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Perceived Psychological Control in Early Adolescence Predicts Lower Levels of Adaptation into Mid-Adulthood

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Abstract

This study examined perceived parental psychological control in early adolescence as a critical stressor likely to be associated with lower levels of adaptation into mid-adulthood. A diverse sample of 184 adolescents was followed from age 13 through 32 to assess predictions to adult adaptation. Perceived parental psychological control at age 13 predicted relative decreases in observed support, lower likelihood of being in a romantic relationship, and lower academic attainment (after accounting for grade point average at baseline) by age 32. Many outcomes were mediated by lower levels of psychosocial maturity and peer acceptance in mid-adolescence. Overall, results suggest that perceived parental psychological control in early adolescence potentially undermines autonomy so as to lead to less favorable outcomes well into adulthood.

Keywords

psychological control; romantic relationships; educational attainment; income

Even though parents routinely attempt to guide their children toward successful adaptation, overcontrolling parenting in adolescence has the potential to stunt development in a fundamental and long-term way that is not easy to repair. One specific parenting practice known to undermine autonomy in childhood and adolescence is psychological control. Psychological control is an approach to parenting that involves attempting to control the child through harsh and manipulative means (Barber & Harmon, 2002). Within childhood and adolescence, psychological control has been linked to a variety of negative outcomes, including decreasing levels of autonomy, more risky sexual behavior, and poorer grades (Gray & Steinberg, 1999; Hare, Szwed, Schad, & Allen, 2015; Oudekerk et al., 2014). Psychological control in late adolescence and early adulthood has similarly been shown to predict lower levels of attachment with parents, lower self-esteem, and difficulties with identity formation (Leondari & Kiosseoglou, 2002; Romm, Barry, Kotchick, DiDonato, & Barnett, 2018). However, we know little about if and how perceived psychological control early in adolescence, well before individuals are pursuing careers or serious romantic relationships, might be linked to adaptation into adulthood.

Prior research and theory suggests that overcontrolling parenting can inhibit adolescents' career decision-making and development (Bell, Allen, Hauser, & O'Connor, 1996). Notably, one recent 6-year longitudinal study found that perceived psychological control from parents that took place when their offspring were in late adolescence was associated with lower educational achievement, more problems in the workplace, and more stress and worry about

work, with indirect effects through mental health symptoms (Desjardins & Leadbeater, 2017). The current study seeks to build on these findings by examining whether perceived psychological control much earlier in development will continue to have effects into adulthood.

Adaptation in adulthood can be defined in terms of a wide variety of behaviors, achievements, and psychological states. However, there are some markers of successful psychosocial adaptation in adulthood that are widely recognized as having value. These include the presence of supportive, warm relationships, higher educational attainment and emotional adjustment (Masten et al., 1995; Roisman, Masten, Coatsworth, & Tellegen, 2004; Trzesniewski et al., 2006). Adults who are successful in these areas are likely to feel and be seen as more competent and accomplished. In particular, the ability to form healthy romantic relationships is considered a key task as individuals move into adulthood (Conger, Cui, Bryant, & Elder, 2000). Both the presence of romantic relationships and the quality of such relationships are indicators that adults are moving along an expected developmental course. By their 30s, most individuals are in romantic relationships (Pew Research Center, 2005). Single individuals could be struggling to initiate or maintain relationships at a time when relationships tend to become deeper and more serious (Collins & Sroufe, 1999). Perceived psychological control could well undermine the ability to form supportive intimate relationships by altering individuals' expectations of relationships, an idea consistent with attachment theory (Bowlby, 1969, 1973). Close relationships are likely to be seen as sources of stress, rather than sources of support, and so individuals may avoid them altogether or may develop somewhat distant relationships marked by withdrawal.

In addition, markers of socioeconomic adaptation, including greater educational attainment, are important to most adults whereas low levels of education are often associated with lower income and job prestige and create stress for many (Cohen, Doyle, & Baum, 2006; Cutler & Lleras-Muney, 2006; Judge & Hurst, 2008). Those adolescents who have their autonomy undermined via perceived psychological control are likely to struggle with self-motivation and asserting themselves appropriately with teachers, professors, employers, and co-workers, so as to advance their education. The research by Desjardins and Leadbeater (2017) suggests that perceived psychological control from parents at age 19, when individuals are beginning to focus on adult markers of adaptation, is likely to be detrimental. They also found mediation through mental health, suggesting that poorer mental health may both result from psychological control and act as a mechanism to predict long-term struggles. Importantly, the Desjardins and Leadbeater study was somewhat limited in that it did not account for baseline levels of academic functioning (i.e., did psychological control simply *reflect* preexisting adolescent difficulties). In the current study, we account for variables previously shown to be related to psychological control (participant gender and family income; Barber, 1996; Rogers, Buchanan, & Winchell, 2003) and baseline indicators of functioning. We also examine perceived psychological control much earlier in development. Examining the long-term sequelae of perceived psychological control *while accounting for* these important confounds and baseline markers of the outcomes of interest would suggest that perceived psychologically overcontrolling parenting in early adolescence may be linked to significant and long-term disturbances in fundamental emotional and social-developmental processes, although this proposition has never been empirically examined.

