



# The Role of Youth Anger in Explaining Links Between Parenting and Early Adolescent Prosocial and Antisocial Behavior

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## Abstract

The purpose of the current investigation was to examine the role of youth anger regulation and reactivity in the link between parenting and social adjustment among a sample of 84 youth residing in disadvantaged neighborhoods in a mid-southwestern city. Using path analysis, findings indicate that parents' responsive and discipline-related behaviors were associated with antisocial and prosocial behaviors in different ways. Parental support was positively associated with prosocial behavior (directly and indirectly through anger regulation), while permissive discipline was positively associated with antisocial behavior directly and indirectly through anger reactivity. The patterns of associations in the model remained significant even after youth age and sex were entered as covariates. Implications of the study for intervention programs targeting anger regulation and parenting in youth and families in high-risk settings are discussed.

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An extensive body of research has demonstrated that parenting is a significant predictor of a number of adolescent outcomes (Day & Padilla-Walker, 2009; Kennedy, Bybee, Sullivan, & Greeson, 2010; Pettit, Bates, & Dodge, 1997; Smith, Prinz, Dumas, & Laughlin, 2001). For instance, high levels of parental acceptance and support (Day & Padilla-Walker, 2009; Pettit et al., 1997; Smith et al., 2001) and low levels of harsh and inconsistent discipline (Dishion, Ha, & Véronneau, 2012; Gorman-Smith, Henry, & Tolan, 2004; Stattin & Kerr, 2000; Walton & Flouri, 2010) have been linked to high levels of prosocial behavior and low levels of antisocial behavior during middle childhood and adolescence. While parents play a critical role in promoting positive outcomes during childhood and adolescence, less is understood regarding the processes and mechanism underlying this link (Cicchetti, 2006). One potential mechanism may be youth emotion regulation, as studies have found it to be linked to both parenting and parent-child relationships (e.g., Eisenberg et al., 2001; Fabes, Leonard, Kupanoff, & Martin, 2001; Morris, Silk, Steinberg, Myers, & Robinson, 2007; Repetti, Taylor, & Seeman, 2002) and adolescent adjustment (e.g., Kliewer et al., 2004; Silk et al., 2011). While this suggests that parenting may be associated with adolescent adjustment via emotion regulation, few investigations have tested such models, especially using samples with youth from disadvantaged neighborhoods. In response, the purpose of the current investigation was to examine whether parental support and permissive parenting were directly and indirectly (via anger reactivity and regulation) related to antisocial and prosocial behavior using a sample of youth from disadvantaged neighborhoods.

**Parental Support and Permissive Discipline**

Early adolescence is characterized by a number of transformations within youth and parent-child relationships (Steinberg & Morris, 2001). In addition to developmental changes in cognitive and social cognitive abilities (e.g., abstract thinking, perspective taking; Selman, 1980; Steinberg, 2011), early adolescents experience physical transformations associated with puberty that often influence how the adolescent views himself or herself and how parents view the adolescent (Paikoff & Brooks-Gunn, 1991). Moreover, adolescents from low-income, socioeconomically disadvantaged families often experience more challenges during the transitions of early adolescence as these

youth are at a greater risk for the early-onset of puberty (e.g., Belsky, Steinberg, & Draper, 1991) and engaging in antisocial behavior (Ingoldsby & Shaw, 2002; Leventhal & Brooks-Gunn, 2000).

Given the challenges of early adolescence among high-risk youth, social scientists have examined the role that parenting plays in promoting positive and adaptive outcomes during this developmental period. This research showed that high levels of parental support and involvement are related to better social adjustment, such as high levels of prosocial behavior and low levels of antisocial behavior (Criss, Shaw, Moilanen, Hitchings, & Ingoldsby, 2009; Day & Padilla-Walker, 2009; Trentacosta et al., 2011). For example, Criss and colleagues (2009) found that high levels of supportive parenting were significantly related to high levels of social skills and low levels of antisocial behavior during early adolescence. These findings are consistent with a study by Trentacosta and colleagues (2011) who reported that high and stable levels of parental openness and warmth were related to low levels of antisocial behavior and positive peer relationship quality during adolescence. In addition, other research has shown that adolescents whose families have clear rules and limits foster an environment that is predictable (i.e., youth know what to expect). Moreover, such parenting practices can lead to strong parent-child attachment and a sense of safety, security, and predictability (see Morris, Cui, & Steinberg, 2013, for a review). The inconsistency in parental socialization efforts may be particularly important for children and adolescents in disadvantaged neighborhoods and may increase the risks for poor outcomes, such as antisocial behavior. For example, permissive discipline that lacks the supervision of children's activities or inconsistent follow through in setting limits may expose children to antisocial behavior (Gorman-Smith et al., 2004; Stattin & Kerr, 2000; Walton & Flouri, 2010).

