luyten, 2009), according to which mid-adolescence is an important and particularly sensitive period for the development of self-criticism, during which considerable fluctuations may occur in this personality dimension. Self-criticism may even peak during adolescence, which may explain in part the changes observed in this study. Indeed, research has suggested a heightened importance of self-critical personality features and achievement-oriented life events in the onset of depression in adolescence (Mazure & Maciejewski, 2003), and research has demonstrated a gradual decline in self-criticism from age 18 years onward into adulthood (Kopala-Sibley et al., 2013). If future longitudinal research were to confirm this peak of self-criticism in middle adolescence, this phenomenon could be typical of a more general trend observed in adolescent personality, which can be referred to as "defiance of the maturity principle" (Van den Akker, Dekovic, Asscher, & Prinzie, 2014). That is, adolescence appears to be an exception to the overall tendency for people to develop toward higher levels of maturity and resilience in terms of personality across the lifespan (Soto, John, Gosling, & Potter, 2011). Adolescence is marked by a temporary decrease in maturation and even a temporary increase in personality vulnerability, as indexed, for instance, by self-criticism. Future longitudinal research could attempt to

differentiate, through more person-oriented analyses, between adolescents displaying long-term and enduring increases in self-criticism and corresponding risk for psychopathology, and adolescents who merely display age-appropriate and temporary fluctuations in these variables (e.g., Vaillancourt & Haltigan, 2017).

The second aim of this study was to examine structural associations at the level of between-person differences and within-person changes in parenting, self-criticism, and adolescent depressive symptoms. The findings showed that self-criticism played an intervening role in associations between maternal or paternal psychological control and adolescent depressive symptoms, a finding consistent with cross-sectional and longitudinal research (e.g., Campos et al., 2010; Soenens et al., 2008; Soenens et al., 2012; Soenens & Vansteenkiste, 2010). This intervening role was evident both at the level of between-person differences (which probably reflect fairly stable between-person trait-like differences) and at the level of within-person change across time (which reflects the more state-like features of the constructs examined in this study). When adolescents experienced an increase in either parent's use of psychological control relative to their baseline experiences of psychological control, they displayed a simultaneous increase in self-criticism, which, in turn, was related to an increase in depressive symptoms. As such, our findings are in line with Blatt's theory that adolescence is a key developmental period for the socialization of self-criticism (Blatt, 2004; Blatt & Homann, 1992). However, replication and extension of our findings through long-term longitudinal studies and covering other life periods, such as pre-adolescence and emerging adulthood, are needed.

The third aim of this study was to examine the stability of the hypothesized structural associations across both adolescent and parent gender. We did not find evidence that adolescent gender moderated the relationships between parenting, self-criticism, and depressive symptoms at the level of between-person differences and within-person change. There have been quite mixed findings concerning the difference between boys and girls in the relationships between parenting, self-criticism, and depressive symptoms, with most studies failing to find a systematic moderating role of adolescent gender (Soenens et al., 2008; Soenens et al., 2010). This lack of moderation by adolescent gender does not preclude the possibility that gender differences might emerge when the variables are assessed in more specific domains, a possibility that awaits testing in future research. For instance, girls may experience more pronounced psychological control and self-criticism in different domains from boys, with sports and athletic competence, for instance, being a typically more relevant domain for boys, and school and academic competence being typically more relevant for girls (Adler, Kless, & Adler, 1992; Eccles, Jacobs, & Harold, 1990; Van Houtte, 2004).

With regard to the influence of parental gender on the hypothesized structural relations, we found that perceived maternal psychological control had a stronger and more consistent association with self-criticism than paternal psychological control. In light of a few cross-sectional studies demonstrating unique associations of maternal and paternal parenting with self-criticism (e.g., Bleys et al., 2016; Soenens et al., 2010), this finding is somewhat unexpected and warrants further research. Because both maternal and paternal ratings of parenting were related to self-criticism when considered separately, and because the unique effects of maternal parenting emerged only when accounting for the substantial covariance between maternal and paternal parenting, more research is clearly needed. Gendered differences in parental roles or stronger receptivity of adolescents to maternal (compared with paternal) expectations, as well as typically different amounts of time spent with the child (e.g., Crouter, Bumpus, Maguire, & McHale, 1999; Hochschild & Machung, 2012), might explain the more pronounced effect of maternal (versus paternal) parenting in our study.

