

RESEARCH ARTICLE

Longitudinal relations between maternal and adolescent emotion dysregulation and maternal autonomy support

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Abstract

Introduction: Maternal characteristics and mother–adolescent relationships are thought to affect the emotional development of adolescents. Adolescents can learn to regulate their emotions by observing their mothers, and this is further facilitated by maternal autonomy support. Therefore, this study longitudinally examined the associations among maternal emotion dysregulation, maternal autonomy support, and adolescent emotion dysregulation.

Method: Participants were 466 Dutch adolescents (54.51% males; $M_{age} = 14.03$, $SD = 0.45$) and 462 mothers ($M_{age} = 45.49$, $SD = 4.47$), who completed self-reports of emotion dysregulation and maternal autonomy support for five consecutive years.

Results: Random Intercept-Cross Lagged Panel Model analyses showed that at the between-family level, maternal emotion dysregulation was correlated with adolescent emotion dysregulation, adolescent-reported maternal autonomy support, and mother-reported maternal autonomy support; and adolescent emotion dysregulation was correlated with adolescent-reported maternal autonomy support. At the within-family level, higher than usual maternal emotion dysregulation was positively related to adolescent emotion dysregulation at Time 1, yet, was negatively related to adolescent emotion dysregulation at other time points concurrently, and predicted lower adolescent emotion dysregulation in the next year. Also, higher than usual adolescent emotion dysregulation was related to lower adolescent-reported maternal autonomy support both concurrently and the next year.

Conclusions: Both mothers and adolescents played an important role in adolescent emotional development. To promote adolescent emotional development, it is important to target both maternal emotion dysregulation to understand the development of adolescent emotion dysregulation, and adolescent emotion dysregulation to prevent mothers from providing less autonomy support to their adolescents.

KEYWORDS

adolescence, autonomy support, emotion dysregulation

1 | INTRODUCTION

Adolescence is a period in which novel emotional experiences emerge due to physical and cognitive maturation (Morris et al., 2007). This period is also marked by increased negative affect (Petersen et al., 2018; Van Oort et al., 2009) and decreased positive affect (Weinstein et al., 2007). It is important for adolescents to successfully regulate these emotions for better mental health (Betts et al., 2009). The parent-adolescent relationship has an important role in the emotional development of adolescents (Aquilino, 1997). Children's emotion regulation is modeled by their parents' emotion regulation capabilities, and parents' emotion regulation capabilities may affect their parenting practices, and in turn, the emotional

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development of their children (Morris et al., 2007; Morris et al., 2017). Therefore, it is important to study how maternal characteristics and maternal parenting practices are related to adolescents' emotion regulation.

Emotion regulation is the ability to monitor, evaluate and change one's emotional reactions to succeed in specific goals (Thomson, 1994). Learning how to regulate one's emotions is one of the most important tasks because emotion regulation predicts whether people successfully adjust to life (Gross, 1998). Adolescence can be a challenging period for emotion regulation because adolescents report less positive affect and experience stronger cognitive and physical reactions to emotional stimuli than the youth of other ages (Silk et al., 2009; Weinstein et al., 2007). At the same time, youth become more capable of regulating these strong and varying emotional reactions during adolescence (Silvers et al., 2012). For example, a 5-year longitudinal study showed that particularly during early adolescence, adolescents experience fluctuations in the intensity of positive and negative emotions across days, yet these fluctuations settle down for most adolescents as they mature (Maciejewski et al., 2015). Adolescents who regulate their emotions less well or use maladaptive emotion regulation strategies are more likely to have higher internalizing and externalizing problems as well as poorer social well-being than adolescents who regulate their emotions well (Betts et al., 2009; Chervonsky & Hunt, 2019; Maciejewski et al., 2019; Silk et al., 2003; Young et al., 2019). Hence, it is important to examine why some adolescents are better than others at regulating their emotions. The current study aimed to examine longitudinal associations between maternal and adolescent emotion dysregulation and maternal autonomy support at the within-family level.

1.1 | Maternal effects on adolescent emotion regulation

The Tripartite Model of the Impact of the Family on Children's Emotion Regulation and Adjustment (Morris et al., 2007) suggests that children learn adaptive and maladaptive emotion regulation through three important factors that are observations (such as observational learning, modeling, and social referencing), emotion-related parenting practices, and emotional climate of the family (e.g., attachment or marital relations). Socialization of emotion regulation can occur through family interactions in which adolescents observe parental behaviors and experience parenting practices (Morris et al., 2007). Because mothers are more involved in child development compared to fathers (Craig & Mullan, 2011), we focused on the emotion socialization processes between mothers and adolescents. An important mechanism by which parents might affect the development of adaptive and maladaptive emotion regulation is through adolescents' observational learning of their parents' emotion regulation skills (Morris et al., 2017). Adolescents can look at their parents to learn how to react to emotional situations and can internalize emotion regulation capabilities through modeling and social referencing (Bariola et al., 2011; Cole et al., 1994; Morris et al., 2007). Thus, maternal emotion regulation (in)capabilities might directly affect their adolescents' emotional adjustment. Empirical studies have shown that how mothers deal with their emotions predicts the emotional adjustment of adolescents. For example, adolescents, whose mothers are less accepting and expressing their own emotions, are likely to show increased internalizing problems (Katz & Hunter, 2007). Also, higher family emotional expressiveness is related to fewer psychological problems, a more positive self-concept, and fewer behavioral problems in adolescents (Bronstein et al., 1993).

Another important source of development of adolescents' emotion regulation (in)capabilities is both negative and positive parenting practices (Morris et al., 2007, 2017). Negative parenting practices, such as psychological control, may result in emotional maladjustment (Cui et al., 2014) and positive parenting practices such as autonomy support may result in emotional adjustment (Brenning et al., 2015) among youth. As psychological control and autonomy support are found to be negatively correlated (Costa et al., 2016), we expected autonomy support to be negatively related to the emotion dysregulation as well.

One important parenting practice for healthy development is autonomy support, which is characterized by recognizing and accepting children's perceptions and feelings and encouraging their self-initiated expressions (Soenens et al., 2007). Autonomy support is critical for the healthy emotional development of adolescents because it provides an egalitarian structure by respecting adolescents' thoughts and feelings (Joussemet et al., 2008; Morris et al., 2017). If the family encourages and accepts the expression of emotions, adolescents might experience less difficulty regulating their emotions.

Further, maternal emotion regulation (in)capabilities might also influence how adolescents regulate their emotions indirectly through parenting practices (Morris et al., 2007). Previous studies were well-documented that maternal emotion regulation difficulties can magnify negative parenting practices (Crandall et al., 2015; Lorber, 2012). Mothers who are better able to regulate their emotions are more likely to show positive parenting such as maternal warmth and sensitivity, and less likely to show negative parenting such as child maltreatment and harsh parenting (Crandall et al., 2015). We, therefore, expected maternal autonomy support and maternal emotion dysregulation to be related to adolescent emotion regulation over time, and we examined the mediating effect of maternal autonomy support in the association between maternal emotion dysregulation and adolescent emotion dysregulation.