### *Indirect Effects*

While there is evidence linking parental support/involvement and permissive parenting to social adjustment during early adolescence, there have been few investigations examining potential underlying mechanisms and processes, especially among high-risk families (Cicchetti, 2006). Examining indirect effects is important as it can inform the development of intervention programs targeting adolescents from disadvantaged backgrounds (Criss et al., 2009; Herts, McLaughlin, & Hatzenbuehler, 2012). One potential underlying mechanism is adolescent emotion regulation. Anger regulation and anger reactivity are two emotion regulation factors that likely relate to social adjustment during early adolescence. *Anger regulation* reflects the ability to manage anger in social situations and consists of internal and external processes

involved in initiating, maintaining, and modulating the occurrence, intensity, and expression of anger (Eisenberg & Morris, 2003; Thompson, 1994). In contrast, *anger reactivity* represents the child's tendency to react to stressors with high degrees of emotional lability, including anger, irritability, and frustration (Rothbart & Ahadi, 1994). Evidence from the literature has shown that, compared with younger children, older children and adolescents are better able to self-regulate and tend to use more advanced cognitive strategies when modulating negative affect (e.g., Buchanan, Eccles, & Becker, 1992; Morris et al., 2007). In addition to these changes in emotion regulation, research has shown that youth who demonstrate high levels of anger reactivity are more likely to exhibit high levels of externalizing problem behaviors (Henry, Caspi, Moffitt, & Silva, 1996; Rydell, Berlin, & Bohlin, 2003; Silk et al., 2007; Steinberg et al., 2006) and low levels of prosocial behavior and social skills (Carlo, Crockett, Wolff, & Beal, 2012; Spinrad et al., 2006).

Investigating adolescent emotion regulation as an underlying mechanism in the link between parenting and adolescent social adjustment is based on the literature showing that parents are critical socializing agents in the development of emotion regulatory skills. In particular, research has indicated that when parents are involved in their children's lives and are emotionally supportive, children have better emotion regulation skills (Eisenberg et al., 2001; Fabes et al., 2001; Repetti et al., 2002). Morris et al. (2007) argued that one way parents influence children's emotion regulation is through the emotional climate of the family (e.g., parenting styles), and through specific parenting practices associated with the socialization of emotion regulation. When parents are supportive and generally accepting of emotions (there are no *bad* or *wrong* emotions), children learn how to regulate emotions in socially adaptive ways (Morris et al., 2007). This type of support allows children to openly express emotions in a responsive context, allowing ample opportunities for developing successful emotion regulation skills. Furthermore, an emotional climate that lacks structure and discipline is associated with a chaotic environment and decreased ability for children to control emotions (Valiente, Lemery-Chalfant, & Reiser, 2007), such as anger (Davies & Cummings, 1998; Eisenberg, Fabes, & Murphy, 1996).

In addition to theoretical evidence, empirical findings have provided further support for the link between parenting and emotion regulation. For example, using a sample of Chinese American adolescents, Liew, Kwok, Chang, Chang, and Yeh (2014) found that high levels of parental autonomy support were significantly related to high levels of adolescent emotional self-control, anger control, and executive functioning and low levels of negative emotionality. In addition, using a sample of 11- to 18-year-old youth in London, Walton and Flouri (2010) demonstrated that high levels of parental

psychological control and low levels of parental warmth were significantly related to high levels of emotional difficulties. Moreover, Fosco and Grych (2012) found that high levels of parental (mother and father) warmth/emotion support and family positivity were significantly related to high levels of anger regulation in a sample of fourth and fifth graders. Finally, in one of the few published studies testing indirect effects using a high-risk sample, Cui, Morris, Criss, Houltberg, and Silk (2014) reported that parental psychological control was indirectly related to adolescent aggressive behavior via youth anger (but not sadness) regulation. Although these findings added to our understanding of the importance of parenting in the prediction of social adjustment, more research examining potential direct and indirect effects is needed.