A second difference between maternal and paternal parenting was that, in addition to the indirect effects, maternal psychological control also displayed a direct effect on depressive symptoms, both at the level of between-person differences and at the level of within-person change. This finding suggests that additional intervening variables may be involved in the relationship between maternal psychological control and depressive symptoms. Future research may focus on, for instance, emotion regulation difficulties (e.g., Cui, Morris, Criss, Houlberg, & Silk, 2014) and the frustration of adolescents' basic psychological needs for autonomy, competence, and relatedness (e.g., Costa, Soenens, Gugliandolo, Cuzzocrea, & Larcan, 2015; Soenens & Vansteenkiste, 2010), as these concepts have been suggested to play an important role in the association between psychologically controlling parenting and vulnerability for depression.

Taken together, the findings of this study provide further evidence for the importance of prevention and intervention efforts in adolescence, as adolescence is a time of considerable change even for typically developing children (Steinberg, 2001). Indeed, the results of the current study suggest that increased attention to the changing nature of these relationships could benefit both the treatment plan and therapeutic interventions for adolescents presenting with depression. It may be the case that small changes in psychologically controlling parenting over time may tip the balance in some adolescents and put them on the pathway to depression (Bringmann et al., 2013; Wichers, 2014). Treatment and intervention efforts in this regard may focus on adolescents' personal functioning and/or on parents' parenting style. For example, adolescents could receive psychoeducation on self-criticism and be taught skills that could help them develop a healthy self-image (e.g. by focusing on how adolescents "talk" to themselves). Recent universal prevention programs targeting perfectionism in adolescents have yielded promising

results (Nehmy & Wade, 2015). Further, the same strategy may also work with parents. Parents can be taught to instruct their children with realistic expectations about the children's behavior and to use a positive communication style with them. An example of a positive communication style that may provide an alternative to psychologically controlling parenting is an autonomy-supporting parenting style, where parents encourage adolescents' initiative and create room for authenticity (Soenens et al., 2007). Recent research has provided evidence for the effectiveness of teaching parents to engage in a more autonomy-supportive style, ultimately improving children's mental health (Joussemet, Mageau, & Koestner, 2014). In this regard, future studies should also investigate possible sources of influence on parental psychological control. A number of studies have already identified such antecedents of parental use of psychological control, demonstrating a role for both adolescent behavior (with problem behaviors and adolescents' failure to achieve parental goals eliciting more parental psychological control) and parent characteristics, such as parents' anxiety about the increased autonomy of their adolescents (Soenens et al., 2006) and parents' own level of self-criticism (Soenens, Elliot, et al., 2005). In addition to the role of fairly stable parent characteristics, research has also begun to demonstrate the role of more transient experiences in parents' use of psychological control, showing that parents are more likely to resort to psychologically controlling practices on days when they experience more negative affect (Aunola, Viljaranta, & Tolvanen, 2016) and have experiences of incompetence, pressure, and social alienation (Mabbe, Soenens, Vansteenkiste, van der Kaap-Deeder, & Mouratidis, 2018).

Limitations and Directions for Future Research

First, although the use of two-wave data and Latent Change Models to estimate the intervening role of self-criticism at the level of within-person change is a clear improvement over previous cross-sectional research, our findings are hampered by important limitations. Specifically, our data do not allow us to make strong statements about the direction of effects involved. The Structural Equation Models essentially provide an estimation of correlated change, determining whether changes in one variable are associated with corresponding changes in another variable over the same time interval. Such correlated change can always be interpreted in two ways. For instance, parents might respond to increases in adolescents' depressive symptoms by increasing psychological control. To better determine the order of effects in the hypothesized sequence of events, future longitudinal studies should include more than two waves (e.g., Grimm, An, McArdle, Zonderman, & Resnick, 2012).

Second, the current sample was homogeneous in terms of race and ethnicity. Future studies should investigate whether the current findings can be replicated in more heterogeneous samples, such as ethnically diverse samples and clinical samples. For example, in addition to displaying relatively higher levels of self-

criticism, individuals in clinical samples have been shown to display more room for change in self-criticism (Zuroff, Mongrain, & Santor, 2004). In such samples, changes in parenting and self-criticism may also affect therapeutic success and relapse. Notably, the current sample showed mean-level stability in depressive symptoms, a finding that is somewhat surprising given that previous studies have often reported that symptoms of depression increase during adolescence, especially among girls (e.g., Ge, Lorenz, Conger, Elder, & Simons, 1996; Hankin et al., 1998). It is possible that the age of the adolescents investigated in the current study (between 14.5 and 15.5 years) is characterized by a temporary stagnation in the increase of depressive symptoms compared with the more stressful transition periods from childhood to early adolescence and from late adolescence to adulthood (e.g., Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Ge, Conger, & Elder, 2001), although this hypothesis awaits further testing. However, the lack of changes in adolescent depressive symptoms might also be attributable to our reliance on a “normative” sample of relatively well-functioning adolescents. Nevertheless, at least one-third of the adolescents in the current study were at risk for clinical depression (see also Measures).