Questions also remain about the underlying psychosocial mechanisms beyond mental health symptoms that can explain the link between perceived psychological control and poorer adjustment. Specifically, we were interested in mechanisms that reflected psychosocial developmental progress. Because factors in middle adolescence, such as close friendship strength, have been shown to be particularly pivotal to long-term development, problems during this period are likely to be implicated in longer-term adjustment difficulties (Allen, Narr, Kansky, & Szwedo, 2019; Narr, Allen, Tan, & Loeb, 2019; Steiger, Fend, & Allemand, 2015). One facet of development that is especially vulnerable to psychologically overcontrolling behaviors is psychosocial maturity. Given their lack of autonomy in the family, adolescents who experience psychological control will be likely to struggle with balancing their own needs and perspectives with those of others—a marker of psychosocial maturity (Gray & Steinberg, 1999; Luyckx, Soenens, Vansteenkiste, Goossens, & Berzonsky, 2007; Soenens et al., 2007). One well-regarded measure of psychosocial maturity—ego development (Loevinger, Wessler, & Redmore, 1970)—has been linked to both short- and long-term interpersonal indicators of adjustment in adolescence, including popularity and academic grades (Bursik & Martin, 2006; Marsh, Allen, Ho, Porter, & McFarland, 2006). Low levels of psychosocial maturity captured by this measure are seen in a sense of external control, egocentrism, and difficulties relating to others. High levels are associated with internal control, more nuanced thinking, and the ability to form intimate and collaborative relationships (Hauser, Powers, & Noam, 1991). Adolescent psychosocial maturity has also been found to predict relationship quality with peers well into adulthood (Hennighausen, Hauser, Billings, Schultz, & Allen, 2004).

Adolescents who perceive their parents as psychologically overcontrolling are also likely to experience difficulties with peer relationships. Within the adolescent peer group, autonomy is highly valued (Allen, Porter, & McFarland, 2006; Allen, Porter, McFarland, Marsh, & McElhaney, 2005). Adolescents who have grown up with overcontrolling parents are likely to struggle to assert autonomy and thus to also struggle within the peer group. As with psychosocial maturity, success with peers in adolescence has been associated with a host of positive outcomes in the short-term, including higher self-esteem, higher academic achievement, and more prosocial behavior (De Bruyn & Van Den Boom, 2005; Guay, Boivin, & Hodges, 1999; Sandstrom & Cillessen, 2006). There is relatively little research examining adult outcomes from being well-liked by peers in adolescence, but some work suggests that those who are well-liked in adolescence are less likely to be violent, more likely to have positive peer relationships, and more likely to achieve a more prestigious career in adulthood (Allen, Chango, & Szwedo, 2014; Dubow, Huesmann, Boxer, & Smith, 2016; Zettergren, Bergman, & Wångby, 2006), although these young people may also experience higher levels of social anxiety and alcohol use (Allen et al., 2014; Narr, Allen, Tan, & Loeb, 2019). Conversely, it is well-established that being disliked in adolescence is associated with long-term negative outcomes, such as academic and social problems (Bagwell, Schmidt, Newcomb, & Bukowski, 2001; Modin, Östberg, & Almquist, 2011). Those adolescents who are less-liked thus seem likely to struggle with adaptation in adulthood, though this question remains largely unexamined.

Finally, adolescents who perceive psychological control and repeated intrusions on their autonomy may experience begin to feel helpless or hopeless and develop depressive

symptoms (Barber, 1996). Previous research suggests that depressive symptoms in adolescence can seriously stunt social development and have long-term consequences for wellbeing in adulthood (Allen, Chango, Szewedo, & Schad, 2014). We thus expected that depressive symptoms in mid-adolescence might help explain potential links from perceived psychological control to long-term adaptation.

Though largely associated thus far with problems *within* adolescence, a developmental perspective suggests that overcontrolling parenting is likely to create more than a temporary setback for adolescent development as it interferes with the key task of autonomy development at a critical period. This study used a diverse community sample of adolescents followed from age 13 to 32, to examine the potential long-term implications of perceived parental autonomy-undermining practices in early adolescence as predictors not only of difficulties in adolescent adjustment, but ultimately of long-term difficulties into adulthood.

Specifically, it was hypothesized that:

1. Perceived parental psychological control at age 13 will predict relative deficits in psychosocial maturity, relative declines in peer acceptance, and relative increases in depressive symptoms from ages 13 to 16.
2. Perceived parental psychological control at age 13 will predict less received and given support in romantic relationships, less likelihood of being in a relationship, lower levels of educational attainment, and relative increases in depressive symptoms at ages 27 to 32.
3. The effects of perceived psychological control in adulthood will be mediated via relative decreases in levels of psychosocial maturity, peer acceptance, and depressive symptoms in mid adolescence.

Method

Interview and observational data were obtained longitudinally for a community sample of 184 adolescents (86 males, 98 females) first assessed in seventh and eighth grade (Mean age = 13.3 years), and re-interviewed annually up through age 32. The sample was demographically diverse and representative of the population from which it was drawn (baseline median family income was in the \$40,000 to \$59,000 range; the sample was 58% European-American, 29% African-American, 1% Asian, 1% Hispanic, .5% American Indian, 8% mixed race, and 2% other races or ethnicities). Adolescents were originally recruited from the seventh and eighth grades at a public middle school drawing from suburban and urban populations in the Southeastern United States. Students were recruited via an initial mailing to all parents of students in the school, along with follow-up contact efforts at school lunches. Adolescents who indicated they were interested in the study were contacted by telephone. Of all students eligible for participation (i.e., in seventh or eighth grade in the focal school and capable of filling out the questionnaires), 63% agreed to participate either as target participants, or as peers providing collateral information.

For the purposes of the present study, data were drawn from five time points: First in early adolescence with participants and their close friends (participant M age = 13.35, SD = .64);

next, two times in mid-adolescence (participant M age = 15.21, SD = .81; and participant M age = 16.35, SD = .87). Next, data were collected at an adulthood assessment of the target participants and romantic partners, for those in eligible (at least three months' duration) relationships (participant M age = 27.39, SD = 1.41). Finally, participants completed information about their educational and dating status later in adulthood (M age = 31.70, SD = .99).