## **The Current Study**

In summary, the existing literature indicates that high levels of parental support/involvement and low levels of permissive parenting are linked to low levels of antisocial behavior and high levels of prosocial behavior. In addition, there is evidence that adolescents' anger regulation and reactivity are linked to positive and negative aspects of adolescent social adjustment. However, there are some noticeable gaps in the literature. First, few investigations have examined the potential underlying mechanisms and processes linking parenting behaviors and social adjustment during late childhood and early adolescence, especially among youth from disadvantaged neighborhoods. Second, few studies included multiple measures of parenting, emotion regulation processes, and youth's social adjustment which would allow for the consideration of potential distinct pathways linking parenting to both antisocial and prosocial behavior.

To address these gaps, we tested whether parenting (i.e., parental support, permissive discipline) was directly and/or indirectly related to child social adjustment (i.e., antisocial behavior, prosocial behavior) via anger regulation and/or reactivity using a sample of children aged 7 to 15 years from disadvantaged neighborhoods. Because of the lack of previous studies examining the indirect effects of parenting on both antisocial and prosocial behavior through anger reactivity and regulation, all pathways were initially tested for significance. Given possible sex (Gullone, Hughes, King, & Tonge, 2010; Perry-Parrish & Zeman, 2011) and age (Buchanan et al., 1992; Morris et al., 2007) differences in emotion regulation, and potential differences in parenting behaviors and social adjustment (Steinberg & Morris, 2001), youth age and sex were entered as covariates in the analyses. We expected that high levels of parental support and low levels of permissive discipline would be related

to high levels of child prosocial behavior and low levels of antisocial behavior. In addition, we expected that these associations would be at least partially explained by anger regulation and anger reactivity.

## **Method**

### *Participants*

Participants were part of a larger study involving data collected from 84 children and adolescents (aged 7-15 years;  $\bar{X} = 10.5$ ,  $Mdn = 10$ ; 41.7% females) recruited through 2 Boys and Girls Clubs and surrounding communities in a large mid-southwestern city in the United States. The Boys and Girls Clubs in this study were located within the district of elementary and middle schools that receive Title I funding (Public Law 107-110; National Center for Education Statistics, 2010) showing a high prevalence of academic, economic, and social risk among students (U.S. Department of Education, 2010). The sample included 35 children ages 7 to 9 (41.7%), 29 children ages 10 to 12 (34.5%), and 20 children ages 13 to 15 (23.8%). Race and ethnicity were self-identified as follows: Black or African American (54, 64.3%), Caucasian (16, 19%), Hispanic (3, 3.6%), Asian (1, 1.2%), and "Other" ethnicity (10, 11.9%). In addition, most children in this sample reported a high prevalence of violence and crime in their neighborhoods in the last year including hearing guns being shot (81%), seeing someone get shot (32%), seeing someone get stabbed (38%), seeing someone beaten up (78%), and being hit or pushed (75%). The sample characteristics of this study are consistent with the national population of youth that is typically served by the Boys and Girls Clubs. Boys and Girls Clubs of America (2010) reported providing services to a high number of minority children that qualify for free and reduced price school lunches living in disadvantaged communities. Consistent with our sample, Boys and Girls Clubs of America (2010) reported serving a slightly higher number of boys with a large proportion of children between the ages of 6 and 15.

### *Procedure*

Prior to conducting the study, University Institutional Review Board (IRB) approval was obtained. Boys and Girls Clubs' personnel and research team members recruited participants by distributing flyers to families served by the organization and living in the surrounding community. Families that participated in the study attended one of two early evening sessions held at each site, and were informed about the nature of the study, that participation was

voluntary, and that services through the Boys and Girls Clubs would not be affected by study participation. Parents and children were informed that the aim of the study was to better understand community and family factors related to youth adjustment. After the consent of the parent was given and child assent was obtained, research assistants read questionnaires to participants (parents and children were in separate rooms) while participants marked their answers individually and read along on their own. Each child and each parent was compensated \$20 USD for completing the questionnaires (\$40 per parent-child dyad).

