

Parental Psychological Control and Adolescent Adjustment: The Role of Adolescent Emotion Regulation

Lixian Cui, Amanda Sheffield Morris, Michael M. Criss,
Benjamin J. Houltberg, and Jennifer S. Silk

SYNOPSIS

Objective. This study investigated associations between parental psychological control and aggressive behavior and depressive symptoms among adolescents from predominantly disadvantaged backgrounds. The indirect effects of psychological control on adolescent adjustment through adolescent emotion regulation (anger and sadness regulation) were examined, as well as the moderating effects of adolescent emotion regulation. **Design.** 206 adolescents (aged 10–18 years) reported on parental psychological control and their own depressive symptoms, and parents and adolescents reported on adolescent emotion regulation and aggressive behavior. Indirect effect models were tested using structural equation modeling; moderating effects were tested using hierarchical multiple regression. **Results.** The associations between parental psychological control and adolescent aggressive behavior and depressive symptoms were indirect through adolescents' anger regulation. Moderation analyses indicated that the association between parental psychological control and adolescent depressive symptoms was stronger among adolescents with poor sadness regulation and the association between psychological control and aggressive behavior was stronger among older adolescents with poor anger regulation. **Conclusions.** Psychological control is negatively associated with adolescent adjustment, particularly among adolescents who have difficulty regulating emotions. Emotion regulation is one mechanism through which psychological control is linked to adolescent adjustment, particularly anger dysregulation, and this pattern holds for both younger and older adolescents and for both boys and girls.

INTRODUCTION

Most parents strive to provide children with a blend of support and control. However, researchers have found that some forms of control are associated with poor developmental outcomes. For example, psychological control, the use of psychological and emotional manipulation including guilt induction, love withdrawal, and the invalidation of feelings (Barber, 1996; Schaefer, 1959, 1965), has been associated with increased levels of adolescent internalizing problems, such as anxiety and depressive symptoms, externalizing problems, such as delinquency and aggressive behavior (e.g., Barber, Olsen, & Shagle, 1994; El-Sheikh, Hinnant, Kelly, & Erath, 2010; Kunz & Grych, 2013) and negative self-concept and low self-esteem (e.g., Bean, Bush, McKenry, & Wilson, 2003; Silk, Morris, Kanaya, & Steinberg, 2003). Such findings have led to a growing interest in examining variables associated with adolescents' susceptibility to the

harmful effects of psychological control, but there have been relatively few investigations examining more specific underlying processes or moderators of this link. This study addresses this gap by examining the indirect effects of psychological control on adolescent adjustment through adolescent emotion regulation. In addition, this study examines adolescent emotion regulation as a protective factor against psychological control. Thus, emotion regulation was examined as both a process variable linking parenting to adolescent outcomes and an individual-difference variable attenuating the link between parenting and adjustment. The targeted sample for the current study was ethnically diverse and primarily low-income because of the greater risk for negative outcomes among disadvantaged youth (Grant et al., 2005; Leventhal & Brooks-Gunn, 2000), and some research suggesting that psychological control is more prevalent in ethnic minority and low-socioeconomic status (SES) families (Barber, 1996; Chao & Aque, 2009).

Emotion Regulation and Psychological Control

Emotion regulation has broadly been defined as the process of modulating the occurrence, form, intensity, or duration of internal states and physiological processes to accomplish one's goals (Eisenberg & Morris, 2003; Thompson, 1994). Dysregulated emotions, such as sadness and anger, are often associated with internalizing and externalizing problems. For instance, less effective emotion regulation strategies, such as denial of negative emotion and rumination, have been linked to more depressive symptoms and externalizing behavior problems (Eisenberg, Spinrad, & Eggum, 2010; Silk, Steinberg, & Morris, 2003). In contrast, optimally regulated children and adolescents have been found to be more socially competent, high in empathy and prosocial behavior, and low in adjustment difficulties and behavior problems (Eisenberg & Fabes, 2006).

Because psychological control is emotionally manipulative in nature, making parental love and acceptance contingent on children's behavior, it is likely that psychological control has a deleterious impact on emotion regulation (Morris et al., 2002). Indeed, the reasons for this link are rooted in the defining features of psychological control. Specifically, *psychological control* has historically been defined as psychologically and emotionally manipulative techniques or parental behaviors that are not responsive to children's psychological and emotional needs (Barber, Maughan, & Olsen, 2005). Psychologically controlling parents create a coercive, unpredictable, or negative emotional climate of the family, which serves as one of the ways the family context influences children's emotion regulation (Morris, Silk, Steinberg, Myers, & Robinson, 2007; Steinberg, 2005). Such parenting strategies ignore the child's need for autonomy, impede the child's volitional functioning, and intervene in the individuation process (Barber & Xia, 2013; Soenens & Vansteenkiste, 2010). In such an environment, children feel pressure to conform to parental authority, which results in children's emotional insecurity and dependence (Morris et al., 2002).

Several studies have linked psychological control to greater emotion regulation problems in children and adolescents. For example, parental conditional regard, a component of psychological control, is related to anger and fear dysregulation and poor sadness recognition and awareness, whereas autonomy support is related to effective emotion regulation skills among Israeli children and adolescents (Roth & Assor, 2010; Roth, Assor, Niemiec, Ryan, & Deci, 2009). Such findings suggest that psychological control impedes emotion regulation and emotional awareness and competence. Some researchers have proposed an emotion specificity hypothesis arguing that children and adolescents with externalizing problems display more anger dysregulation in the

context of negative parenting, while children with internalizing problems display more sadness dysregulation (Eisenberg, Cumberland et al., 2001; Zeman, Cassano, Perry-Parrish, & Stegall, 2006). Thus, links between negative parenting and adjustment may differ based on children's propensity to express anger versus sadness. In response, the current study investigated the associations between psychological control and both adolescent anger and sadness regulation to confirm and expand previous research linking psychological control to emotion dysregulation and associated problems.