1.2 | Adolescent effect on maternal autonomy support

When examining the effects of parenting and parental behavior on adolescent emotion dysregulation, it is important to take into account that adolescents might also affect their mothers' behaviors (Branje et al., 2010). The Tripartite Model of the Impact of the Family on Children's Emotion Regulation and Adjustment (Morris et al., 2007) also suggests that emotion regulation (in)capabilities of children can influence observational learning processes, specific parenting practices, and the emotional climate of the family. For example, mothers tend to adjust their parenting practices according to the emotional adjustment of the adolescents (Pardini et al., 2008; Sameroff, 2009). Furthermore, parents might expect their children to regulate their emotions better as they mature (Dix, 1991), and when this expectation is met, parents might be more likely to support their mature adolescents' autonomy. Supporting autonomy might be easier when adolescents have better emotion regulation since this allows mothers to rely more on their adolescents to show adjusted behavior. Previous studies have shown mutual positive relations between maternal criticism and adolescent emotion regulation difficulties (Skripkauskaitė et al., 2015), and between parental psychological and behavioral control and adolescent emotion regulation difficulties (Van Lissa et al., 2019). Also, adolescents' depressive symptoms and parental autonomy support were found to be bi-directionally and negatively related to each other (Van der Giessen et al., 2014). Moreover, when adolescents showed more emotion dysregulation, mothers were likely to show less autonomy support to them over time (Brenning et al., 2015). Therefore, the current study took into account the effect of adolescent emotion dysregulation on maternal autonomy support and maternal emotion dysregulation.

1.3 | The current study

The current study examined the effect of maternal emotion dysregulation on adolescent emotion dysregulation and the mediating role of maternal autonomy support in this association, thereby taking into account the effects of adolescent emotion dysregulation on maternal emotion dysregulation and parenting. This study aimed to examine the within-family predictors of emotion dysregulation. One of the widely used methods is Cross-Lagged Panel Models, yet these models mainly allow to test between-family prospective effects (Hamaker et al., 2015). Between-family and within-family level analyses answer different research questions. For example, at the between-family level, we can examine how differences in emotion dysregulation and autonomy support of mothers across families are related to differences in adolescents' emotion dysregulation across families. At the within-family level, we can examine how fluctuations in adolescent and mother behaviors within families across time preceded each other. The focus of the current study was on the within-family prospective associations. Therefore, we used a Random Intercept-Cross Lagged Panel Model (RI-CLPM), which distinguishes between-family variance (stable between-family differences) and within-family variance (within-family fluctuations) (Hamaker et al., 2015). This study aimed to examine changes in adolescent and maternal behaviors compared to their usual behavior, as processes of influence typically take place within the family rather than between families. That is, the study assessed within-family rather than between-family effects, thereby testing whether increases in mothers' emotion regulation or autonomy support compared to their usual emotion regulation or autonomy support led to more adolescent emotion regulation than usual.

In light of the literature, the following hypotheses were formulated:

1. As previous studies showed robust positive relations among families between maternal emotion regulation skills, positive parenting practices, and adolescent emotion regulation (in)capabilities and psychological adjustment (Morris et al., 2007, 2017), we expected positive correlations between maternal emotion dysregulation and adolescent emotion dysregulation, and negative correlations of maternal emotion dysregulation and adolescent emotion dysregulation with maternal autonomy support both at the between-family and within-family level. At the between-family level, this correlation means that when mothers show higher emotion dysregulation than other mothers, adolescents also show higher emotion regulation than other adolescents, whereas, at the within-family level, this correlation means that when mothers show more emotion dysregulation than usual, their adolescents also show more emotion dysregulation than usual concurrently in the same year.
2. As adolescents are likely to show worse psychological adjustment outcomes when mothers show nonadaptive emotion regulation strategies (Katz & Hunter, 2007), we expected a direct positive effect of maternal emotion dysregulation on adolescent emotion dysregulation at the within-family level. Thus, when mothers show more emotion dysregulation than usual, their adolescents will show more emotion dysregulation than usual next year.
3. As maternal autonomy support offers children the opportunity to express their emotions while being accepted, it helps children to develop better emotion regulation skills (Joussemet et al., 2008; Morris et al., 2017). Thus, we expected a direct negative effect of maternal autonomy support on adolescent emotion dysregulation. That means that when mothers show more autonomy support than usual, their adolescents will show less emotion dysregulation than usual the next year.

4. Also, when mothers show less emotion regulation difficulties, they are more likely to show supportive parenting behaviors (Morelen et al., 2016). Therefore, we expected maternal autonomy support to partially mediate the relation between maternal emotion dysregulation and adolescent emotion dysregulation at the within-family level. Thus, we expected that when mothers show more emotion dysregulation than usual, they will show less autonomy support than usual the next year, and in return, their adolescents will show more emotion dysregulation than usual in the subsequent year.
5. Adolescents might elicit parenting behaviors by their behaviors and emotional adjustment (Branje et al., 2010; Van Lissa et al., 2019). Hence, we expected to find a negative effect of adolescent emotion dysregulation on maternal autonomy support at the within-family level.

2 | METHODS

2.1 | Participants and procedure

The present study used data from the ongoing longitudinal Dutch Research on Adolescent Development and Relationships-Young (RADAR-Y; Branje & Meeus, 2018) research project. The data from the second wave to the sixth wave, collected annually between 2007 and 2011, were used for the present study since data on all variables of interest were available in that period. The RADAR-Y study is an ongoing longitudinal cohort study of adolescents. Participants were recruited from randomly selected primary schools in The Netherlands. Children who were in 6th grade were invited along with their parents, siblings, and friends if all family members were able to understand and speak the Dutch language. In the current study, we used five measurement waves of annual data between (Wave 2 and Wave 6) in which the data is available for maternal autonomy support, and adolescent and maternal emotion dysregulation. At the second wave (Time 1 of this study), 466 adolescents and 462 mothers participated. The mean age of adolescents and their mothers at Time 1 was 14.03 ($SD = 0.45$) and 45.49 ($SD = 4.47$) respectively. 42.90% ($n = 200$) of the adolescents identified as being female. 71.20% ($n = 332$) of mother-adolescent dyads (among mothers who reported their socioeconomic status; $n = 454$) had a middle or high socioeconomic status background. 444 (95.30%) of adolescents identified themselves as native Dutch. Most adolescents (85.80%) reported living with both parents.

Ethical approval of the research project was obtained from the University Medical Centre Utrecht. Written information about the RADAR-Y project was presented to the families, and in each wave, both mothers and adolescents provided written informed consent. Research assistants conducted family visits to collect the data and assisted the participants verbally along with the written instructions. Each participant received 20€ in each wave for their participation.