## Measures

**Parental support and permissive discipline.** Parental support and permissive discipline were assessed using the 51-item *Alabama Parenting Questionnaire* (APQ; Frick, 1991; Shelton, Frick, & Wootton, 1996). Frick, Christian, and Wootton (1999) found the APQ to be reliable in a diverse urban sample. Response choices of the APQ are on a Likert-type scale: 1 = *never*, 2 = *almost never*, 3 = *sometimes*, 4 = *often*, and 5 = *always*. Youth were instructed to answer questions about their parents or primary caregivers. If responses differed for caregivers, children were instructed to answer questions for the person who cares for them the most. For the Parental Involvement subscale only, children reported on 10 questions regarding their mothers and 10 questions regarding their fathers, and the mean scores of responses for both parents were combined for a mean score of parental involvement. The 6-item Positive Parenting subscale (e.g., “Your parents praise you for behaving well”) and the 10-item Parental Involvement subscale (e.g., “You have a friendly talk with your mom or dad”) were highly correlated in the present study ( $r = .66, p = .001$ ). Consistent with previous research (Hinshaw et al., 2000) these subscales were combined to construct the parental support variable, with higher scores indicating higher parental support ( $\alpha = .92$ ). For permissive discipline, a combined mean score for the 10-item Poor Monitoring subscale (e.g., “You stay out later than you are supposed to and your parents don’t know it”) and the 6-item Inconsistent Discipline subscale (e.g., “The punishment your parents give depends on their mood”) was calculated for an overall permissive discipline score. Poor monitoring and inconsistent discipline were highly correlated ( $r = .54, p = .001$ ) and demonstrated good internal consistency when combined ( $\alpha = .78$ ).

**Anger reactivity and regulation.** The *Children’s Anger Management Scales* (CAMS; Zeman, Shipman, & Penza-Clyve, 2001; Zeman, Shipman, & Suveg, 2002) were used to assess children’s anger regulation and reactivity.

Children responded on a 3-point Likert-type scale: 1 = *hardly ever*, 2 = *sometimes*, and 3 = *often*. Anger regulation was assessed using the 4-item Anger Coping scale (e.g., “When I am feeling mad, I control my temper”). Anger reactivity was assessed using the 3-item Anger Dysregulation scale (e.g., “I do things like slam doors when I am mad”). The construct validity of the CAMS has been established through comparisons with the Emotion Regulation Checklist (Suveg & Zeman, 2004; Zeman et al., 2002) and the Child Behavior Checklist (Shields & Cicchetti, 1997). Previous studies have demonstrated adequate internal and construct validity of the scales with Cronbach’s alphas ranging from .62 to .77 (Sullivan, Helms, Kliewer, & Goodman, 2010; Suveg & Zeman, 2004; Zeman et al., 2001, 2002). The anger coping/regulation ( $\alpha = .60$ ) and anger dysregulation/reactivity ( $\alpha = .58$ ) factors each were computed by averaging the items in the current study, with higher scores indicating higher levels of the variable being assessed.

*Children’s social adjustment: Prosocial and antisocial behavior.* Children’s social adjustment was measured using the *Strengths and Difficulties Questionnaires* (SDQ; Goodman & Scott, 1999) and the *Relational Aggression Questionnaire* (RAQ; Crick, 1997). The SDQ five-item subscale of Prosocial Behavior (e.g., “I am helpful if someone is hurt, upset, or feeling ill”) was used with response choices that follow 1 = *not true*, 2 = *somewhat true*, and 3 = *certainly true*. The prosocial behavior factor was created by averaging the five items ( $\alpha = .70$ ). The antisocial behavior factor was created based on the five-item SDQ Conduct Problems subscale (e.g., “I fight a lot”) and the five-item RAQ (e.g., “You tell friends you will stop liking them unless they do what you say”). The Conduct Problems subscale used the same rating scale as the Prosocial Behavior scale. The RAQ is a Likert-type scale that ranges from 1 = *never*, 2 = *sometimes*, 3 = *frequently*, 4 = *very frequently*, and 5 = *always*. Conduct problems and relational aggression items were standardized using *z* scores and then combined ( $r = .25$ ,  $p = .02$ ,  $\alpha = .63$ ) to create the antisocial behavior factor.