Third, while the current study focused on self-criticism, future studies should investigate dependency (i.e., difficulties with separation and loss in relationships; Blatt, 2008), which Blatt (2004) conceptualized as another dimension of personality vulnerability. This research could address hypothesized antecedents of this personality dimension such as dependency-oriented psychological control (i.e., parental use of psychological control, making the adolescent more dependent on the parents; Soenens et al., 2010) and inconsistent parental care (McCranie & Bass, 1984). On a related note, another direction for future research is to examine the effects of psychological control in combination with other parenting dimensions, in particular parental responsiveness (warmth), a parenting dimension also strongly involved in adolescents’ psychosocial adjustment. While it may be that the effects of parental psychological control are exacerbated when parents are low in responsiveness, evidence suggests that a combination of high psychological control and high responsiveness is particularly predictive of children’s maladjustment (e.g., Aunola & Nurmi, 2004; Aunola & Nurmi, 2005; Gargurevich & Soenens, 2016). With this combination of parenting dimensions, adolescents would be more likely to experience strong loyalty conflicts toward parents, feeling torn between parents who are experienced as pressuring on the one hand and a desire to gain approval from parents who are generally involved and warm on the other hand. This combination of parenting dimensions is also reminiscent of the concept of overprotective parenting, which has received increasing attention and has also been linked to various maladaptive developmental outcomes in children and adolescents (Segrin, Givertz, Swaitkowski, & Montgomery, 2015; Segrin, Wosidlo, Givertz, & Montgomery, 2013; van Ingen et al., 2015).

Fourth, the current study relied solely on self-reports by adolescents, which raises the question of whether the changes observed in psychologically controlling parenting are attributable to true changes in parental behavior or are the result of changing perceptions on the part of the adolescent ^{Footnote 2}. Adolescents' tendency to increasingly perceive their parents as psychologically controlling might also be a function of normal adolescent development and, more specifically, of adolescents' tendency to gradually become more autonomous (Allen, Hauser, Bell, & O'Connor, 1994; Collins & Russell, 1991; De Goede, Branje, & Meeus, 2009). Given this tendency to become more independent, adolescents might more easily experience parental involvement as intrusive, leading to an increase in perceived psychologically controlling parenting. To disentangle the effects of parents' actual behavior and adolescents' perceptions of this behavior, future research should ideally combine adolescent self-report measures and observations of parent–adolescent interactions.

Conclusion

Based on Blatt's theory of personality development (Blatt, 2008; Blatt & Shichman, 1983), the current study found evidence that differences between Belgian adolescents' levels of self-criticism were predicted by differences in levels of psychologically controlling parenting. In turn, the adolescents' levels of self-criticism were predictive of their levels of depressive symptoms. Moreover, the study found evidence that increases in self-criticism occurring during adolescence are related to adolescents' perception that their parents are relying increasingly on psychologically controlling parenting, especially when such controlling messages are conveyed by the mother. These changes in self-criticism are in turn related to changes in adolescent depressive symptoms. Our results underscore the importance of testing hypotheses about the intervening role of personality vulnerability in associations between the parenting environment and adolescent symptoms of psychopathology at the level of both between-person differences and within-person change.

Footnotes

1. In addition to the Cronbach's alphas reported in the Measures section, we calculated the Average Variance Extracted (AVE) and the Composite Reliability (CR) as additional indicators of reliability, thereby using the loadings of the parcels on the latent variable constructs in the fitted Latent Change Model. For achievement-oriented psychological control of both parents and adolescent depressive symptoms, the AVE and CR were well above conventional criteria ($AVE > 0.5$, $CR > 0.7$; Hair, Black, Babin, & Anderson, 2010), with estimates between 0.74 and 0.81 for AVE and estimates between 0.90 and 0.93 for CR. The variable self-criticism, however, just failed to reach the threshold criteria, with estimates between 0.41 and 0.44 for AVE, and between 0.66 and 0.68 for CR. However, considering that Cronbach's alphas were acceptable (.69 at T1 and .70 at T2), inter-parcel correlations were significant, the explained variance of each parcel was significant, and the Latent Change Model for adolescent self-criticism showed a good fit ($RMSEA = .07$; $CFI = .95$; $TLI = .97$), overall we conclude that the reliability of the self-criticism measure is adequate.