2.2 | Measures

2.2.1 | Emotion dysregulation

The Dutch version of the Difficulties in Emotion Regulation Scale (DERS) was used to measure both adolescent and maternal emotion dysregulation (Neumann et al., 2010). The DERS consists of subscales for Lack of Emotional Awareness, Lack of Emotional Clarity, Impulse Control Difficulties, Difficulties Engaging in Goal-directed Behavior, Nonacceptance of Emotional Responses, and Limited Access to Emotion Regulation Strategies, with 32 items in total. Participants responded to how the items apply to them on a 5-point Likert-type scale from 1 (*almost never*) to 5 (*almost always*). Since items of the Lack of Emotional Awareness subscale (5 items) were negatively correlated with items of the other subscales, this subscale was excluded. The mean of the remaining items was computed for each wave for the mother and adolescent separately. Example items are “When I’m upset, I lose control over my behavior,” and “I am confused about how I am feeling”. Higher scores indicated worse emotion regulation abilities, thus, higher emotion dysregulation. The total scale inter-item reliability, excluding the Lack of Emotional Awareness subscale, ranged between 0.95 and 0.96 across waves for adolescents, and between 0.90 and 0.92 for mothers.

2.2.2 | Autonomy support

The Dutch version of the Balanced Relatedness scale (Shulman et al., 1997) was used to measure maternal autonomy support. The Balanced Relatedness scale consists of seven items and was used to measure both adolescent and mother-reported maternal autonomy support. An example item is “I/my mother allow(s) my child/me to think over his/my own ideas.” Participants responded on a 4-point Likert scale ranging from 1 (*not true*) to 4 (*very true*). Higher scores indicated more autonomy support. Bivariate correlation coefficients between mother and adolescent reports were significant, and

within-time correlation ranged between $r = .148$, $p = .002$ and $r = .277$, $p < .001$. Hence, we decided to run two separate models with mother and adolescent reports of maternal autonomy support. Inter-item reliability of the Balanced Relatedness scale ranged between 0.82 and 0.86, and between 0.84 and 0.89 across waves for adolescents and mothers respectively.

2.2.3 | Covariates

2.2.3.1 | Gender

Gender was dummy coded (0 = boy, 1 = girl). We controlled for the gender of the adolescents by regressing adolescent emotion dysregulation on gender at each wave.

2.2.3.2 | Family SES

Family SES was dummy coded in which 0 indicated middle or high family SES and 1 indicated low family SES. We controlled for family SES by regressing random intercepts of adolescent emotion dysregulation, maternal autonomy support, and maternal emotion dysregulation on family SES.

2.2.3.3 | Family structure

Family structure was dummy coded in which 0 indicated living with both parents and 1 indicated all other living arrangements. We controlled for family structure by regressing random intercepts of adolescent emotion dysregulation, maternal autonomy support, and maternal emotion dysregulation on family structure.

2.3 | Data analyses

2.3.1 | Power analyses

Power analyses were conducted in RStudio (RStudio Team, 2015) after creating RStudio codes for the power analyses (Preacher & Coffman, 2006; May). We conducted power analyses at the model level to test statistical power to estimate our model based on the available sample size and complexity of the model. We calculated power with the Root Square Mean of Approximation (RMSEA) and alternative RMSEA as suggested by Kline (2016). This power analysis estimates the statistical power based on the N and df . We tested the *close fit* hypothesis, which indicates the estimated probability that we can reject a model if it does not fit closely to the population. For the Null RMSEA, we used ≤ 0.05 and for the Alternative RMSEA 0.08. (MacCallum et al., 1996; Preacher and Coffman (2006). The close fit hypothesis showed a power of 0.99 (when $N = 491$, $\alpha = .01$ and $df = 94$), suggesting high power to detect poor-fitting models.

2.3.2 | Missing data

Sample attrition across the five waves was 20.00% ($n = 93$) for adolescents and 18.90% ($n = 88$) for mothers. Frequency analyses showed that overall, 12.11% of the data was missing across all variables and waves, with most of the missingness being due to planned missingness for about half the sample on the DERS at T1. Little's MCAR test was significant, suggesting that missing was not completely at random ($\chi^2(819) = 1019.06$, $p < .001$). Yet, we also calculated χ^2/df ratio because it is less sensitive to large sample sizes (Li, 2013). The χ^2/df ratio of 1.24 showed a good fit of the data, which indicates that missing data would not lead to biased results (Bollen, 1989; Hooper et al., 2008). Full Information Maximum Likelihood estimation was used to handle participants' missing data (Satorra & Bentler, 1994). The missingness was mostly due to attrition. Follow-up T-test and Chi-square analyses showed that adolescents who dropped out and who complete all waves did not differ based on gender, socioeconomic status, difficulties in emotion regulation, and autonomy support. Likewise, mothers who dropped out and who complete all waves did not differ based on difficulties in emotion regulation and autonomy support. However, mothers were less likely to drop out as their socioeconomic status increased (from low [71.31%] to medium [83.23%] to high [85.96%]).

2.3.3 | Analytic strategy

Descriptive statistics and bivariate correlations were calculated in SPSS version 25 (IBM Corporation, 2017). The data were analyzed in Mplus Version 8.2 (Muthén & Muthén, 1998-2012) by using Random Intercept-Cross Lagged Panel Model (RI-CLPM). RI-CLPM is an extended version of the traditional Cross Lagged Panel Model (CLPM). Random Intercept-Cross

Lagged Panel Model (RI-CLPM) disentangles between-family and within-family variance (Hamaker et al., 2015). It applies a Multilevel Modeling Approach to Structural Equation Modeling and allows to examine of both path models at the within-family level and correlations at the between-family level. Since RI-CLPM accounts for the time-invariant individual differences in variables, it gives more accurate regression coefficients at the within-family level than CLPM (Hamaker et al., 2015).

We run separate models with adolescent-reported autonomy support and mother-reported autonomy support. In both models, random intercepts of maternal autonomy support, maternal emotion dysregulation, and adolescent emotion dysregulation were created by regressing each measurement point of a particular construct on the random intercept of that construct, thereby setting regression coefficients of these paths to 1. Correlations among the three intercepts were estimated to examine relations between trait-like maternal emotion dysregulation, maternal autonomy support, and adolescent emotion dysregulation. We created within-family-centered variables for the within-family level analyses. Each variable's residual at Time_x was regressed on each variable's residual at Time_{x-1} to examine within-family effects among maternal emotion dysregulation, maternal autonomy support, and adolescent emotion dysregulation. Covariances among within-family centered variables at Time 1 and covariances between residuals of within-family centered variables at other waves were also estimated. Lastly, we conducted bootstrapped mediation analyses with within-family maternal emotion dysregulation, subsequent ($t + 1$) within-family autonomy support, and subsequent ($t + 2$) within-family adolescent emotion dysregulation.

2.3.4 | Sensitivity analyses with maternal psychological control

Previous studies showed the robust and detrimental effect of negative parenting practices—that is, psychological control—on adolescent emotion dysregulation (Cui et al., 2014; Luebke et al., 2014; Morris et al., 2007). Hence, we conducted sensitivity analyses to examine if psychologically controlling parenting would result in similar conclusions as autonomy supporting parenting in our model. Adolescent-reported maternal psychological control was assessed with a Dutch-adjusted version of the Psychological Control Scale-Youth Self-Report (Barber, 1996). We used the same analytic strategy as for autonomy support, in which adolescent-reported autonomy support was replaced with adolescent-reported psychological control.