Indirect Effects of Psychological Control on Adjustment Through Emotion Regulation

There is evidence in the literature that children's emotion regulation explains how the family context is related to adjustment (Morris et al., 2007), such that family processes shape children's emotion regulation, and emotion regulation influences the development of internalizing and externalizing problems. Empirical studies support this premise. For example, negative parenting (e.g., maltreatment and maternal negative affect) predicts child and adolescent emotion dysregulation, which then predicts adjustment difficulties such as internalizing and externalizing problems (Alink, Cicchetti, Kim, & Rogosch, 2009; Eisenberg, Gershoff et al., 2001; Maughan, Cicchetti, Toth, & Rogosch, 2007; Valiente et al., 2006). Studies focusing on emotion-related parenting also have found similar results. For example, mothers' invalidating and dampening strategies toward their adolescents' positive affect have been associated with adolescents' more maladaptive emotion regulation strategies, which were, in turn, associated with more depressive symptoms (Yap, Allen, & Ladouceur, 2008).

Studies have begun to examine mediating factors between parental psychological control and adolescent adjustment. For example, research by Soenens and colleagues has shown that self-critical perfectionism personality orientation mediated the association between parental psychological control and adolescents' depression and self-esteem (Soenens, Luyckx, Vansteenkiste, Luyten, et al., 2008; Soenens, Vansteenkiste, Luyten, Duriez, & Goossens, 2005). In addition, Mandara and Pikes (2008) found that adolescent girls' sense of control and agency mediated the association between maternal psychological control and their depressive symptoms. Thus, psychological control has been linked to constructs assessing the self (e.g., self-criticism and sense of control) and to overall adolescent adjustment. Several studies also find support for emotion regulation as a mediator between psychological control and adolescent adjustment. For example, Brenning, Soenens, Braet, and Bosmans (2012) reported that emotion dysregulation and suppression mediated the link between parental autonomy support (combined with reverse scored psychological control) and depression among Belgium early adolescents. Similarly, McEwen and Flouri (2009) investigated fathers' psychological control and found that adolescent emotion dysregulation mediated the link between paternal psychological control and adolescent emotional symptoms, indicating that problems in emotion regulation explained the link between parental psychological control and adolescent adjustment. Despite such links, more research is needed to confirm emotion regulation as a mechanism through which psychological control influences adolescent adjustment.

Protective Effects of Emotion Regulation on Adjustment

Emotion regulation also has been investigated as a protective factor in the link between adverse contextual factors and adjustment. For example, high emotion

regulation skills have been found to protect adolescents against internalizing problems when they are exposed to high levels of community violence (Kliewer et al., 2004). Similarly, emotion regulation abilities assessed by activation control and inhibitory control protected children from developing anxiety problems in classrooms when teachers were autocratic and using teacher-centered styles of instruction (LaBillois & Lagacé-Séguin, 2009). Children particularly at risk for behavior problems may benefit from emotion regulation skills. For example, research has shown that sadness regulation abilities may protect adolescents against relational aggression, and anger regulation abilities may promote resilience in the context of physical aggression, particularly among boys and youth who have difficulties with emotion communication (Sullivan, Helms, Kiewer, & Goodman, 2010).

Research also indicates that factors, such as child anger and sadness reactivity, exacerbate the effects of psychological control (Morris et al., 2002; Rothbart & Bates, 2006; Rubin, Burgess, & Hastings, 2002), and other factors, such as family SES and sleep quality, seem to protect children and adolescents from these effects (e.g., El-Sheikh et al., 2010). Several studies have demonstrated that emotion regulation protects children from negative parenting and parental psychopathology. For example, within familial settings where mothers had a history of childhood-onset depression and were currently experiencing elevated depressive symptoms, higher levels of observed children's emotion regulation strategies (i.e., generating positive affect in the face of potential frustration) were associated with fewer internalizing problems (Silk, Shaw, Forbes, Lane, & Kovacs, 2006). In a longitudinal study of preadolescent girls, Feng and colleagues (2009) reported that higher levels of sadness regulation were related to lower levels of depressive symptoms when parental acceptance was low, and that higher levels of positive emotion displayed in a conflict resolution task were related to lower levels of depressive symptoms when parents were high in psychological control. Despite such research, few studies have examined the regulation of anger and sadness as a protective factor specifically against psychological control among adolescents. In response, the current study included adolescent emotion regulation as a possible moderator (in addition to examining indirect effects) to further understand the ameliorative benefits of emotion regulation in the context of negative parenting.

Age and Gender Effects

The negative effects of psychological control have been documented among both children (e.g., Morris et al., 2002) and adolescents (e.g., Barber, Stolz, & Olsen, 2005). Psychological control is posited to influence children at any age as it impedes volitional functioning and frustrates autonomy needs (Soenens & Vansteenkiste, 2010), but psychological control may be more detrimental during developmental periods of high autonomy seeking, such as toddlerhood and adolescence. Furthermore, children and adolescents' emotion regulation skills increase as they grow older (Eisenberg & Morris, 2003), with emotion regulation becoming more independent of parents. However, parents continue to influence adolescent emotion regulation by providing emotional support and more general guidance (Eisenberg et al., 2010; Morris et al., 2007). Negative parenting, such as parental psychological control during adolescence, may be particularly detrimental in terms of adolescent development of emotion regulation. Thus, the possible moderating role of adolescent age was explored in the current study, in both our indirect effects and moderation models to determine if the associations between

psychological control and emotion regulation and adjustment differed for younger versus older adolescents.

The effects of psychological control are sometimes inconsistent across gender, as some studies have suggested more deleterious effects of psychological control among girls (e.g., Mandara & Pikes, 2008; Nelson & Crick, 2002), but other studies have found more negative effects among boys (e.g., Conger, Conger, & Scaramella, 1997; Harper, 2010; Morris et al.; 2002; Soenens, Luyckx, Vansteenkiste, Duriez, & Goossens, 2008). This may be because girls are generally more likely to suffer from depression (Galambos, Leadbeater, & Barker, 2004), often linked to psychological control, and adolescent boys generally are more like to suffer from aggression (Card, Stucky, Sawalani, & Little, 2008). Thus, the relations between psychological control and outcome variables examined in this study may differ by gender. As previous research was inconclusive, the current study explored adolescent gender as a possible moderator of both our indirect effects and moderation models.