At age 13, participants nominated a same-sex close friend to participate in the study and to participate in filmed interaction tasks. Close friends were defined as "people you know well, spend time with, and whom you talk to about things that happen in your life." These close friends were chosen by the teen and may or may not have reciprocally considered the target teen to be their closest friend. At age 13, close friends reported that they had known the participants for an average of 4.02 years (SD = 2.88). At the mean age 27 assessment, participants in a romantic relationship were invited to participate in videotaped interaction tasks with their romantic partners. To maximize the number of romantic partners able to participate, dyads were recruited if they had an eligible romantic partner at any time within a span of three years to complete observational and questionnaire measures once within the predetermined three-year period. Eighty-eight (47.8%) of the original participants were in eligible romantic relationships and both they and their partners agreed to participate. Participants reported an average relationship length of 4.04 years (SD = 3.29 years).

Attrition

Attrition analyses were conducted to determine whether individuals who did vs. did not participate at a given wave differed in terms of the previously measured constructs. Adolescents with lower grade point averages (GPAs) at age 13 were less likely to participate between ages 14 and 16 ($t = -3.41$, $p = .001$). Analyses indicated that female participants were slightly more likely to participate at age 27 ($\chi^2 = 4.36$, $p = .04$) and age 32 ($\chi^2 = 6.43$, $p = .01$). There were no other significant differences between those who did vs. did not participate at any of the waves in terms of gender, family income, or earlier levels of the variables measured.

To best address any potential biases due to attrition and missing data in longitudinal analyses, full information maximum likelihood methods were used, with analyses including all variables that were linked to future missing data (i.e., where data were not missing completely at random). Because these procedures have been found to yield less biased estimates than approaches (e.g., simple regression) that use listwise deletion of cases with missing data, the entire original sample of 184 for the larger study was utilized for these analyses. This analytic technique does not impute or create any new data nor does it artificially inflate significance levels. Rather, it simply takes into account distributional characteristics of data in the full sample so as to provide the least biased estimates of parameters obtained when some data are missing (Arbuckle, 1996).

For all data collection, adolescents and their peers provided informed assent, and their parents provided informed consent before each interview session. At age 18, participants began providing consent. Romantic partners provided consent. Interviews took place in private offices within a university academic building. Adolescents, friends, and romantic

partners were all paid for their participation. Participants' data were protected by a Confidentiality Certificate issued by the U.S. Department of Health and Human Services, which further protects information from subpoena by federal, state, and local courts. If necessary, transportation and child care were provided to participants.

Measures

Perceived Psychological Control from Parents (Age 13).—Adolescents completed the 10-item Psychological Control vs. Psychological Autonomy subscale of the Childhood Report of Parenting Behavior (Schaefer, 1965), a widely used measure of psychological control (Barber, 1996). Adolescents completed 10 items on the extent to which their mothers and fathers used psychologically controlling behaviors using a three-point Likert scale, where 1 = “Not like my mother [father]” and 3 = “A lot like my mother [father]”. The scores for the two parents were averaged together (or the score for a single parent was used). Scores ranged from 10 to 26. There was a very high correlation between parents' scores ($r = .68$, $p = .001$). Adolescents reported that mothers used slightly higher levels than fathers $M_{\text{mothers}} = 15.59$, $SD = 3.66$, $M_{\text{fathers}} = 14.43$, $SD = 3.80$, ($t = -2.89$, $p = .004$). Example items include “My mother [father] figure...” “...wants to control whatever I do,” “...says if I really cared for her [him], I would not do things that cause her [him] to worry.” Internal consistency was excellent (Cronbach's $\alpha = .77$).

Psychosocial Maturity (Age 13 and 15).—The assessment of psychosocial maturity, constructed by Loevinger and her associates (Loevinger, Wessler, & Redmore, 1970), utilized a 14-item sentence completion test and theoretically derived scoring system (Hy & Loevinger, 1996). Example sentence stems include: “The thing I like about myself is...,” “Raising children...,” “My mother and I...,” and “If I can't get what I want...” High-level scores are characterized by complexity and balancing of perspectives of self and others, whereas low-level scores are characterized by impulsivity and egocentrism (Hy & Loevinger, 1996). An example of a high-level score was: My mother and I “get along like best friends but sometimes we get on our nerves,” whereas a low level score was: When a child will not join in group activities “he doesn't like it.” Responses were rated from 1-9, with higher scores representing higher levels of ego development. For this study, item-sum scores (taken from the average of two coders) were obtained by averaging each subject's 14-item scores, so as to best approximate adolescents' typical level of psychosocial maturity. Scores ranged from 3.15 to 5.40 at age 13 and from 3.50 to 5.78 at age 15. There is much evidence for the reliability and validity of this instrument, in terms of links to family interaction patterns and predictions to observable peer interactions (Allen, Hauser, Bell, & O'Connor, 1994; Hauser, 1976; Loevinger, 1979, 1985; Marsh et al., 2006). It has also been found to show discriminant validity from constructs such as IQ (Cohn & Westenberg, 2004). Interrater reliabilities (using intraclass correlations) ranged from .93 to .94, and all coders were kept blind to other data in the study. Internal consistency, while not an ideal indicator for an inventory measure such as this, was fair (Cronbach's $\alpha = .54-.58$).