3 | RESULTS

3.1 | Descriptive statistics

Table 1 illustrates the bivariate correlations among the variables of interest. All variables were correlated to each other within each measurement wave and, in most cases, also across measurement waves with small effect sizes. Adolescent and maternal emotion dysregulation were positively and significantly correlated. Also, adolescent-reported maternal autonomy support, but not mother-reported maternal autonomy support was negatively and significantly correlated with adolescent emotion dysregulation. Maternal emotion dysregulation was negatively and significantly related to both adolescent-reported and mother-reported maternal autonomy support in most waves. Bivariate correlations among variables of interest and adolescent gender showed that gender was significantly correlated with adolescent emotion dysregulation, but not with adolescent-reported or mother-reported maternal autonomy support at Time 1. This indicated that females had higher levels of emotion dysregulation than males. Further, family SES was negatively correlated with both adolescent-reported and mother-reported maternal autonomy support at Time 1 in which low SES mothers showed less autonomy support. Family structure was not significantly correlated to any variable of interest.

3.2 | RI-CLPM analyses on the relations between maternal emotion regulation, maternal autonomy support, and adolescent emotion regulation

All hypotheses were tested in one RI-CLPM. Standardized root mean square residual (SRMR) lower than 0.05, Comparative Fit Index (CFI) higher than 0.95, and root mean square error of approximation (RMSEA) lower than 0.05 and a nonsignificant χ^2 indicate a good model fit (Geiser, 2012). To test our hypotheses, we created a time-variant baseline model (Model 1) by freeing all correlations, stability paths, and regression paths to be the same across waves. We constrained different paths to test the time-invariance of all stability paths, cross-lagged effects, and correlated changes in separate steps (from Model 2 to Model 11). Since we used Full Information Maximum Likelihood (FIML) estimation, the Satorra–Bentler scaled χ^2 difference test was used to compare the model fits. Tables S1 and S2 exhibit the model fit indices and model comparisons for models using mother and adolescent reports, respectively. The final model for adolescent-reported maternal autonomy support, based on the best statistical fit, included fully constrained stability paths, correlated changes,

and cross-lagged effects, except for free cross-lagged effects from adolescent emotion dysregulation to maternal autonomy support. The final model for maternal reported maternal autonomy support, based on the best statistical fit, included fully constrained stability paths, cross-lagged effects, and correlated changes except for free correlations between maternal autonomy support and maternal emotion dysregulation at Time $x + 1$.

3.2.1 | The model with adolescent-reported maternal autonomy support

Figure 1 illustrates the results of the path model for adolescent-reported maternal autonomy support. The paths with bold arrows represent hypothesized significant relations and effects whereas the paths with dashed arrows represent hypothesized nonsignificant relations and effects. Furthermore, Table 2 illustrates the correlation coefficients, unstandardized and standardized regression coefficients, standard errors, and p values of the final model. Gender moderately predicted adolescent emotion dysregulation in all waves, with females showing more emotion dysregulation compared to males. Also, family SES predicted the random intercept of maternal autonomy support and adolescent emotion dysregulation, indicating that in families where SES is low, adolescents are likely to report less maternal autonomy support and more emotion dysregulation. In line with our hypotheses, at the between-family level, random intercept correlations showed that maternal emotion dysregulation, maternal autonomy support, and adolescent emotion dysregulation were significantly related to each other. Mothers who reported higher levels of emotion dysregulation than other mothers showed lower levels of maternal autonomy support than other mothers, and their adolescents showed higher levels of emotion dysregulation than other adolescents. Further, when mothers showed lower maternal autonomy support than other mothers, their adolescents showed more emotion dysregulation than other adolescents.

At the within-family level, the Time 1 correlation between maternal emotion dysregulation and adolescent emotion dysregulation was significant and positive. The strength of this correlation was moderate and suggested that when mothers report more emotion dysregulation than usual, their adolescents also report more emotion dysregulation than usual. Significant within-time correlations among residuals at Time 2-Time 5 appeared between adolescent-reported maternal autonomy support and adolescent emotion dysregulation, and between maternal emotion dysregulation and adolescent emotion regulation. The strength of these correlations was small. These results showed that if mothers showed more autonomy support than usual, adolescents showed less emotion dysregulation than usual in that same year. Surprisingly, if

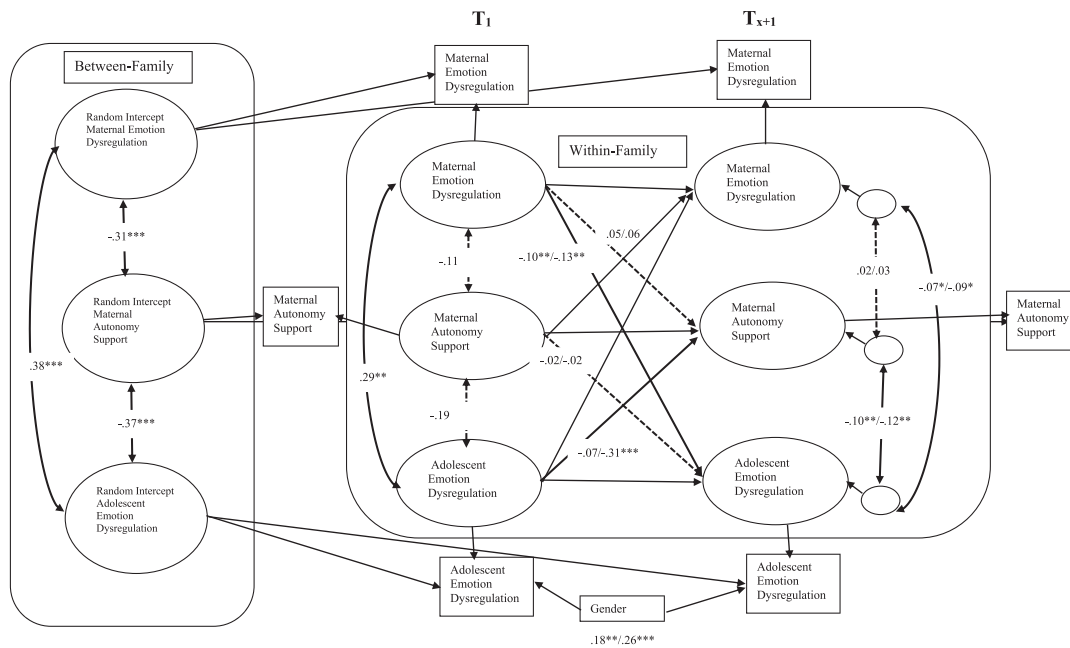


FIGURE 1 Random Intercept-Cross Lagged Panel Model of maternal emotion dysregulation, adolescent-reported maternal autonomy support, and adolescent emotion dysregulation. Between-family level control variables are not depicted in the figure. Bold arrows represent hypothesized relations that are significant and dashed arrows represent hypothesized relations that are not significant. The range of the standard estimates (min/max) of the regression coefficients for hypothesized paths is given. * $p < .05$; ** $p < .01$; *** $p < .001$.