### **Analytic Approach**

Descriptive statistics and bivariate correlations among the study variables were computed. Next, path analysis was conducted in *Mplus* version 6 (Muthén & Muthén, 1998-2010) to test a saturated model with all pathways specified including covarying endogenous and exogenous variables for statistical significance. All pathways were included as there was limited empirical support for some of the hypothesized pathways, and path analysis allows for testing the tenability of theoretical models (Kline, 2011). With fully saturated models, the fit indices cannot be evaluated. The model is assumed to fit



the data perfectly if all possible pathways and correlations are estimated. Thus, the full model was trimmed in order to find the more parsimonious models that were consistent with theory (Kline, 2011) and goodness of fit was evaluated through the full information maximum likelihood (FIML) chi-square test and several goodness of fit (GOF) indexes (Marsh, Hau, & Wen, 2004). We controlled for sex and age differences by including each factor as a predictor separately in the trimmed model to examine any potential changes among the path coefficients and model fit statistics (Kline, 2011). Finally, the indirect effects of the final model were examined for statistical significance using bootstrap methodology in *Mplus* (Muthén & Muthén, 1998-2010). Standard errors and 95% biased-corrected confidence intervals of these coefficients with 2,000 bootstrap samples were estimated and examined to determine significance (MacKinnon, Lockwood, & Hoffman, 2002).

## Results

### *Descriptive Statistics and Bivariate Correlations*

Bivariate correlations are presented in Table 1. Parental support was positively associated with both anger regulation and prosocial behavior, while permissive discipline was positively related to both anger reactivity and antisocial behavior. Anger regulation was positively correlated with prosocial behavior, and high levels of anger reactivity were related to high levels of antisocial behavior. Prosocial behavior was negatively associated with antisocial behavior. Anger reactivity and regulation were not significantly correlated. One-way ANOVAs demonstrated no significant age differences on any of the variables of interest. The only significant sex difference found was that girls reported higher levels of prosocial behavior in comparison with boys,  $F(1, 82) = 5.64, p = .02$ .

### *The Full Model: The Initial Examination of Significant Path Coefficients*

Significant path coefficients in the full model showed a similar pattern of association as the bivariate correlations. Consistent with our hypotheses, parental support was positively associated with anger regulation,  $\beta = .34, p = .001$ , and prosocial behavior,  $\beta = .31, p = .002$ , whereas permissive discipline was positively related to anger reactivity,  $\beta = .28, p = .006$ , and antisocial behavior,  $\beta = .27, p = .01$ . The analyses also showed that anger regulation was positively related to prosocial behavior,  $\beta = .22, p = .04$ , and anger reactivity was positively associated with antisocial behavior,  $\beta = .30, p = .003$ . Contrary

**Table 1.** Descriptive Statistics and Bivariate Correlations ( $N = 84$ ).

	1	2	3	4	5	6	7	8
1. Parental support <sup>a</sup>	—	.12	.34***	.01	.37***	.01	-.12	-.07
2. Permissive discipline <sup>b</sup>		—	.12	.27**	-.06	.34**	-.11	.09
3. Anger regulation			—	-.12	.30**	.01	-.08	-.14
4. Anger reactivity				—	.01	.37***	-.14	-.09
5. Prosocial behavior					—	-.22*	-.25*	-.11
6. Antisocial behavior <sup>c</sup>						—	-.13	-.09
7. Youth sex <sup>d</sup>							—	-.08
8. Youth age								—
$\bar{X}$	3.20	2.51	2.01	1.99	1.45	1.46	1.50	10.54
SD	0.78	0.62	0.50	0.56	0.45	0.53	0.50	2.21

<sup>a</sup>Youth reports of parental support were combined mean scores of Parental Involvement and Positive Parenting subscales.

<sup>b</sup>Permissive discipline were mean scores of Poor Monitoring and Inconsistent Discipline subscales.

<sup>c</sup>Antisocial behavior were combined z scores of Relational Aggression and Conduct Problem subscales.

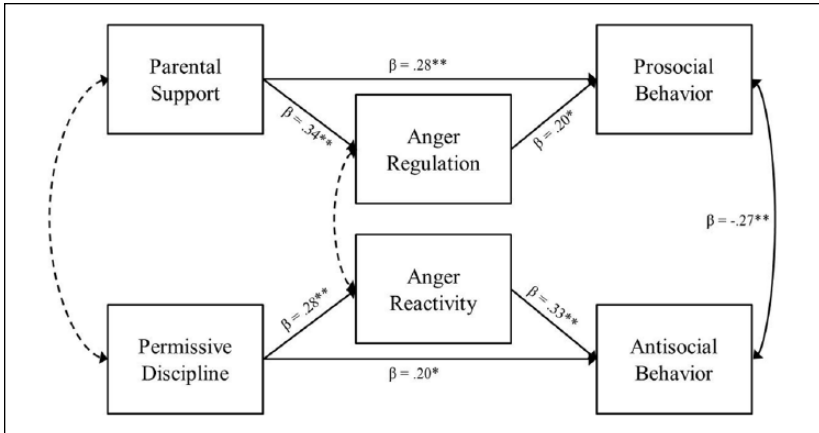
<sup>d</sup>Sex was coded as 1 = female and 2 = male.