The Current Study

The current study examined parental psychological control and adolescent emotion regulation and aggressive behavior and depressive symptoms. The two main goals of the current study were to investigate (1) whether the link between parental psychological control and adolescent adjustment was indirect through adolescent emotion regulation and (2) whether the link between psychological control and adjustment was moderated by adolescent emotion regulation. Because of the previously reviewed theories and the emotion specificity hypothesis, we included both anger and sadness regulation in our models and investigated the roles of anger and sadness regulation separately in both indirect effects and moderation models. Based on previous empirical studies, we hypothesized that (1) the links between parental psychological control and adolescent aggressive behavior and depressive symptoms would be indirect through adolescent anger and sadness regulation abilities, with stronger indirect effects on aggressive behavior through anger regulation, and stronger indirect effects on depressive symptoms through sadness regulation and (2) the link between psychological control and adolescent adjustment would be attenuated under high levels of anger and sadness regulatory abilities. We also expected that anger regulation would moderate the link between psychological control and aggressive behavior, whereas sadness regulation would moderate the link between psychological control and depressive symptoms. Moderating effects of adolescent age and gender in both indirect effects and moderation models were explored based on evidence from the extant literature (Barber & Xia, 2013), although no specific hypotheses were made in regard to gender and age.

METHOD

Participants

The sample consisted of 206 families with adolescents who participated in the Family and Youth Development Project (FYDP). The purpose of the FYDP was to examine predictors and outcomes of adolescent emotion regulation. Data were collected from a predominantly urban area of a southern Midwest region of the United States from both adolescents (M age = 13.37 years, SD = 2.32, range = 10–18 years; 51% female; 32%

African American, 29.6% European American, 19.4% Latin American, 19% other ethnic groups) and their primary caregivers (83.3% biological mothers, 10.7% biological fathers, 2% grandparents, 4% other). The sample was predominantly comprised of low-income families (*Median* annual income = \$40,000, 47.5% of families were receiving welfare or public assistance) with an average of 4.35 people living in each home, and 38.7% headed by single parents.

Procedure

Participants were recruited from disadvantaged communities with high percentages of ethnic minority and low-income families through fliers distributed at local Boys and Girls Clubs and public facilities, such as the Young Men's Christian Association (YMCA). Snowball sampling methods were also used. Interested parent and adolescent dyads were asked to come to a university laboratory to participate in the study. Following the Institutional Review Board approved procedures, the purpose and procedure of the study were explained to adolescents and their primary caregivers before they signed consent and assent forms. The laboratory assessment lasted 2 hours on average. Data in the current investigation utilized questionnaire data collected from both parents and adolescents. Both the parent and adolescent received \$60 compensation for their time spent in the laboratory and were debriefed after the study.

Measures

Parental psychological control. Adolescents reported on psychological control of their primary caregivers via the Psychological Control Scale-Youth Self-Report (PCS-YSR; Barber, 1996), which includes eight items, such as "my mother/father is a person who is always trying to change how I feel or think about things," "blames me for other family members' problems," and "will avoid looking at me when I have disappointed her/him." The scale ranges from 1 = *not like her/him* to 3 = *a lot like her/him*. This scale has demonstrated adequate reliability and validity in previous studies (see Barber et al., 2005; Bean & Northrup, 2009), and the Cronbach's α was .78 in the current study. The mean of all items was computed with higher scores indicating more parental psychological control.

Adolescent emotion regulation. Both adolescents and parents reported on adolescents' abilities to regulate their emotions using the Children's Emotion Management Scale: sadness and anger scales (CSMS; Zeman, Shipman, & Penza-Clyve, 2001; CAMS; Zeman, Shipman, & Suveg, 2002). The sadness and anger coping scales were used in this study as indicators of adolescent emotion regulation. The sadness subscale includes five items, such as "I stay calm and don't let sad things get to me" and "I try to calmly deal with what is making me feel sad." One item ("When I am sad, I do something totally different until I calm down") was deleted to improve reliability (final Cronbach's α was .61 for adolescent report and .60 for parent report). The anger subscale included four items, such as "I can stop myself from losing my temper" and "I try to calmly deal with what is making me feel mad" (Cronbach's α was .74 for adolescent report and .79 for parent report). The wording of these items was modified for parents to report on their adolescents. The scale ranges from 0 = *not true* to 2 = *very true*). In moderation models, anger and sadness regulation were combined composite scores based on parent and

adolescent reports, $r = .36, p < .001$, between parent and adolescent reports of anger regulation, and $r = .25, p < .001$, for sadness regulation. In indirect effects models, parent and adolescent reports of anger regulation were used as two indicators for the anger regulation latent construct, and parent and adolescent reports of sadness regulation were used as two indicators for the sadness regulation latent construct.

Adolescent aggressive behavior. Adolescent aggressive behavior was obtained using 14 items from the Problem Behavior Frequency Scale (Farrell, Kung, White, & Valois, 2000), which assessed the frequency of physical, relational, and verbal aggression, such as "get in a fight in which someone was hit," "spread a rumor," and "insult someone's family." Both parents and adolescents were asked to indicate how frequently the adolescents engaged in each behavior during the past year using the following scale: 1 = *never*, 2 = *1-2 times*, 3 = *3-4 times*, 4 = *5-6 times*, 5 = *7 or more times*. Cronbach's α was .88 for adolescent report and .90 for parent report in the current study. The adolescent and parent ratings ($r = .38, p < .001$) were combined to obtain a composite score of adolescent aggressive behavior.

Adolescent depressive symptoms. Adolescents reported on their own depressive symptoms during the last 2 weeks using the Child Mood and Feelings Questionnaire (MFQ-C; Angold & Costello, 1987) using a 3-point scale (0 = *not true*, 1 = *sometimes*, 2 = *true*). This measure includes 33 items such as "I felt miserable or unhappy," "I was less hungry than usual," and "I thought there was nothing for me in the future." Cronbach's α was .93 in the current study, and items were averaged for a total score.