TABLE 2 Parameter estimates, standard estimates, standard errors, and *p* values of RI-CLPM on relations between maternal emotion dysregulation, adolescent-reported maternal autonomy support, and adolescent emotion dysregulation

Parameters	Estimate	Standard estimate	Standard error	(Standardized) standard error	<i>p</i> Value (of unstandardized coefficient)	<i>p</i> Value (of standardized coefficient)
Between-family level covariates						
SES→BR	-0.09	-0.14	0.04	0.06	.018	.018
FS → BR	0.01	0.01	0.05	0.06	.895	.895
SES →AED	0.18	0.18	0.07	0.06	.006	.006
FS →AED	-0.05	-0.04	0.09	0.06	.544	.543
SES →MED	-0.05	-0.05	0.04	0.05	.300	.302
FS →MED	-0.10	-0.09	0.06	0.06	.111	.109
Gender → AED (T1)	0.25	0.18	0.08	0.06	.002	.001
Gender → AED (T2)	0.32	0.23	0.07	0.04	<.001	<.001
Gender → AED (T3)	0.37	0.26	0.06	0.04	<.001	<.001
Gender → AED (T4)	0.31	0.22	0.06	0.04	<.001	<.001
Gender → AED (T5)	0.26	0.18	0.07	0.05	<.001	<.001
Between-family correlations						
MED with AED	0.07	0.38	0.01	0.07	<.001	<.001
MED with MAS	-0.03	-0.31	0.01	0.07	<.001	<.001
MAS with AED	-0.05	-0.37	0.01	0.07	<.001	<.001
Within-family correlations at T1						
MED with AED	0.04	0.29	0.01	0.10	.008	.004
MED with MAS	-0.01	-0.11	0.01	0.10	.284	.277
MAS with AED	-0.03	-0.19	0.01	0.09	.057	.045
Within-family correlated change						
MED with AED (T2)	-0.01	-0.07	0.00	0.03	.038	.041
MED with AED (T3)	-0.01	-0.08	0.00	0.04	.038	.031
MED with AED (T4)	-0.01	-0.09	0.00	0.04	.038	.041
MED with AED (T5)	-0.01	-0.07	0.00	0.04	.038	.034
MED with MAS (T2)	0.00	0.02	0.00	0.03	.502	.495
MED with MAS (T3)	0.00	0.02	0.00	0.04	.502	.504
MED with MAS (T4)	0.00	0.03	0.00	0.04	.502	.503
MED with MAS(T5)	0.00	0.02	0.00	0.03	.502	.498
MAS with AED(T2)	-0.02	-0.11	0.01	0.04	.002	.001
MAS with AED (T3)	-0.02	-0.12	0.01	0.04	.002	.002
MAS with AED (T4)	-0.02	-0.12	0.01	0.04	.002	.002
MAS with AED (T5)	-0.02	-0.10	0.01	0.03	.002	.002
Within-family lagged effects						
MED → AED (T1 to T2)	-0.23	-0.11	0.08	0.04	.004	.005
MED → AED (T2 to T3)	-0.23	-0.13	0.08	0.05	.004	.005
MED → AED (T3 to T4)	-0.23	-0.12	0.08	0.04	.004	.007

(Continues)

TABLE 2 (Continued)

Parameters	Estimate	Standard estimate	Standard error	(Standardized) standard error	<i>p</i> Value (of unstandardized coefficient)	<i>p</i> Value (of standardized coefficient)
MED → AED (T4 to T5)	−0.23	−0.10	0.08	0.04	.004	.004
MED → MAS (T1 to T2)	0.07	0.05	0.06	0.04	.197	.197
MED → MAS (T2 to T3)	0.07	0.06	0.06	0.05	.197	.196
MED → MAS (T3 to T4)	0.07	0.05	0.06	0.04	.197	.204
MED → MAS (T4 to T5)	0.07	0.05	0.06	0.04	.197	.203
MAS → AED (T1 to T2)	−0.03	−0.02	0.06	0.04	.599	.597
MAS → AED (T2 to T3)	−0.03	−0.02	0.06	0.04	.599	.597
MAS → AED (T3 to T4)	−0.03	−0.02	0.06	0.04	.599	.602
MAS → AED (T4 to T5)	−0.03	−0.02	0.06	0.04	.599	.601
AED → MAS (T1 to T2)	−0.08	−0.11	0.06	0.09	.206	.199
AED → MAS (T2 to T3)	−0.05	−0.07	0.05	0.07	.318	.318
AED → MAS (T3 to T4)	−0.22	−0.31	0.05	0.07	<.001	<.001
AED → MAS (T4 to T5)	−0.10	−0.14	0.06	0.08	.075	.072

Note: Family SES was dummy coded in which 0 indicated middle or high family SES and 1 indicated low family SES. Family structure was dummy coded in which 0 indicated living with both parents and 1 indicated all other living arrangements.

Abbreviations: AED, adolescent emotion dysregulation; FS, family structure; MED, maternal emotion dysregulation; MAS, maternal autonomy support; RI-CLPM, random intercept cross-lagged panel model; SES, socioeconomic status.

mothers showed less emotion dysregulation than usual in a year, their adolescents showed more emotion dysregulation than usual in the same year. Thus, our hypothesis regarding within-family level correlations is partially confirmed.

Among the within-family regression paths, cross-lagged paths from maternal emotion dysregulation to adolescent emotion dysregulation and from adolescent emotion dysregulation to maternal autonomy support were significant. Surprisingly, the effect of maternal emotion dysregulation on adolescent emotion dysregulation was negative. When mothers showed more emotion dysregulation than usual in a particular year, their adolescents showed less emotion dysregulation than usual the next year. Thus, the second hypothesis was rejected. Maternal autonomy support did not significantly predict adolescent emotion dysregulation and bootstrapped mediation analysis with 5000 samples showed that maternal autonomy support did not significantly mediate the effect of maternal emotion dysregulation on adolescent emotion dysregulation ($\beta = -.00$, $p = .691$, 95% confidence interval [CI] [−0.02 to 0.00]). Hence, our third and fourth hypotheses were rejected. Yet, adolescent emotion dysregulation directly affected maternal autonomy support from Time 3 to Time 4 and from Time 4 to Time 5: When adolescents showed more emotion dysregulation than usual in a particular year, their mothers showed less autonomy support than usual to them the next year. Therefore, our fifth hypothesis was confirmed.