2. To ascertain that associations obtained in this study were not due solely to shared method variance, in an ancillary set of analyses we also examined associations between total scores of parent-reported (rather than adolescent-reported) achievement-oriented psychological control and adolescent self-criticism and depressive symptoms. Because parent-reported measures of achievement-oriented psychological control were available only at T1 (with $N = 182$ for maternal ratings and $N = 199$ for paternal ratings), these analyses are not reported in the main text. Specifically, we estimated models in which parent-reported achievement-oriented psychological control at T1 was modeled as a predictor of the level and change parameters of both adolescent self-criticism and depressive symptoms. These models also included all possible associations among the level and change parameters of self-criticism and depressive symptoms. Models were run separately for maternal and paternal ratings. Results showed that both mother-reported ($\beta = 0.14$, $p < .05$) and father-reported ($\beta = 0.19$, $p < .05$) achievement-oriented psychological control were related significantly to adolescents' level of self-criticism, which, in turn, was related positively to level of depressive symptoms. However, there were no direct associations between parent-reported achievement-oriented psychological control and level of depressive symptoms and changes in self-criticism. Furthermore, for maternal parenting, there were no direct associations between parent-reported achievement-oriented psychological control and changes in depressive symptoms, while paternal parenting did have a direct association with changes in depressive symptoms. To more fully address the role of parent-reported achievement-

oriented psychological control in such changes, future research should include parent reports of achievement-oriented psychological control at every wave of assessment. Although we measured parent-reported achievement-oriented psychological control only at T1, these findings provide some confidence that associations of achievement-oriented psychological control with adolescent self-criticism are not due solely to shared method variance.

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Table 1. Fit indices, means, and variances of latent change models

	Parameter estimates						
	Fit indices			Initial level		Change	
	RMSEA	CFI	TLI	Mean	Variance	Mean	Variance
APC- M	.05	.99	.99	1.76***	0.54***	0.01	0.33***
APC- P	.02	1.00	1.00	1.85***	0.54***	0.04	0.43***
SC	.07	.95	.93	-0.21*	2.81***	0.52***	1.97***
DEP	.08	.97	.97	0.77***	0.27***	0.06	0.33***

Note. APC- M = maternal achievement- oriented psychological control; APC- P = paternal achievement- oriented psychological control; CFI = comparative fit index; DEP = adolescent depressive symptoms; RMSEA = root mean squared error of approximation; SC = adolescent self- criticism; TLI = Tucker–Lewis index. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 2. Correlations between level and change variables

Variables	1	2	3	4	5	6	7
1. APC- M level	–						
2. APC- M change	–.41***	–					
3. APC- P level	.49***	–.21***	–				
4. APC- P change	–.04	.31***	–.42***	–			
5. SC level	.31***	–.04	.26***	–.01	–		
6. SC change	–.11*	.16**	–.11*	.10°	–.46***	–	
7. DEP level	.25***	–.11*	.11*	–.03	.40***	–.18***	–
8. DEP change	–.02	.20***	–.04	.12*	–.07	.35***	–.47***

Note. Zero- order correlations. APC- M = maternal achievement- oriented psychological control; APC- P = paternal achievement- oriented psychological control; SC = adolescent self- criticism; DEP = adolescent depressive symptoms. ° $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3. Estimates of the final model