RESULTS

Descriptive Statistics and Correlations Between Variables

Descriptive statistics and bivariate correlations are presented in Table 1. Parental psychological control was negatively associated with both parent- and adolescent-reported anger regulation and positively associated with adolescent aggressive behavior (both parent- and adolescent-reported) and depressive symptoms. Adolescent sadness and anger regulation, both parent- and adolescent-reported, were positively related with each other, and stronger associations were evident among same reporters. All emotion regulation variables were negatively associated with adolescent depressive symptoms and both parent- and adolescent-reported aggressive behavior. Adolescent depressive symptoms and both parent- and adolescent-reports of aggressive behavior were positively correlated.

Child ethnicity was coded as African American, European American, and other ethnic groups (i.e., Latino, Native American, and mixed ethnicities). The *other* category was created due to low numbers of ethnic minorities in these groups. Analysis of variance (ANOVA) analyses and post hoc results showed that African American adolescents reported higher aggressive behavior than both European American ($M_{\text{difference}} = 0.22, p = .02$) and the other ethnic group category ($M_{\text{difference}} = 0.24, p = .005$). There were no ethnic differences on mean levels of parental psychological control or any other study variables. Partial correlations controlling for child ethnicity revealed the same pattern as zero-order correlations without controlling for ethnicity. Due to these small differences and the low number of participants in each ethnic group, child ethnicity was not included in further analyses.

TABLE 1
Descriptive Statistics of Study Variables

Variables	M	SD	1	2	3	4	5	6	7	8	9
1. Adolescent age	13.37	2.32	—								
2. Adolescent gender ^a	1.49	.50	-.01	—							
3. Parental PC	1.46	.41	.18*	-.08	—						
ER Variables											
4. Sadness regulation (A)	1.32	.49	.05	-.03	-.04	—					
5. Anger regulation (A)	1.19	.52	-.03	-.02	-.26***	.42***	—				
6. Sadness regulation (P)	1.08	.44	.03	.08	-.12	.25***	.30***	—			
7. Anger regulation (P)	1.00	.51	-.04	-.15*	-.16*	.18*	.36***	.57***	—		
Outcome Variables											
8. Depressive symptoms	.37	.34	.15*	.05	.45***	-.14*	-.34***	-.16*	-.22**	—	
9. Aggressive behavior (A)	1.43	.52	.18**	.14*	.35***	-.20**	-.43***	-.18***	-.34***	.42***	
10. Aggressive behavior (P)	1.55	.62	.03	.09	.24***	-.21***	-.34***	-.36***	-.43***	.17*	.38***

PC = psychological control; ER = emotion regulation; (A) = adolescent report; (P) = parent report.

^aAdolescent gender was coded as 1 (girls) and 2 (boys).

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

Indirect Effects of Psychological Control

For the first research goal, structural equation modeling (SEM) was used to test the indirect effects of parental psychological control on adolescent aggressive behavior and depressive symptoms through adolescent anger and sadness regulation using Mplus 6.12 (Muthén & Muthén, 2012). Parental psychological control was used as a single indicator latent variable in the indirect effects model because it was only adolescent report. Both anger and sadness regulation factors were two-indicator latent variables as they were reported by adolescents and parents. Significance of the indirect effects was tested using a bootstrapping method in Mplus, and separate models were run for anger and sadness regulation. The chi-square test of fit was supplemented with the comparative fit index ($CFI > .95$) and the root mean square error of approximation ($RMSEA < .06$; Hu & Bentler, 1999). Multi-group tests in Mplus were used to test whether the indirect effects of psychological control differed by adolescent age or gender. A median split was used to test moderation by age (10–13 years, 50.5%, vs. 14–18 years, 49.5%). The residual variances of the observed variables and variances of the latent variables were constrained to be equal across two groups to test the measurement invariance first, and all path coefficients in the structural models were constrained to be equal across two groups as a second step (Vandenburg & Lance, 2000).

Anger regulation. The model for anger regulation was tested and the model fit the data well, $\chi^2(2) = 2.99, p = .22$; $CFI = .99$; $RMSEA = .02$. Parental psychological control was negatively associated with anger regulation (Figure 1), and anger regulation was negatively associated with adolescent aggressive behavior and depressive symptoms. The indirect effects of parental psychological control through anger regulation were tested using bootstrapping methods. The results showed that psychological control had both significant indirect, $ab_2 = 0.13, 95\% CI [.05, .28]$, and direct effects, $c_2' = 0.35, 95\% CI [.15, .54]$, on adolescent depressive symptoms. Psychological control had only a significant indirect effect on adolescent aggressive behavior, $ab_1 = 0.39, 95\% CI [.19, .78]$. Multi-group tests demonstrated no differences among pathways across age or gender groups.

Sadness regulation. The model for sadness regulation was tested and the model fit the data well, $\chi^2(2) = 0.89, p = .64$; $CFI = 1.00$; $RMSEA = .01$. Parental psychological control was not significantly associated with sadness regulation, and sadness regulation was significantly related to aggressive behavior and depressive symptoms (Figure 1). This is in line with bivariate correlations indicating psychological control was not significantly related to adolescent sadness regulation as reported either by the parent or the adolescent (Table 1), so no indirect effects of psychological control through sadness regulation were evident.