3.2.2 | The model with mother-reported maternal autonomy support

Figure 2 illustrates the results of the path model with mother-reported maternal autonomy support. The paths with thick arrows represent hypothesized relations and effects. Furthermore, Table 3 illustrates the correlation coefficients, unstandardized and standardized regression coefficients, standard errors, and *p* values of the final model. Again, gender moderately predicted adolescent emotion dysregulation in all waves, with females showing more emotion dysregulation compared to males. Further, family SES again predicted the random intercept of maternal autonomy support and adolescent emotion dysregulation, indicating that in families where SES is low, adolescents are likely to report less maternal autonomy support and more emotion dysregulation. In line with our hypotheses, at the between-family level, the correlation between the random intercept of maternal emotion dysregulation and adolescent emotion dysregulation was positive and significant. When mothers reported higher levels of emotion dysregulation than other mothers, adolescents showed higher levels of emotion dysregulation than other adolescents. The correlation between maternal emotion dysregulation and maternal autonomy support was also significant. When mothers reported higher levels of emotion dysregulation than other mothers, they showed lower levels of autonomy support to their adolescents than other mothers.

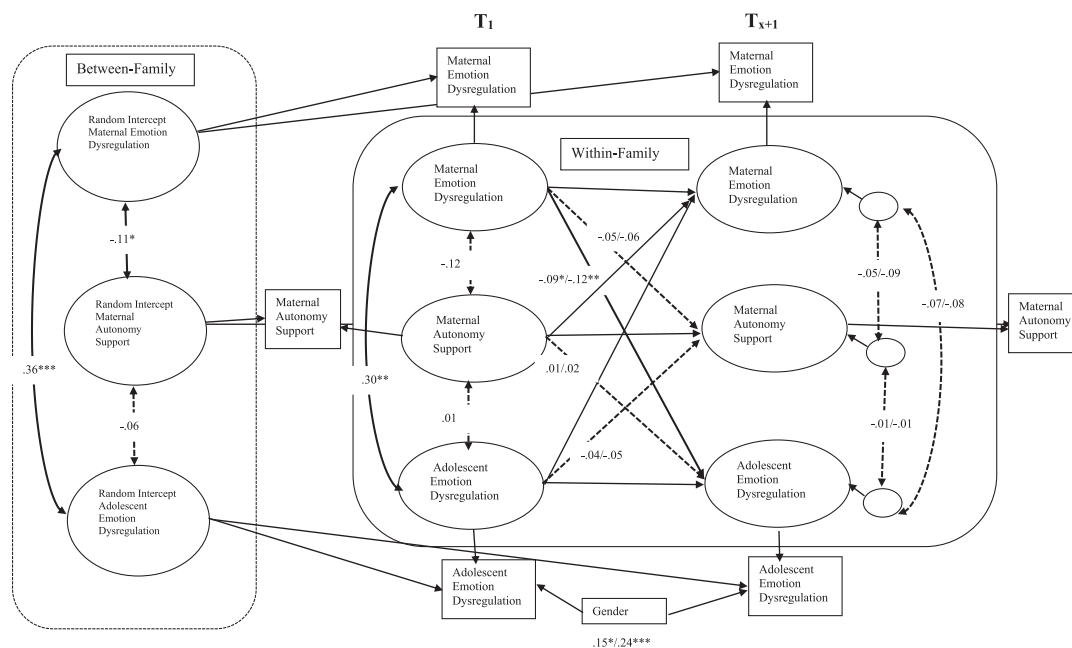


FIGURE 2 Random Intercept-Cross Lagged Panel Model of maternal emotion dysregulation, mother-reported maternal autonomy support, and adolescent emotion dysregulation. Between-family level control variables are not depicted in the figure. Bold arrows represent hypothesized relations that are significant and dashed arrows represent hypothesized relations that are not significant. The range of the standard estimates (min/max) of the regression coefficients for hypothesized paths is given. * $p < .05$; ** $p < .01$; *** $p < .001$.

At the within-family level, the Time 1 correlation of maternal emotion dysregulation and adolescent emotion dysregulation was significant and positive, similar to the adolescent-reported maternal autonomy support model. The strength of this correlation was moderate and suggested that when mothers report more emotion dysregulation than usual, their adolescents also report more emotion dysregulation than usual. There was no significant within-time correlation among residuals at Time 2–Time 5. Thus, our hypothesis regarding within-family level correlations was partially confirmed.

Among the within-family regression paths, the cross-lagged paths from maternal emotion dysregulation to adolescent emotion dysregulation were the only significant paths. Similar to the model with adolescent-reported maternal autonomy support, the effect of maternal emotion dysregulation on adolescent emotion dysregulation was negative. When mothers showed more emotion dysregulation than usual, their adolescents showed less emotion dysregulation than usual the next year. Thus, the second hypothesis was rejected. Maternal autonomy support did not significantly predict adolescent emotion dysregulation and bootstrapped mediation analysis with 5000 samples showed that maternal autonomy support did not significantly mediate the effect of maternal emotion dysregulation on adolescent emotion dysregulation ($\beta = -.00, p = .666, 95\% \text{ CI } [-0.02 \text{ to } 0.00]$). Hence, our third, fourth, and fifth hypotheses were rejected for the model with mother-reported maternal autonomy support.

3.3 | Sensitivity analyses: Model with adolescent-reported maternal psychological control

We first created a time-variant model (Model 1) by freeing all correlations, stability paths, and regression paths to be different across waves. Then, we constrained all stability paths, cross-lagged effects, and correlated changes to be the same in Model 2. The Satorra–Bentler scaled χ^2 difference test showed that the more complex model with free paths (Model 1) did not show a better statistical fit than the more parsimonious model (Model 2) (see Table S3). Thus, the time-invariant model (Model 2) was the final model of adolescent-reported maternal psychological control.

Results were compared with the model with adolescent-reported maternal autonomy support. The random intercept of maternal psychological control was significantly and positively correlated with maternal emotion dysregulation and adolescent emotion dysregulation (see Table S4). Further, among the within-family and within-wave correlations at Time 1, only the correlation between maternal emotion dysregulation and adolescent emotion dysregulation was significant, similar to the model with adolescent-reported maternal autonomy support. Also, among the within-family and within wave correlations at other time points, only maternal psychological control, and adolescent emotion dysregulation were positively and significantly correlated. Among the within-family level cross-lagged paths, maternal emotion dysregulation negatively

TABLE 3 Parameter estimates, standard estimates, standard errors, and *p* values of RI-CLPM on relations between maternal emotion dysregulation, mother-reported maternal autonomy support, and adolescent emotion dysregulation