Peer Acceptance (Ages 13 and 16).—Peer acceptance was assessed at ages 13 and 16 using a limited nomination sociometric procedure. Each adolescent, their closest friend, and two target peers were asked to nominate up to 10 peers in their grade with whom they would

“most like to spend time on a Saturday night.” (This measure is similar to one created by Franzoi, Davis, & Vasquez-Suson (1994)). The raw number of like nominations each teen received was standardized within grade level before being added to the main data set as the primary measure of acceptance following the procedure described in (Coie, Coppotelli, & Dodge, 1982). Such ratings are not the only relevant marker of competence with peers (e.g., perceived status with peers rather than likeability, or combinations of liked and disliked nominations (Coie, Dodge, & Kupersmidt, 1990; Prinstein, 2007)); however, simple sociometric ratings of likeability capture one of the most direct markers of ability to relate in a positive fashion to a broader peer group (Prinstein, 2007). This procedure resulted in a sample of 72 – 146 teens (depending on the grade level), comprising approximately 38% of the entire student population in these grades, who provided nominations of anyone in their grade at school. Grade-based nominations were utilized rather than classroom-based nominations due to the age and classroom structure of the school that all of the participants attended. The large number of raters for each teen means that this subsample of nominators is likely to yield fairly reliable estimates of preference for each teen (Prinstein, 2007). This procedure has been validated in past studies with this same sample, with social preference being linked to numerous positive indicators of adjustment, including attachment security, psychosocial maturity, and competence in close friendships (Allen, Porter, McFarland, McElhaney, & Marsh, 2007; Allen et al., 2005).

Depressive Symptoms (Ages 13, 16, and 27).—At ages 13 and 16, adolescents reported on their depressive symptoms in the past week using the Childhood Depression Inventory (Kovacs & Beck, 1977), a 27-item inventory based on the Beck Depression Inventory. Internal consistency was good (Cronbach’s $\alpha = .85-.87$). At age 27, participants completed the Beck Depression Inventory-II (Beck, Steer, & Brown, 1996), reporting on symptoms over the past two weeks. Internal consistency was excellent (Cronbach’s $\alpha = .90$).

Observed Support Received and Given (Ages 13 and 27).—Participants and their friends (age 13) or romantic partners (age 27) participated in a supportive behavior task in which they were asked to discuss a problem the participant was having and wanted advice about. The task was videotaped and lasted 6 minutes total. The videotapes were then coded using the Supportive Behavior Coding System (Allen et al. 2003) based on several other similar systems (Crowell et al. 1998; Haynes and Fainsilber Katz 1998; Julien et al. 1997). Observed support given and received was coded from 0-4 as the extent to which the participants and partners appeared to be connected and engaged with each other during the interaction based on both quantity and quality of signs of connection. Low levels of support are indicated by little eye contact, turning away from the partner, ignoring or not responding to the partner, looking bored, or interrupting the partner. High levels of support include a sincere effort to connect with the partner, finishing sentences, evidence of understanding the partner’s statements, responding with genuine interest and enthusiasm, asking open-ended questions to draw the partner out, following up on what the partner says, and using non-verbal cues to indicate understanding such as nodding, facing each other, and eye contact. An average of the scores provided by two trained raters blind to the rest of the data in the study comprised the support score for each interaction. Support received and given at the

dyadic level was coded reliably with intraclass correlation coefficients (ICC) values of .85-.89 which are considered in the ‘excellent’ range.

Romantic Relationship Participation (Age 32).—At age 32, participants responded to the question “Are you currently in a romantic relationship (this includes being married or dating)?” Participants responded “Yes” (coded 1) or “No” (coded 0).

Education Level (Age 32).—Participants reported the highest level of education they had obtained by age 32. Choices included: 8th grade or less, some high school, GED, high school graduate, associate’s degree, bachelor’s degree, some graduate work, master’s degree or professional degree. The median level of education completed was a bachelor’s degree, ranging from some high school to a professional degree.

Results

Preliminary Analyses

Table 1 presents means, standard deviations, and intercorrelations of substantive variables. We examined the possible moderating effects of gender and family-of-origin income on each of the relations described in the primary analyses below by creating interaction terms based on the product of centered main effect variables and testing gender and family of origin income interactions as a block. No significant interactions were found, suggesting that there were no reliable differences in results for males or females or for those from different income backgrounds.

Primary Analyses

Primary analyses were conducted via linear and logistic regression using full information maximum likelihood analyses in MPlus (Version 8.1; (Muthén & Muthén, 2015). Mediation was tested via Model Indirect in MPlus, using bootstrapped confidence intervals.

Hypothesis 1: Perceived parental psychological control at age 13 will predict relative deficits in psychosocial maturity, relative declines in peer acceptance, and relative increases in depressive symptoms from ages 13 to 16 after accounting for baseline levels.

Analyses first examined perceived parental psychological control in early adolescence as a predictor of later psychosocial maturity and peer acceptance. Accounting for gender, family-of-origin income, and baseline indicators of the outcomes of interest, perceived parental psychological control at age 13 predicted relative deficits in psychosocial maturity even after accounting for baseline psychosocial maturity, from age 13 to age 15 ($\beta = -.29, p = .001$). In addition, perceived parental psychological control at 13 predicted relative decreases in peer acceptance from age 13 to 16 ($\beta = -.25, p = .001$); see Table 2. However, perceived parental psychological control did not predict relative increases in depressive symptoms from age 13 to 16 ($\beta = -.12, p = .14$). These results suggest that psychologically overcontrolling parenting in early adolescence is associated with relative deficits in psychosocial maturity and relative declines in likeability by mid-adolescence, but is not associated with relative increases in depressive symptoms during this time.

Hypothesis 2: Perceived parental psychological control at age 13 will predict less received and given support in romantic relationships, less likelihood of being in a relationship, lower levels of educational attainment, and relative increases in depressive symptoms at ages 27 to 32.