Moderating Effects of Emotion Regulation

The second goal of the study was to investigate the moderating effects of adolescent sadness and anger regulation on the relations between psychological control and adolescent aggressive behavior and depressive symptoms. Hierarchical multiple regression analyses were conducted to examine these effects. Adolescent age was retained as a continuous variable in the analyses. Psychological control, sadness and anger regulation scores, and adolescent age were centered on the mean (Aiken & West, 1991). Interaction

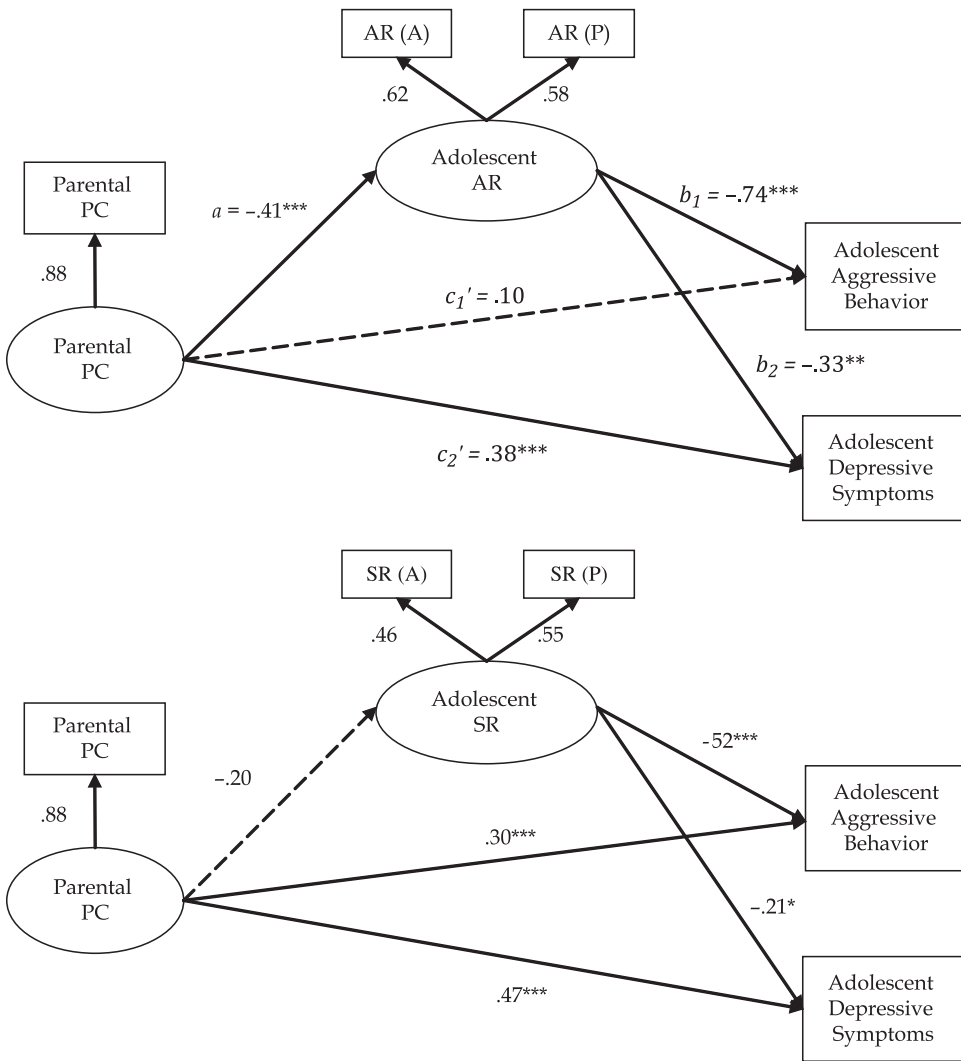


FIGURE 1

The indirect effects of psychological control through adolescent anger regulation for full sample. All estimates are standardized coefficients. PC = psychological control; AR = anger regulation; SR = sadness regulation; (A) = adolescent report; (P) = parent report. * $p < .05$. ** $p < .01$. *** $p < .001$.

terms of psychological control, anger or sadness regulation, and adolescent age or gender were created based on the centered variables. In the regression analyses in step 1, alternative adolescent adjustment was controlled for (depressive symptoms when predicting aggressive behavior, and aggressive behavior when predicting depressive symptoms) to more accurately predict specific adjustment variables. Adolescent age and gender were entered in step 2; psychological control and adolescent emotion regulation (anger or sadness) were entered in step 3; Psychological control × Emotion regulation, Psychological control × Age/gender, Emotion regulation × Age/gender were entered in step 4; and Psychological control × Emotion regulation × Age/gender were entered in

TABLE 2
Hierarchical Multiple Regressions Examining Adolescent Emotion Regulation as a Moderator

Predictors	Aggressive Behavior		Depressive Symptoms	
	β	ΔR^2	β	ΔR^2
Step 1		.11***		.11***
Alternative adjustment score	.33***		.33***	
Step 2		.03*		.01
Adolescent gender ^a	.14*		.00	
Adolescent age	.10		.11	
Step 3		.23***		.15***
Psychological control	.20**		.36***	
Adolescent anger regulation	-.45***		-.20**	
Step 4		.03*		.02
PC × Anger regulation	-.05		-.09	
PC × Age	.14*		-.09	
AR × Age	-.05		-.08	
Step 5		.01*		.00
PC × Anger regulation × Age	-.12*		-.03	
Total R ²		.41***		.29***
N		203		202
Step 1		.11***		.11***
Alternative adjustment score	.33***		.33***	
Step 2		.03*		.01
Adolescent gender ^a	.14*		.00	
Adolescent age	.10		.11	
Step 3		.13***		.13***
Psychological control	.27***		.39***	
Adolescent sadness regulation	-.29***		-.11	
Step 4		.04*		.03*
PC × Sadness regulation	.07		-.17**	
PC × Age	.17**		-.04	
Sadness regulation × Age	-.03		-.02	
Step 5		.00		.00
PC × Sadness regulation × Age	-.02		-.01	
Total R ²		.31***		.28***
N		202		202

PC = psychological control.

^aAdolescent gender was coded as 1 (girls) and 2 (boys).

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

step 5. Separate regressions were computed for each emotion regulation and adolescent adjustment factor. Following the recommendations of Holmbeck (2002) and Aiken and West (1991), significant three-way and two-way interactions were inspected by examining the link between psychological control and adolescent adjustment at high (+1 SD) and low (-1 SD) levels of the moderators.

Anger regulation. A significant three-way Psychological control × Anger regulation × Age interaction was found in predicting adolescent aggressive behavior controlling for adolescent gender and depressive symptoms (see Table 2). Further probing of the

interaction effect showed that psychological control was associated with more aggressive behavior only among older adolescents low in anger regulation (Figure 2), but it was not significant among older adolescents high in anger regulation or among younger adolescents. In other words, high levels of psychological control were associated with more aggressive behavior among older adolescents, particularly when they had problems regulating anger.