Parameters	Estimate	Standard estimate	Standard error	(Standardized) standard error	<i>p</i> Value (of unstandardized coefficient)	<i>p</i> Value (of standardized coefficient)
Between-family level covariates						
SES→BR	-0.12	-0.19	0.03	0.05	<.001	<.001
FS → BR	-0.02	-0.02	0.04	0.05	.717	.717
SES →AED	0.18	0.17	0.07	0.06	.007	.007
FS →AED	-0.06	-0.04	0.09	0.06	.518	.516
SES →MED	-0.04	-0.05	0.04	0.05	.335	.337
FS →MED	-0.10	-0.09	0.06	0.06	.138	.135
Gender → AED (T1)	0.21	0.15	0.08	0.06	.010	.008
Gender → AED (T2)	0.29	0.21	0.07	0.04	<.001	<.001
Gender → AED (T3)	0.34	0.24	0.07	0.04	<.001	<.001
Gender → AED (T4)	0.27	0.20	0.07	0.05	<.001	<.001
Gender → AED (T5)	0.22	0.15	0.07	0.05	.003	.002
Between-family correlations						
MED with AED	0.06	0.36	0.01	0.07	<.001	<.001
MED with MAS	-0.01	-0.11	0.01	0.05	.046	.042
MAS with AED	-0.01	-0.06	0.01	0.07	.399	.392
Within-family correlations at T1						
MED with AED	0.04	0.30	0.01	0.10	.008	.003
MED with MAS	0.00	0.01	0.01	0.09	.926	.926
MAS with AED	-0.01	-0.12	0.01	0.09	.208	.205
Within-family correlated change						
MED with AED (T2)	-0.01	-0.06	0.00	0.04	.063	.069
MED with AED (T3)	-0.01	-0.07	0.00	0.04	.063	.055
MED with AED (T4)	-0.01	-0.08	0.00	0.04	.063	.066
MED with AED (T5)	-0.01	-0.07	0.00	0.03	.063	.057
MED with MAS (T2)	0.00	-0.05	0.00	0.07	.514	.505
MED with MAS (T3)	-0.01	-0.09	0.01	0.08	.252	.265
MED with MAS (T4)	-0.00	-0.06	0.00	0.06	.369	.364
MED with MAS (T5)	-0.00	-0.05	0.00	0.06	.401	.402
MAS with AED (T2)	-0.00	-0.01	0.00	0.04	.737	.738
MAS with AED (T3)	-0.00	-0.01	0.00	0.03	.737	.738
MAS with AED (T4)	-0.00	-0.01	0.00	0.04	.737	.738
MAS with AED (T5)	-0.00	-0.01	0.00	0.03	.737	.737
Within-family lagged effects						
MED → AED (T1 to T2)	-0.21	-0.10	0.08	0.04	.008	.009
MED → AED (T2 to T3)	-0.21	-0.12	0.08	0.05	.008	.008
MED → AED (T3 to T4)	-0.21	-0.11	0.08	0.04	.008	.011

TABLE 3 (Continued)

Parameters	Estimate	Standard estimate	Standard error	(Standardized) standard error	<i>p</i> Value (of unstandardized coefficient)	<i>p</i> Value (of standardized coefficient)
MED → AED (T4 to T5)	-0.21	-0.09	0.08	0.04	.008	.007
MED → MAS (T1 to T2)	-0.06	-0.06	0.04	0.04	.109	.114
MED → MAS (T2 to T3)	-0.06	-0.06	0.04	0.04	.109	.118
MED → MAS (T3 to T4)	-0.06	-0.06	0.04	0.04	.109	.108
MED → MAS (T4 to T5)	-0.06	-0.05	0.04	0.03	.109	.124
MAS → AED (T1 to T2)	0.03	0.02	0.06	0.03	.599	.600
MAS → AED (T2 to T3)	0.03	0.02	0.06	0.03	.599	.598
MAS → AED (T3 to T4)	0.03	0.02	0.06	0.04	.599	.600
MAS → AED (T4 to T5)	0.03	0.01	0.06	0.03	.599	.598
AED → MAS (T1 to T2)	-0.02	-0.05	0.02	0.05	.316	.323
AED → MAS (T2 to T3)	-0.02	-0.04	0.02	0.04	.316	.331
AED → MAS (T3 to T4)	-0.02	-0.05	0.02	0.05	.316	.315
AED → MAS (T4 to T5)	-0.02	-0.04	0.02	0.04	.316	.315

Note: Family SES was dummy coded in which 0 indicated middle or high family SES and 1 indicated low family SES. Family structure was dummy coded in which 0 indicated living with both parents and 1 indicated all other living arrangements.

Abbreviations: AED, adolescent emotion dysregulation; FS, family structure; MED, maternal emotion dysregulation; MAS, maternal autonomy support; RI-CLPM, random intercept cross-lagged panel model; SES, socioeconomic status.

predicted adolescent emotion dysregulation, and adolescent emotion dysregulation positively predicted maternal psychological control. Lastly, bootstrapped mediation analysis with 5000 samples showed that maternal psychological control did not significantly mediate the effect of maternal emotion dysregulation on adolescent emotion dysregulation ($\beta = -.01$, $p = .358$, 95% CI [-0.05 to 0.01]).

4 | DISCUSSION

This study aimed to examine how individual differences in maternal autonomy support and maternal and adolescent emotion dysregulation are related to each other, whether maternal emotion dysregulation and maternal autonomy support predict adolescent emotion dysregulation at the within-family level, and whether adolescent emotion dysregulation predicts maternal autonomy support at the within-family level. Overall, our study suggested that for mothers who reported more emotion dysregulation, adolescents reported more emotion dysregulation, and both adolescents and mothers reported that mothers supported their adolescents' autonomy less. When adolescents showed more emotion dysregulation than usual in a year, they perceived their mothers showed less autonomy support than usual the next year. Furthermore, and contrary to our hypothesis, when mothers showed more emotion dysregulation than usual in a year, their adolescents showed better emotion regulation than usual the next year. Adolescent emotion dysregulation was also related to adolescent-reported maternal autonomy support concurrently and over time. Furthermore, including adolescent-reported maternal psychological control yielded similar results as for adolescent-reported maternal autonomy-support.

Although the results of adolescent-reported and mother-reported autonomy support models showed some similarity, there were also important differences between models. The significant associations between adolescent emotion dysregulation and maternal autonomy support were only observed when adolescents reported on maternal autonomy support. This is in the line with other literature on discrepancies between adolescents and parents when they report parenting behaviors (Hou et al., 2020), and adolescents' perceptions of family relations or parenting behaviors are found to be a stronger predictor of adolescents' psychological adjustment than parents' perceptions (Human et al., 2016).

The between-person associations represent differences between mother-adolescent dyads in terms of long-term development or trait-like characteristics whereas within-person associations show if a change in a mother's behavior can predict a change in an adolescent's behavior or vice-versa. Indeed, the between-family differences and within-person effects may not be in the same direction (see Simpson's paradox, Kievit et al., 2013). For example, our analyses showed that although

the correlation between trait-like maternal and adolescent emotion dysregulation was positive at the between-person level, the within-person correlated change from Time 2 to time 5 was negative at the within-person level. The between-family level correlations showed that adolescents, whose mothers reported less emotion dysregulation regulation and supported their autonomy more in general—according to adolescent reports—showed less emotion dysregulation as expected. Furthermore, mothers who showed more emotion dysregulation in general also reported giving less autonomy support to their adolescents. These results are in line with the literature showing that in families in which parents have high emotional adjustment, parents show more positive parenting practices to their adolescents and their adolescents have also better emotional adjustment (Bariola et al., 2011; Morris et al., 2007, 2017; Saritaş et al., 2013).