Analyses next examined whether perceived parental psychological control in early adolescence would predict less adult adjustment, in terms of romantic relationship functioning, educational attainment and depressive symptoms. As shown in Table 3, after controlling for gender, family-of-origin income, and observed support received and given in a close friendship at 13, perceived parental psychological control at age 13 predicted less observed support in romantic relationships at age 27 ($\beta = -.37, p = .001$). This suggests that, apart from demographic variables and earlier levels of observable support, higher levels of perceived parental psychological control at 13 predicted less observably supportive romantic relationships by age 27.

A regression was conducted to determine whether perceived psychological control at age 13 would predict relative increases in depressive symptoms by age 27 (see Table 4). After accounting for gender, family-of-origin income, and depressive symptoms at age 13, higher perceived psychological control did not predict relative increases in depressive symptoms by age 27 ($\beta = -.02, p = .81$).

Next, logistic regression was used to determine whether higher levels of perceived psychological control would predict a lower likelihood of being in a relationship or dating by age 32. As shown in Table 5, after accounting for gender and family of origin income, higher psychological control at age 13 predicted a lower likelihood of being in a relationship or dating by age 32 ($\beta = -.29, p = .01, OR = .86, 95\% CI = .757, .979$).

Next, a regression was conducted to determine whether perceived psychological control at age 13 would predict educational attainment by age 32 (see Table 6). After accounting for gender, family-of-origin income, and GPA at age 13, higher perceived psychological control predicted lower educational attainment by age 32 ($\beta = -.21, p = .01$).

Hypothesis 3: Psychosocial maturity and peer acceptance will mediate the relationship between psychological control and the markers of adaptation in adulthood.

All analyses accounted for family-of-origin income and gender. Since perceived psychological control did not predict relative increases in depressive symptoms in mid-adolescence, we did not include depressive symptoms as a potential mediator. After accounting for observed support at age 13, psychosocial maturity at age 15 predicted more support received and support given at age 27 ($\beta = .24, p = .02$), as did peer acceptance at age 16 ($\beta = .27, p = .02$). Similarly, greater psychosocial maturity at age 15 predicted a higher likelihood of being in a relationship or dating by age 32 ($\beta = .26, p = .04, OR = 3.53, 95\% CI = .974, 12.781$) as did greater peer acceptance at age 16 ($\beta = .35, p = .01, OR = 1.84, 95\% CI = .399, 2.35$). Next, after accounting for GPA at age 13, both greater psychosocial maturity at age 15 ($\beta = .32, p = .001$) and greater peer acceptance at age 16 ($\beta = .22, p = .01$) significantly predicted higher educational attainment by age 32.

All meditational analyses accounted for gender, income, and baseline levels of the outcomes of interest; see Figure 1. In terms of observed support received and given at age 27, psychosocial maturity at age 15 and peer acceptance at age 16 together mediated the relation between perceived psychological control at 13 and observed support at age 27, as assessed via model indirect in MPlus using bootstrapped confidence intervals (Preacher & Hayes, 2008). The link between perceived psychological control and observed support was no longer significant with the mediators in the model, suggesting full mediation was present. The total indirect effect from perceived psychological control to psychosocial maturity and peer acceptance to observed support was $-.113$, 95% CI = $-.22; -.01$. When examined separately, the confidence intervals of psychosocial maturity and peer acceptance contained zero, indicating that neither had a reliable unique mediating relation after accounting for the other.

In terms of the models predicting relationship status, the confidence intervals of the paths from perceived psychological control to psychosocial maturity and peer acceptance to relationship status both contained zero and were not considered significant mediators. In addition, the confidence interval of the total indirect effect with both mediators in the model contained zero, so the total indirect effect is not considered significant (total indirect effect = $-.129$, 95% CI = $-.29; .03$). After including the mid-adolescent mediators, the link between perceived psychological control and relationship status was no longer significant ($\beta = -.16$, $p = .32$).

In terms of educational attainment at age 32, psychosocial maturity at age 15 and peer acceptance at age 16 together mediated the relation between perceived psychological control at 13 and educational attainment at age 32. The link between perceived psychological control and educational attainment was no longer significant with the mediators in the model, suggesting full mediation was present. The total indirect effect from perceived psychological control to psychosocial maturity and peer acceptance to educational attainment was $-.106$, 95% CI = $-.19; -.03$. When examined separately, only the path from psychological control through psychosocial maturity to educational attainment was significant (indirect effect = $-.076$, 95% CI = $-.19; -.03$).

Post Hoc Analyses

To determine whether results would substantively differ for adolescents' perceptions of mothers' vs. fathers' psychological control, we examined each separately. In terms of mothers' use of psychological control, perceived psychological control predicted relative deficits in ego development at age 15 ($\beta = -.24$, $p = .004$), relative decreases in peer acceptance at age 16 ($\beta = -.23$, $p = .001$), less given and received support at age 27 ($\beta = -.41$, $p = .001$), and lower levels of educational attainment by age 32 ($\beta = -.23$, $p = .005$). For fathers, perceived psychological control predicted relative deficits in ego development ($\beta = -.31$, $p = .001$), relative decreases in peer acceptance ($\beta = -.20$, $p = .003$), lower levels of given and received support ($\beta = -.32$, $p = .001$), while it did not significantly predict lower academic attainment: ($\beta = -.16$, $p = .07$).

For relationship status at age 32, it appeared that mother's psychological control was driving the association: ($\beta = -.27$, $p = .01$, OR = $.87$, 95% CI = $.77, .98$), whereas the association for

fathers was not significant: ($\beta = -.21$, $p = .09$, $OR = .91$, 95% $CI = .80, 1.02$). In addition, because adolescents reported that mothers used significantly more psychological control, we tested all analyses accounting for whether or not there was data for fathers available. Inclusion of this variable did not substantively alter findings (i.e., all significant predictions from prior models remained significant).