Sadness regulation. A significant two-way interaction, psychological control × sadness regulation, was found in predicting adolescent depressive symptoms after controlling for adolescent age, gender, and aggressive behavior (see Table 2). Further probing

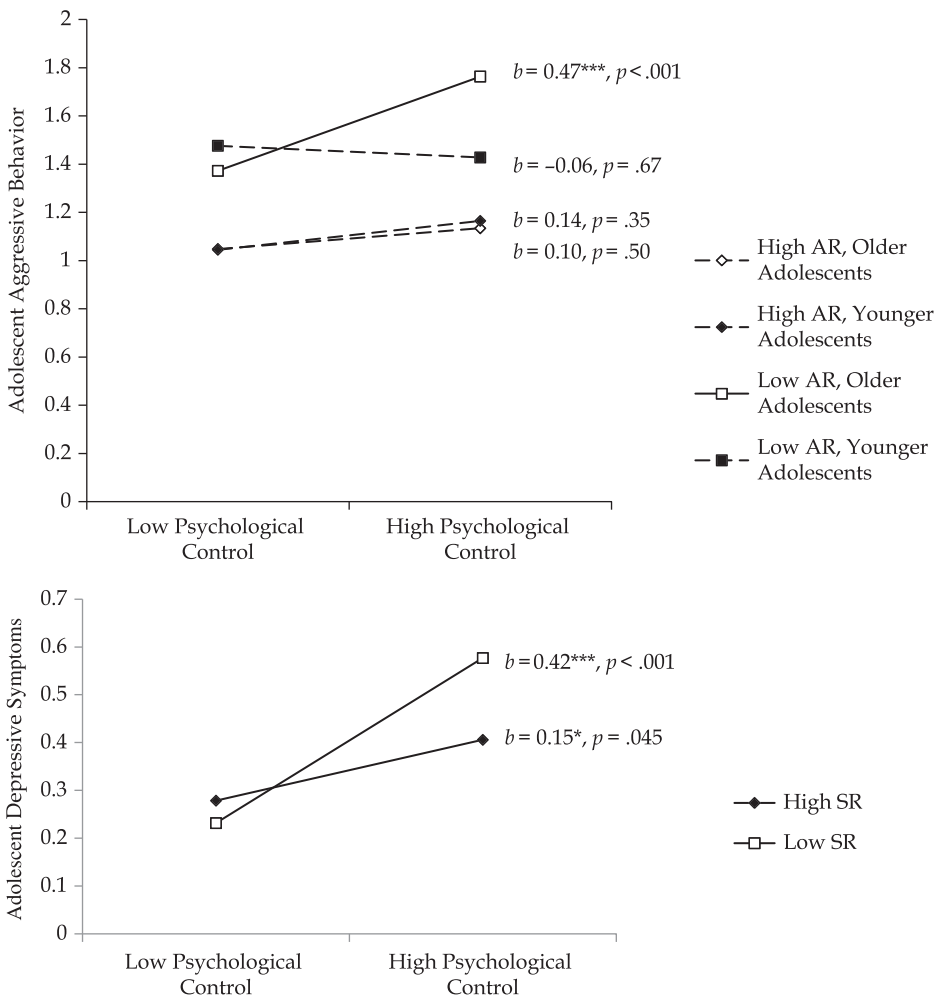


FIGURE 2

Illustration of the moderating effects of emotion regulation. AR = anger regulation; SR = sadness regulation. * $p < .05$. ** $p < .01$. *** $p < .001$.

showed that the slope of parental psychological control was significant among adolescents low in sadness regulation, and significant among adolescents who were high in sadness regulation but lower in magnitude (see Figure 2). In sum, high levels of psychological control are related to more depressive symptoms, particularly among adolescents who have difficulty regulating sadness.

DISCUSSION

Psychological control has been linked to adjustment difficulties (Barber, 1996; Conger et al., 1997; Mandara & Pikes, 2008; Silk, Morris, et al., 2003). Although it has been established that psychological control negatively affects development, there has been a need to examine the processes through which psychological control impacts children and adolescents and to explore protective factors against the effects of psychological control (Barber & Harmon, 2002; Pettit & Laird, 2002). In the current study, we found evidence that adolescents' anger regulation is one mechanism in the link between psychological control and adjustment. We also found that adolescent anger and sadness regulation moderated the link between parental psychological control and adolescent adjustment. In general, study findings did not differ for males versus females or older versus younger adolescents, with the exception of low anger regulation being an exacerbating factor for aggressive behavior only for older, not younger, adolescents.

Indirect Effects of Psychological Control Through Emotion Regulation

The first goal of the current study was to investigate the indirect effects of parental psychological control on adolescent adjustment through adolescent emotion regulation. Specifically, we found that psychological control was indirectly related to adolescent aggressive behavior via youth anger regulation. Moreover, there was evidence of direct and indirect effects of psychological control on depressive symptoms through anger regulation. The negative associations of psychological control and adolescent emotion regulation and adjustment did not differ across gender or age group, which is consistent with various empirical findings and with theory suggesting that adolescents' fundamental need for independence is unfulfilled in the face of psychological control regardless of age or gender (Soenens & Vansteenkiste, 2010). Most studies testing emotion regulation as a mechanism of influence have focused on contextual factors, such as parental characteristics or parenting practices (Eisenberg, Gershoff et al., 2001; Maughan et al., 2007; Valiente et al., 2006). Our findings add to the literature by highlighting a potential underlying mechanism in the links between psychological control and both internalizing and externalizing problems among adolescents from disadvantaged backgrounds.