At the within-family level, within-time correlations at Time 1 suggested that when mothers showed higher emotion dysregulation, adolescents also showed higher emotion dysregulation. However, within-time correlated change at other time points indicated a negative relation: When adolescents showed higher emotion dysregulation, their mothers showed lower emotion dysregulation concurrently. This correlation had a small effect size and was only significant in the adolescent-reported maternal autonomy support model. Yet, these correlations may reflect the role of parents' own emotion regulation capabilities on children's emotional development (Morris et al., 2007). On the one hand, these associations may reflect that positive parenting practices (i.e., autonomy support) are related to the positive emotional development of the children (i.e., better emotion regulation capabilities) (Morris et al., 2007, 2017). Also, the negative association between maternal and adolescent emotion dysregulation might reflect that mothers try to support their adolescents when they show more emotion dysregulation by showing better emotion regulation skills themselves. On the other hand, during adolescence, youth develop better self-regulatory skills and becomes more independent from parents (Herd et al., 2020; Ordaz et al., 2013), and the negative correlation between maternal and adolescent emotion dysregulation might therefore also reflect that adolescent show less emotion dysregulation to support their mothers when their mothers show more emotion dysregulation.

Likewise, and contrary to our hypothesis, higher maternal emotion dysregulation than usual in a year was significantly related to lower adolescent emotion dysregulation than usual the next year. Although mothers' own emotion regulation (in) capabilities are substantially related to emotion regulation development during adolescence (Morris et al., 2017), these results only to a limited extent supported the idea that youth can model their mothers' emotion regulation (Morris et al., 2017). Although previous studies showed that mother's emotional dysregulation predicted children's emotion dysregulation (Bariola et al., 2011; Crandall et al., 2016; Crespo et al., 2017; Saritaş et al., 2013), these studies either did not differentiate among between- and within-family relations or their samples consisted of younger children. These differences might explain the difference in results with the current study. Also, it should be noted that our contrary findings might reflect suppression effects, as the bivariate correlations between maternal and adolescent emotion regulation were consistently positive across waves. Another explanation might be that when a mother shows more emotion dysregulation than usual, an adolescent might subsequently show an effort to compensate for their mother's emotion regulation difficulties, thereby trying to influence their parent's emotion dynamics (Lougheed, 2020).

Although within-family and within-time associations between autonomy support and adolescent emotion regulation were not significant at Time1, within-time correlated change at other time points was in the line with our hypothesis: When mothers showed less autonomy than usual according to the adolescent reports, adolescents also showed more emotion dysregulation than usual concurrently. This result supports the fact that autonomy support and emotional functioning are closely related (Ryan et al., 2006). These associations between autonomy support and adolescent emotion regulation were mainly driven by adolescent reports of maternal autonomy support, however, and were not significant for mother reports. When adolescents have less difficulty regulating their emotions, they are more likely to perceive their relationship with their mothers as positively. Indeed, when people report higher interpersonal emotion regulation, they also tend to perceive receiving higher social support (Williams et al., 2018). Also, these associations may reflect that positive parenting practices (i.e., autonomy support) are related to the positive emotional development of the children (i.e., less emotion regulation difficulties) (Morris et al., 2007, 2017).

Contrary to our hypothesis, change in maternal autonomy support did not predict change in adolescent emotion dysregulation, and maternal autonomy support did not mediate the relation between maternal and adolescent emotion dysregulation. We tested whether dysfunctional parenting, such as psychological control, is even more predictive of negative outcomes than adaptive parenting such as autonomy support. Results of the sensitivity analysis showed no difference between positive and negative aspects of parenting. Also, this result is in contrast to previous research using traditional CLPM that maternal autonomy support predicted an increase in adaptive emotion regulation—such as emotional integration, and a decrease in maladaptive emotion regulation such as emotion suppression (Brenning et al., 2015). Perhaps parents become less influential in adolescence than at earlier ages because adolescents tend to become more autonomous from parents (Marceau et al., 2015).

Over-time effects mainly supported our hypothesis and showed that when adolescents reported higher emotion dysregulation than usually, their mothers subsequently showed less autonomy support to adolescents than usually the next year. This is in line with findings that adolescents are likely to affect their mothers' behaviors as their relationship with their mothers becomes more egalitarian (Branje et al., 2010). Possibly, when adolescents regulate their emotions better (Dix, 1991), this might make it easier for mothers to rely on adolescents' emotion regulation skills and support their adolescents' autonomy.

Furthermore, maternal emotion dysregulation did not predict maternal autonomy support across reporters. This finding is not in the line with previous studies showing that maternal emotional functioning predicted parenting behaviors (Crandall et al., 2015; Morelen et al., 2016; Samuelson et al., 2012). Although our results showed that interindividual differences in maternal autonomy support and maternal emotion dysregulation were related, the within-family association was not significant. However, previous studies mostly investigated maternal emotional functioning and parenting behavior without distinguishing between between-family differences and within-family associations. This could be the reason for the discrepancy between the current results and the literature.

4.1 | Strengths, limitations, and future directions

The current study contributes to the literature by investigating the role of maternal autonomy support and maternal emotion dysregulation in the development of adolescent emotion dysregulation. Most of the previous studies used methods that are not able to distinguish within- from between-family effects regarding how parental factors influence adolescent emotion regulation. We used a multi-informant longitudinal design and analyses that allowed us to disentangle between-family from within-family associations.

The current study also has some limitations. Most of the participants in this study were from middle or high socioeconomic status. Parents from higher socioeconomic status are likely to show more autonomy support and encourage mutual communication in the relationship with their children, whereas parents from lower socioeconomic status are more likely to exhibit direct control practices such as being more restrictive, more punitive, less approving, and less autonomy-supportive (Hoff et al., 2002; Leyendecker et al., 2006). Also, this study only included mothers, and previous studies showed that mothers' and fathers' autonomy-related parenting might have different roles in the emotional development of adolescents (Lansford et al., 2014; Van Lissa et al., 2019). Therefore, future research can further contribute to the literature with a more representative sample and include both fathers and mothers.

5 | CONCLUSION

Our study extended the knowledge of adolescent emotion dysregulation by disentangling relations between individual differences and relations among the changes within families. Overall, we found that stable characteristics of adolescents and mothers were mostly related to each other at the between-family level. At the within-family level, adolescent emotion dysregulation directly affected adolescent-reported maternal autonomy support. Also, although maternal and adolescent emotion dysregulation were quite consistently and positively related to each other, maternal emotion dysregulation negatively affected adolescent emotion dysregulation. Thus, in intervention settings, it is important to focus more on both maternal emotion dysregulation to understand adolescent emotion regulation, and adolescent emotion dysregulation to prevent mothers to decrease their autonomy support in promoting better adolescent emotion regulation skills.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study. Data are available at the DANS EASY repository, Branje, Prof. Dr. S. (Utrecht University); Meeus, Prof. Dr. W. H. J. (2018): Research on adolescent development and relationships (young cohort). DANS. <https://doi.org/10.17026/dans-zrb-v5wp>.

ETHICS STATEMENT

Ethical approval of the RADAR study was obtained from the University Medical Centre Utrecht. All participants provide active written consent, and parents provided active written consent for underaged children.

DISCLOSURE

Permission to reproduce material from other sources and clinical trial registration is not applicable.

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SUPPORTING INFORMATION

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