Overall, we found that the pattern of results for mothers and fathers was similar, although, given the larger sample of mothers (and hence greater power for these analyses) the significance of observed associations was somewhat stronger for mothers in terms of predicting educational attainment and relationship status.

To address the possibility that negative affect might underlie the outcomes observed, we ran analyses accounting for concurrent depressive symptoms at each outcome time for predictions from perceived psychological control (age 16, 27, and 32). We found that inclusion of depressive symptoms did not substantively alter findings (all p values for predictions from psychological control remained within .01 of original p values).

Discussion

The current results suggest that overly controlling parenting in early adolescence potentially alters development in a fundamental way that is persistent through time. In particular, the current study found that perceived psychological control from parents at age 13 predicted observably less supportive romantic relationships for those in relationships, a lower likelihood of being in a relationship, and lower educational attainment by age 32. Relative deficits in psychosocial maturity and relative decreases in peer acceptance in mid-adolescence mediated many of these effects. Importantly, we accounted for several confounds, such as family income and gender as well as baseline levels of predicted outcomes or baseline measures of proxies for those outcomes (e.g., GPA when examining educational attainment). Overall, results suggest that adolescents who experience intrusive, overcontrolling parenting are likely to struggle with major developmental tasks from adolescence well into adulthood.

There are a number of reasons why perceived psychological control may be particularly detrimental to development. Several studies have identified a link between psychological control and difficulties with autonomy development in childhood and adolescence—a key task with long-term implications, particularly in adolescence (e.g. (Barber, 2002; Barber & Harmon, 2002; Oudekerk et al., 2014)). The current study is also consistent with emerging evidence that the experience of psychological control by parents later in development is associated with difficulties with adult tasks of identity development and vocational success, both of which are related to autonomy development (Desjardins & Leadbeater, 2017; Leondari & Kiosseoglou, 2002; Romm et al., 2018). Overall, the current findings are consistent with a developmental model of difficulties with autonomy “cascading” forward into different domains (Oudekerk, Allen, Hessel, & Molloy, 2015), though the current study looks much further in development. Adolescents who fail to master the task of developing autonomy within the family are likely to struggle throughout adolescence and adulthood, as tasks such as initiating and maintaining healthy romantic relationships and pursuing

education all require the ability to assert oneself appropriately (Barrick & Mount, 1993; Deci & Ryan, 2014; Leak & Cooney, 2001; Taradash, Connolly, Pepler, Craig, & Costa, 2001).

A second route by which exposure to perceived parental psychological control may impede development is by negatively shaping adolescents' expectations of close relationships. Adolescents who perceive their parents to be psychologically controlling are likely to develop expectations that close relationships are sources of stress and that closeness comes at a cost. Such expectations are likely to steer individuals away from close relationships. They may not participate in such relationships or develop relatively distant relationships (Simpson, 1990). The ability to initiate and maintain close relationships is, of course, important for healthy romantic involvement, but may also be important for getting along with teachers and classmates. In addition, adolescents who experience manipulative pressure from parents are likely to avoid difficult situations rather than approach them, as they have likely acquired a more negative concept of themselves (i.e., as not particularly efficacious or able to think for themselves) (Givertz & Segrin, 2014). Finally, they may also be particularly motivated by parental control and may lose the drive to pursue education when they are required to be self-motivated later in life (Vansteenkiste, Zhou, Lens, & Soenens, 2005).

The current study also examined factors that may explain the long-term associations between perceived psychological control and adult outcomes. Those adolescents whose autonomy was undermined by psychological control appeared to experience increasing difficulties in internally balancing the needs and perspectives of self and other as well as in establishing themselves as desirable companions, both of which were associated with negative long-term outcomes. Relative deficits in psychosocial maturity after accounting for baseline levels suggest that adolescents who experienced more psychological control displayed less ego maturity compared to peers even over a relatively short period of time in adolescence, compared to those who experienced less. Psychosocial maturity is critical for managing the tasks of adulthood, so it is intuitive that difficulties in this area would predict poorer outcomes in terms of romantic relationships and education. Setbacks in this area in adolescence are likely to have a cumulative effect as individuals struggle to manage each successive task.

Decreases in peer acceptance, measured by sociometric methods, suggest that adolescents who experience psychological control may be seen as relatively less desirable companions over time. This could influence many long-term outcomes by limiting adolescents' social opportunities. Due to limited social opportunities, these adolescents may have more difficulty in finding a romantic partner, developing skillful behavior in romantic relationships or succeeding in higher degree programs, which all require social facility and connections with others.

In contrast to some prior research (Barber, 1996; Desjardins & Leadbeater, 2017), we did not find significant predictions from perceived psychological control in early adolescence to later depressive symptoms. Overall, the research on the link between psychological control and depressive symptoms is mixed, with some studies failing to find an association in adolescence (Bean, Barber, & Crane, 2006), though other studies have found associations

with other mental health indicators, such as externalizing symptoms (Barber, Stolz, Olsen, Collins, & Burchinal, 2005). One possibility for why our results differ from Desjardins and Leadbeater in terms of predictions to depressive symptoms is that they were capturing psychological control much later in development, when individuals are typically much more individuated and self-reliant. Intrusive, controlling parenting during this stage may be particularly discouraging emotionally.