It is widely accepted that psychologically controlling parents intrude into the child's "psychological world," exerting parental authority over the child's life, and intervening in the individuation process, ignoring or frustrating adolescents' need for autonomy possibly leading to a psychologically and emotionally dependent child (Barber & Xia, 2013; Steinberg, 2005). This may be universally detrimental across adolescence, when autonomy and individuation are key developmental processes (Steinberg, 2005). Our study findings support the premise that psychological control influences adolescent emotion regulation abilities, which may manifest in the following ways (see Morris et al., 2007). First, parental psychological control may create a negative family emotional

climate, within which parents invalidate children and adolescents' feelings and pressure them to change feelings and thoughts, induce negative emotions, such as guilt or shame, disrespect adolescents' individuality, and impede adolescents' volitional functioning (Barber & Xia, 2013; Barber, Xia, Olsen, McNeely, & Bose, 2012). Second, psychologically controlling parents may have difficulties in regulating their own emotions, leading to a lack of positive emotion regulation modeling in the home and thus adolescents' difficulty regulating emotions. Third, psychologically controlling parents may be less likely to use effective emotion socialization strategies, such as emotion coaching (Gottman & DeClaire, 1998; Snyder et al., 2013) to guide children and adolescents to regulate their negative emotions, particularly when parents are using emotionally manipulative parenting strategies. Family negative emotional climate and negative expressivity, together with a lack of emotion regulation modeling and emotion coaching, may result in adolescents' emotion regulation problems and subsequent difficulties.

Unexpectedly, we did not find indirect effects of psychological control on adolescent adjustment through adolescent sadness regulation, which was primarily due to the non-significant associations between parental psychological control and adolescent sadness regulation. One possible reason for this pattern of findings is that psychological control may foster greater anger dysregulation among disadvantaged youth. Indeed, among adolescents living in disadvantaged neighborhoods where they are exposed to violence frequently, anger is a common, often adaptive, emotion (Houlberg, Henry, & Morris, 2012). This may explain a weaker association between psychological control and adolescent sadness regulation in our study (Figure 1). Chao and Aque's (2009) study also indicated that adolescents might feel hurt, angry, and controlled when their parents are psychologically controlling, indicating that psychological control may be more intricately tied to anger than sadness. Another possible reason for the lack of findings with sadness regulation may be because of low reliability of both parent- and adolescent-report of sadness regulation ($\alpha = .61$ and $.60$, respectively). This suggests that adolescents may have difficulty reporting on sadness regulation, or that parents may not be aware of their adolescents' behaviors when they are feeling sad. Indeed, the regulation of anger may be more explicit and observable compared to the regulation of sadness, and thus more observable by others. It also may be that adolescents express more anger than sadness in daily life in disadvantaged contexts (Buckner, Mezzacappa, & Beardslee, 2003; Sullivan et al., 2010).

Psychological control remained directly related to depressive symptoms but not aggressive behavior when examined simultaneously. These results are consistent with previous research showing stronger links between psychological control and internalizing problems compared to externalizing problems (e.g., Barber, 1996; Conger et al., 1997; Mandara & Pikes, 2008). It is possible that invalidating feelings and inducing negative emotions may influence depressive symptoms via their impact on adolescent emotion regulation. Nonetheless, there may be other aspects of psychological control (e.g., coercion and disrespect) that may contribute to adolescent depressive symptoms directly. These findings also provide evidence that negative parenting and emotion regulation may play unique and incremental roles in the development of internalizing problems during adolescence.

The Moderating Effects of Emotion Regulation

The second goal of the current study was to investigate the moderating effects of adolescent emotion regulation on the link between parental psychological control and

adolescent adjustment. This is one of the first studies to examine factors that contribute to adolescents' resilience in the face of intrusive and controlling parenting. The main effects suggest that adolescents displayed more externalizing and internalizing problems when their parents utilized more psychological control, and both anger and sadness regulation were associated with lower levels of aggressive behavior and depressive symptoms, findings which are consistent with previous studies (e.g., Barber et al., 1994; Morris et al., 2002; Rothbart & Bates, 2006). More importantly, in line with the emotion specificity hypothesis that anger regulation may be more important in aggressive behavior and sadness regulation more important in depressive symptoms (for a review, see Zeman et al., 2006), we found that anger regulation protected adolescents from the effects of psychological control on aggressive behavior, especially among older adolescents. In addition, the link between psychological control and depressive symptoms was attenuated under high levels of sadness regulation. These findings add empirical support to the argument that certain adaptive adolescent characteristics such as positive affect and emotion regulation serve as protective factors in the face of negative parenting (Feng et al., 2009; Morris et al., 2002; Rubin et al., 2002).

Our findings suggest that despite the influence of parental psychological control on adolescent aggressive behavior and depressive symptoms, adolescents may fare well if they have high emotion regulation abilities, and this may be particularly true for older adolescents. Many adolescents from disadvantaged neighborhoods are more likely to be exposed to violence and are at higher risk for anger expression and aggressive behavior (Grant et al., 2005; Ingoldsby & Shaw, 2002; Leventhal & Brooks-Gunn, 2000; Sullivan et al., 2010). Studies also find that parents generally use less supportive and more punitive socialization strategies when older adolescents display negative emotions (Klimes-Dougan et al., 2007). Thus, higher risk for violence exposure, together with higher punitive parenting among older adolescents may put older adolescents at higher risk for aggression. In our study, older adolescents reported higher levels of parental psychological control (maybe due to parents' responses to their higher need for autonomy) and aggressive behavior, but not better emotion regulation abilities than younger adolescents. Indeed, as adolescents grow older, they rely more on self-regulation and less on parents' help for emotion regulation (Eisenberg & Morris, 2003). It may be that parental psychological control is particularly harmful among older adolescents with anger regulation difficulties because of its intrusion into more independent regulation, resulting in more aggression. Moreover, older adolescents who have difficulty regulating their emotions relative to younger adolescents may be particularly at risk for maladjustment difficulties given that they should have better regulatory skills compared to younger adolescents due to socio-cognitive development (Steinberg & Morris, 2001).