Regressions	<i>b</i>	<i>SE</i>	β	<i>p</i> value	95% CI [;]
				(β)	(β)
APC- M level → SC level	0.50	0.11	0.24	< .001	[0.14; 0.34]
APC- M change → SC change	0.38	0.15	0.18	< .01	[0.05; 0.30]
APC- P level → SC level	0.26	0.14	0.12	.06	[-0.00; 0.24]
APC- P change → SC change	0.13	0.11	0.07	.25	[-0.05; 0.18]
SC level → DEP level	0.13	0.02	0.39	< .001	[0.30; 0.48]
SC change → DEP change	0.17	0.03	0.34	< .001	[0.24; 0.45]
APC- M level → DEP level	0.11	0.04	0.16	< .01	[0.06; 0.26]
APC- M change → DEP change	0.14	0.06	0.13	.03	[0.01; 0.25]
Covariances					
APC- M level ↔ APC- M change	-0.13	0.02	-0.40	< .001	[-0.50; -0.31]
APC- M level ↔ APC- P level	0.23	0.03	0.48	< .001	[0.38; 0.57]
APC- P level ↔ APC- P change	-0.15	0.03	-0.41	< .001	[-0.50; -0.32]
APC- P level ↔ APC- M change	0.07	0.02	-0.19	< .001	[-0.30; -0.09]
APC- P change ↔ APC- M change	0.07	0.02	0.30	< .001	[0.18; 0.41]
SC level ↔ SC change	-0.66	0.09	-0.47	< .001	[-0.57; -0.38]
DEP level ↔ DEP change	-0.11	0.02	-0.52	< .001	[-0.61; -0.43]
Estimate of the indirect effect					
APC- M level → DEP level	0.07	0.02	0.09	< .001	[0.05; 0.14]
APC- M change → DEP change	0.06	0.03	0.06	.02	[0.01; 0.11]
APC- P level → DEP level	0.03	0.02	0.05	.06	[-0.00; 0.09]
APC- P change → DEP change	0.02	0.02	0.02	.25	[-0.02; 0.06]

Note. APC- M = maternal achievement- oriented psychological control; APC- P = paternal achievement- oriented psychological control; SC = adolescent self- criticism; DEP = adolescent depressive symptoms. *b* = unstandardized regression estimate; *SE* = standard error of *b*; β = standardized estimate; 95% CI = 95% confidence interval. Single- headed arrows represent predictor to outcome regression paths and double- headed arrows represent covariances.

Table 4. Fit indices for the models investigating moderation by adolescent gender

Model		Fit indices			
		SBS- χ^2	RMSEA	CFI	TLI
APC- M	Unconstrained	15.31	.04	.99	.98
	Constrained	31.86	.05	.97	.96
APC- P	Unconstrained	10.77	.00	1.00	1.00
	Constrained	26.41	.04	.98	.98
APC- M and APC- P	Unconstrained	18.52	.00	1.00	1.00
	Constrained	45.21	.03	.98	.98

Note. APC- M = Model with maternal achievement- oriented psychological control; APC- P = model with paternal achievement- oriented psychological control; APC- M and APC- P = model with both maternal and paternal achievement- oriented psychological control; SBS- χ^2 = Satorra–Bentler scaled chi- square; CFI = comparative fit index; RMSEA = root mean squared error of approximation; TLI = Tucker–Lewis index.

Fig. 1. Theoretical model adopted in this study. Self- criticism (SC) has an intervening role in the relationship between achievement- oriented psychological control (APC) and depressive symptoms (DEP) for both initial level and change across the 1- year interval.

Fig. 2. Latent change model (Hertzog & Nesselroade, 2003) of achievement- oriented psychological control (APC). A latent APC variable is constructed at T1 and T2 (APC_T1, APC_T2) by three parcels each containing item scores (APC1_T1, APC2_T1, etc.). The regression coefficients of these parcels on to the latent APC construct are fixed across the two waves (1, a, b) and error covariances are allowed between identical parcels across waves. A higher- order latent “level” of achievement- oriented psychological control is constructed by fixed- 1 regression paths to both latent APC variables at the two waves and a “change” variable is constructed by only one regression path toward the latent APC variable at T2.

Fig. 3. Final model for maternal parenting. APC = achievement- oriented psychological control; SC = adolescent self- criticism; DEP = adolescent depressive symptoms. Coefficients are standardized values. R^2 SC level = .09; R^2 SC change = .04; R^2 DEP level = .21; R^2 DEP change = .15. $*p < .05$, $**p < .01$, $***p < .001$.

Fig. 4. Final model for paternal parenting. APC = achievement- oriented psychological control; SC = adolescent self- criticism; DEP = adolescent depressive symptoms. Coefficients are standardized values. R^2 SC level = .06; R^2 SC change = .02; R^2 DEP level = .20; R^2 DEP change = .13. $*p < .05$, $**p < .01$, $***p < .001$.

Fig. 5. Final model for the combination of maternal and paternal parenting. APC = achievement- oriented psychological control; SC = adolescent self- criticism; DEP = adolescent depressive symptoms. Coefficients are standardized values. R^2 SC level = .10; R^2 SC change = .04; R^2 DEP level = .21; R^2 DEP change = .15. $^{\circ}p < .10$, $*p < .05$, $**p < .01$, $***p < .001$.