There are several important limitations to consider in the current study. First, we relied on the adolescent's self-report of psychological control. Although our outcomes were relatively independent from self-report bias (including a test measure, sociometric data, and observational data), the fact that these were adolescents who *perceived* psychological control is important to consider. It is very possible that results would differ substantially if we examined parent reports. For example, parents may not perceive (or be willing to see) themselves as using psychological control and so parent reports may be less related to adolescent outcomes. In addition, our data, although prospective across many years, is not experimental and is not sufficient to make causal inferences. In addition, due to the correlation between psychosocial maturity and peer acceptance, it was not always possible to disentangle unique effects of each mediator, although when considered jointly they were significant mediators. Next, it is possible that unmeasured characteristics of the adolescent (such as temperament), or their parents (such as personality), were driving both psychological control and later outcomes. For example, an adolescent with a difficult temperament may elicit more psychological control from parents and also struggle in other domains throughout life. In addition, a recent study (Barton, Lavner, Stanley, Johnson, & Rhoades, 2019) suggests that studies which require both romantic partners in a couple to participate are likely to include more highly functioning couples. As the observational measure employed in the current study required both romantic partners to come to the lab, there may be a bias towards higher-functioning couples in our romantic partner observation.

To our knowledge, this 19-year longitudinal study is the longest-term study of psychological control from early adolescence well into adulthood. It also moves beyond self-report for the majority of its measures, incorporating test, observational, and sociometric data which also makes it unique. The results suggest that psychological control in early adolescence may be associated with truly lasting implications for development into adulthood and that processes occurring in mid-adolescence may explain these effects.

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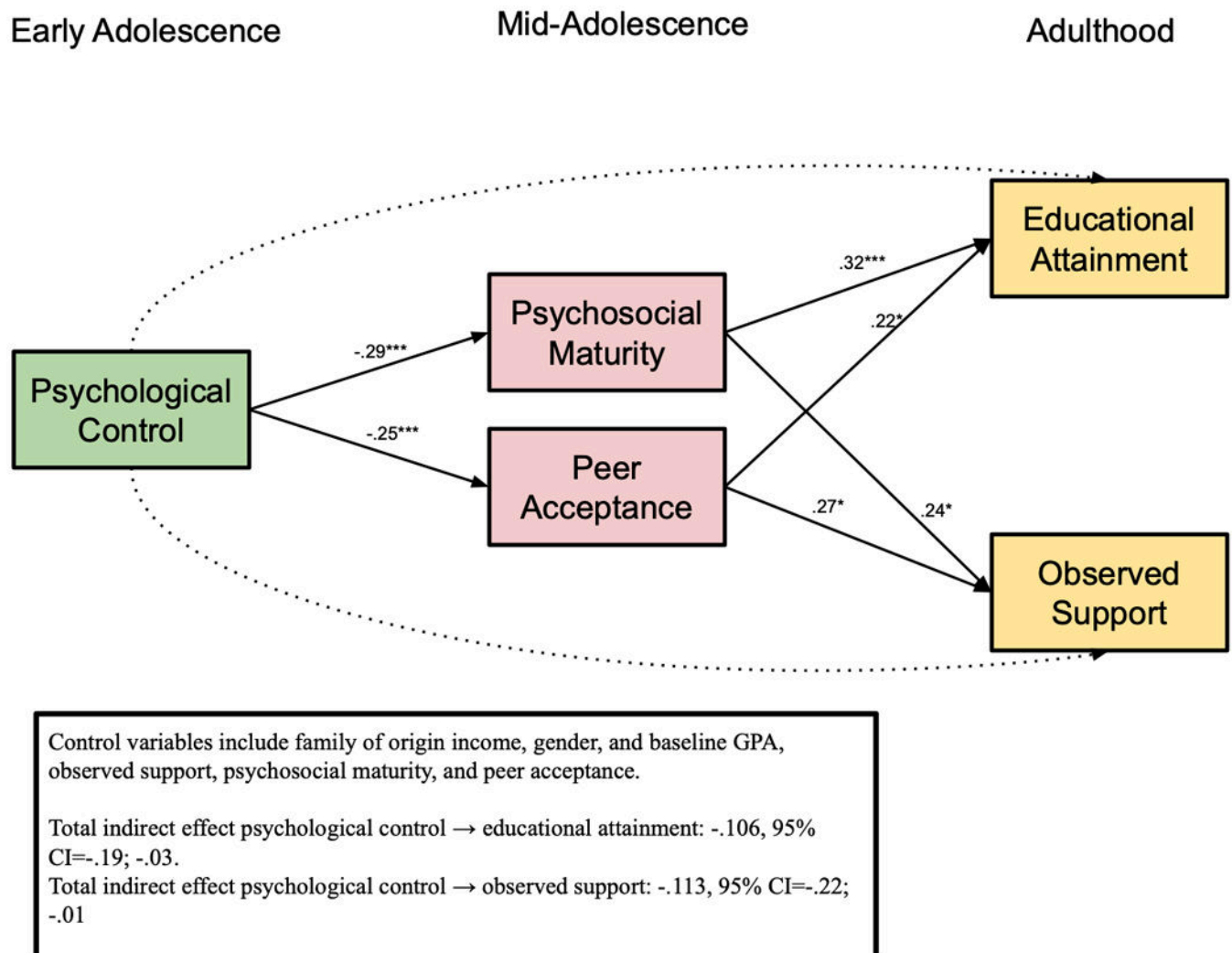


Figure 1.
Mediation model of psychological control at 13 to psychosocial maturity at age 15, peer acceptance at age 16, educational attainment at age 32, and observed support in romantic relationships at age 32.