Integration and Summary of Findings

Our findings suggest that emotion regulation may operate both as a moderator and mediator in the link between parental psychological control and adolescent adjustment. The impact of negative experiences in the home may differ based on children's ability to regulate emotions. In particular, being proficient at regulating one's negative emotions may afford an adolescent the necessary skills to more effectively cope with the deleterious effects of psychologically inhibiting and manipulating parenting behaviors that can be especially harmful during adolescence (Steinberg, 2005). Emotion regulation may be critical for youth living in high risk environments, and it appears that exposure to parental emotional manipulation—one of the core features of

psychological control—may prevent youth from developing effective emotion regulatory skills (Morris et al., 2002). Given the transformations that occur during adolescence (e.g., cognitive development, puberty, and autonomy; Steinberg & Morris, 2001), it is possible that parental emotion manipulation may have an especially detrimental impact on the development of emotion regulation.

Specifically, we found that parents' psychological control was related to poorer adolescent emotion regulation regardless of age and gender, and that the links between psychological control and depressive symptoms and aggressive behavior were primarily indirect through anger regulation. In addition, among older adolescents, lower anger regulation put adolescents at risk for developing externalizing problems in the face of parental psychological control. It should be emphasized that psychological control is not the only predictor of anger regulation, however. There are other factors, such as neighborhood violence and parental psychopathology, that predict poor anger regulation (Han & Shaffer, 2013; Raver, 2004; Schwartz & Proctor, 2000) and, thus, emotion regulation can act as both a mediator and moderator. Indeed, greater sadness regulation protected all adolescents from developing internalizing problems in the context of parental psychological control. Moreover, psychological control appears to be negatively associated with emotion regulation, particularly anger regulation, and this may be one of the mechanisms in the link between psychological control and child and adolescent adjustment (i.e., through its relation to anger regulation). In contrast, the ability to regulate sadness appears to be a strong protective factor against the harmful effects of psychological control, for both boys and girls and among younger and older adolescents. Our results suggest strengthening factors within and beyond the family that increase emotion regulation abilities during adolescence, as we describe in more detail in the following section.

Strengths and Limitations

One of the strengths of this study was the use of multiple reporters across constructs. The use of both parent and adolescent reports of adolescent emotion regulation and aggression is a strength of this study. The association between these variables across reporters strengthens the quality of study findings. A second strength of this study was that we used adolescent reports of parental psychological control. Adolescents' perceptions of parental psychological control may be important in parenting studies in terms of predicting developmental outcomes (Morris, Cui, & Steinberg, 2013; Steinberg, 2005) because adolescents' own perceptions of control are more salient than other reporters' when examining psychosocial adjustment. A third strength was the use of a disadvantaged family sample, which expands our understanding of the effects of intrusive parenting and emotion regulation on adolescent adjustment beyond studies commonly examining psychological control in middle income samples. Finally, we controlled for alternative adjustment scores in our moderation analyses while examining both depressive symptoms and aggressive behavior, which allowed us to investigate more accurate effects on aggressive behavior and depressive symptoms uniquely.

One of the limitations of the study is that the data used were cross-sectional. We cannot address the direction of effects in our indirect effect models to rule out the possibility that it might be adolescent behavior problems that elicited more psychologically controlling strategies from parents. Soenens Luyckx, Vansteenkiste, Duriez, et al. (2008) found reciprocal effects between parental psychological control and adolescent depressive

symptoms, and Wijsbroek, Hale, Raaijmakers, and Meeus (2011) found stronger adolescent adjustment (anxiety disorders) driven effects of parental psychological control. It is possible that adolescent aggressive behavior and depressive symptoms cause parents to use more psychologically controlling strategies. Because of the cross-sectional nature of this study, readers should be cautious in interpreting the indirect effects of psychological control through anger regulation. More studies, especially longitudinal studies with larger samples, are needed to test both mediating and moderating roles of emotion regulation in the future. Longitudinal studies will also allow us to test the development of emotion regulation and parents' changes in parenting across adolescence. Another limitation was that all data were questionnaire data. It is important for future studies to use observational data of parental psychological control and adolescent emotion regulation to get more objective measures of both, and to increase practical and ecological validity. A third limitation was that the reliabilities of both parent- and adolescent-reported sadness regulation were relatively low. Nevertheless, in indirect effect models, they were used as indicators for a latent sadness regulation variable, which helped reduce the measurement errors. Another related limitation was that our emotion regulation measure taps into adolescents' general abilities of emotion regulation and does not take context into account. Other emotion regulation measures that specifically assess adaptive or maladaptive strategies such as cognitive reappraisal or suppression may help us better understand the role of emotion regulation in the link between parenting and adjustment. Another limitation was that the subsample size of each ethnic group was small, and we were not able to test ethnic differences in the effects of psychological control and emotion regulation. In the future, research with large, representative samples is needed to gain sufficient power to examine ethnic effects (Bornstein, Jager, & Putnick, 2013) when examining the development of emotion and emotion regulation among adolescents.

IMPLICATIONS FOR RESEARCH, PRACTICE, AND APPLICATION

The current study is among the first to investigate emotion regulation as one of the underlying mechanisms explaining why parental psychological control contributes to adjustment problems, and to provide support for the premise that strengthening emotion regulation skills in the face of intrusive parenting can enhance resilience. Our findings suggest the need for parenting programs aimed at preventing the use of psychological control among parents of adolescents of all ages, and adolescent programs aimed at increasing both anger and sadness regulation. It is important to educate parents that psychological control is a universally negative parenting strategy and to help parents identify and reduce the use of such behaviors. It is even more important to teach adolescents, especially older adolescents, adaptive emotion regulation skills, particularly anger regulation strategies. Results of the current study also highlight the importance of working with parents and adolescents in disadvantaged neighborhoods to improve parenting and emotion regulation to reduce aggression and depression among adolescents at risk for psychopathology.

ADDRESSES AND AFFILIATIONS

Amanda Sheffield Morris, Department of Human Development & Family Science, College of Human Sciences, Oklahoma State University, 700 North

Greenwood Avenue, Tulsa, Oklahoma 74106-0700, USA. E-mail: amanda.morris@okstate.edu. Lixian Cui is at the University of Toronto, Michael M. Criss is at Oklahoma State University, Benjamin J. Houltberg is at Indiana University-Purdue University, and Jennifer S. Silk is at the University of Pittsburgh.

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