Table 1

Univariate Statistics and Intercorrelations Among Primary Constructs

	Mean	SD	N	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Psychological Control (13)	15.21	3.50	183	-.42***	-.35***	-.39***	.35***	.16*	-.22**	-.40***	-.23**	-.42***	.01	-.23**	-.41***	.06	-.32***
2. GPA (13)	3.00	.72	145	--	.47***	.37***	-.16*	-.08	.32***	.41***	.27***	.32**	.05	.17	.60***	.07	.44***
3. Psychosocial Maturity (13)	4.21	.42	182	--	--	-.41***	-.15*	-.09	.28***	.32***	.31***	.33**	-.09	.22**	.44***	.04	.30***
4. Psychosocial Maturity (15)	4.38	.39	149	--	--	--	-.24**	-.16*	.23**	.28**	.20*	.41***	-.12	.15	.45***	.06	.19*
5. Depressive Symptoms (13)	5.07	4.30	182	--	--	--	--	.52***	-.07	-.21**	-.11	-.32**	.01	-.20*	-.17	.05	-.11
6. Depressive Symptoms (16)	6.75	6.42	170	--	--	--	--	--	-.09	-.15	-.07	-.27**	.17*	-.15	-.21*	.08	-.05
7. Peer Acceptance (13)	.96	1.35	184	--	--	--	--	--	--	.56***	.28***	.16	.05	.17	.23**	.04	.32***
8. Peer Acceptance (16)	.42	1.09	151	--	--	--	--	--	--	--	.34***	.45***	-.15	.25**	.43***	-.09	.39***
9. Close Friend Support Received/ Given (13)	2.51	.73	179	--	--	--	--	--	--	--	--	.31**	.03	.21*	.14	.03	.18*
10. Romantic Partner Support Received/Given (27)	3.02	.61	90	--	--	--	--	--	--	--	--	--	.11	.15	.53***	.01	.22*
11. Depressive Symptoms (27)	5.83	6.99	147	--	--	--	--	--	--	--	--	--	--	-.10	-.09	.18*	-.05
12. Current Dating Status (32)	.69	.46	127	--	--	--	--	--	--	--	--	--	--	--	.08	-.03	.09
13. Education Level (32)	6.86	2.13	127	--	--	--	--	--	--	--	--	--	--	--	--	.00	.32***
14. Adolescent Gender (1=Male; 2=Female)	--	--	184	--	--	--	--	--	--	--	--	--	--	--	--	--	-.11
15. Family Income	43,600	22,400	181	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Note: Target adolescent age at time of assessment are in parentheses.

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

Table 2
Predicting Ego Development (Age 15) and Peer Acceptance (Age 16) from Early Adolescent Psychological Control (Age 13)

	Ego Development (Age 15)			Peer Acceptance (Age 16)		
	β entry	β final	ΔR^2	β entry	β final	ΔR^2
Step I.						
Gender (1=M; 2=F)	.06	.01		-.09	-.07	
Total Family Income (Age 13)	.20*	-.01		.22***	.15*	
<i>Statistics for Step</i>			.039			.155
						.155**
Step II.						
Age 13 Level of Outcome	.38***	.31***		.50***	.47***	
			.134***			.222***
			.173**			.377***
Step III.						
Psychological Control (Age 13)	-.29***	-.29***		-.25***	-.25***	
			.067***			.052***
			.240***			.429***

Note.

 $p < .001$.

**
 $p < .01$.

*
 $p < .05$

Table 3
Predicting Depressive Symptoms (age 16) from Early Adolescent Psychological Control (Age 13)

	Observed Support (Age 27)		
	β entry	β final	Total R^2
Step I.			
Gender (1=M; 2=F)	.07	.06	
Total Family Income (Age 13)	-.04	-.03	
<i>Statistics for Step</i>			.008
Step II.			
Depressive Symptoms (Age 13)	.51 ***	.53 ***	.259 ***
			.267 ***
Step III.			
Psychological Control (Age 13)	-.05	-.05	.004 ***
			.271 ***

Note.

 $p < .001$.

**
 $p < .01$.

*
 $p < .05$.

Predicting Observed Support in Romantic Relationships and Depressive Symptoms (Age 27) from Early Adolescent Psychological Control (Age 13)

Table 4

	Observed Support (Age 27)			Depressive Symptoms (Age 27)			
	β entry	β final	ΔR^2	Total R^2	β entry	β final	Total R^2
Step I.							
Gender (1=M; 2=F)	.03	.08			.18*	.18*	
Total Family Income (Age 13)	.21*	.04			-.03	-.03	
<i>Statistics for Step</i>			.044	.044			.033
Step II.							
Baseline Level of Outcome (Age 13)	.26**	.22*			-.00	.01	
			.058*	.102			.033
Step III.							
Psychological Control (Age 13)	-.37***	-.37***			-.02	-.02	
			.139***	.241**			.001
							.034

Note.

 $p < .001$.

**
 $p < .01$.

*
 $p < .05$.

Table 5
Predicting Relationship Status (age 32) from Early Adolescent Psychological Control (Age 13)

	Relationship Status (Age 32)		
	β entry	β final	Odds Ratio
Step I.			
Gender (1=M; 2=F)	-.01	-.01	.97
Total Family Income (13)	.10	.02	1.02
Step II.			
Psychological Control (Age 13)	-.29***	-.29***	.86

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

Table 6
Predicting Educational Attainment (age 32) from Early Adolescent Psychological Control (Age 13)

	Educational Attainment (Age 32)			
	β entry	β final	ΔR^2	Total R^2
Step I.				
Gender (1=M; 2=F)	.14	.10		
Total Family Income (13)	.35***	.12		
<i>Statistics for Step</i>			.129	.129*
Step II.				
GPA (Age 13)	.55***	.47***		
			.243***	.372***
Step III.				
Psychological Control (Age 13)	-.21**	-.21**		
			.021	.393***

Note.

 $p < .001$.

**
 $p < .01$.

*
 $p < .05$.