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

to our hypotheses, parental support was not significantly associated with anger reactivity or antisocial behavior. Furthermore, permissive discipline was not associated with prosocial behavior or anger regulation. Finally, anger regulation was not associated with antisocial behavior, and anger reactivity was not associated with prosocial behavior. No direct effects were designated for the exogenous and endogenous variables but they were allowed to covary. There was a negative correlation between prosocial and antisocial behavior,  $\beta = -.27$ ,  $p = .009$ , and the covarying paths for parental support and permissive discipline, and anger regulation and reactivity, showed no significant associations but were retained for the final model. To examine a more parsimonious model, non-significant parameters that were consistent with the lack of empirical support were fixed to zero and model fit indices were examined (Kline, 2011).

### Final Model: Model Trimming and Exploration of Sex and Age Differences

The more parsimonious model demonstrated good model fit and followed the pattern of significant associations of the full model (see Figure 1),  $\chi^2(6) = 3.28$ ,  $p = .77$ , comparative fit index (CFI) = 1.0, root mean square error of



**Figure 1.** Parental behaviors, anger regulation and reactivity, and adolescent social adjustment (final model).

\* $p < .05$ . \*\* $p < .01$ .

approximation (RMSEA) = .00, Standardized root mean square residual (SRMR) = .03. In the trimmed model, parenting behaviors were associated with child and adolescent outcomes in different ways. The findings indicated that parental support was directly and indirectly related to prosocial behavior via anger regulation. In contrast, permissive discipline was directly and indirectly related to antisocial behavior through anger reactivity. As in the full model, there was an expected inverse association between prosocial behavior and antisocial behavior, and there were no correlations between the other covarying variables (parental support and permissive discipline, and anger regulation and reactivity).

Next, we entered sex and age separately as covariates in the final model to examine potential changes in the overall findings. Consistent with bivariate correlations, the path coefficient between age and all variables in the path model were not significant. In addition, no significant differences were found in the path coefficients, model fit statistics, or overall predicted variance in the endogenous variables when age was included in the model. When sex was entered into the model, there was a significant direct effect between sex and prosocial behavior ( $\beta = -.21, p = .03$ ), which was consistent with preliminary analyses that showed higher reports of prosocial behavior among girls. However, the overall patterns of findings remained the same, and due to a lack of power no further analyses were used to examine group differences for sex.

### *Indirect Effects: Examining Confidence Intervals for Significance*

To determine the significance of indirect effects, confidence intervals around the products of the two unstandardized path coefficients were constructed using bootstrapping methods in *Mplus*. Indirect effects are considered significant if zero was not within the estimated interval (MacKinnon, Lockwood, & Williams, 2004). The two pathways from parenting behaviors to social adjustment (parental support to prosocial behavior via anger regulation and permissive discipline to antisocial behavior via anger reactivity) were examined simultaneously. These analyses indicate significant indirect effects for both pathways. Specifically, parental support was indirectly and significantly related to prosocial behavior through anger regulation,  $ab = .04$ , 95% CI [.01, .11], and permissive discipline was indirectly and significantly related to antisocial behavior through anger reactivity,  $ab = .13$ , 95% CI [.04, .56].

## **Discussion**

The purpose of the current investigation was to examine whether parenting (i.e., supportive parenting and permissive discipline) was directly and indirectly related to youth social adjustment (i.e., antisocial behavior and prosocial behavior) via emotion regulatory processes (i.e., emotion regulation and emotion reactivity). The results showed that positive parenting behaviors (e.g., support, involvement) were directly and indirectly related to prosocial behavior through anger regulation. In contrast, permissive parenting behaviors (e.g., inconsistent discipline, poor supervision) were directly and indirectly linked to antisocial behavior via anger reactivity. These pathways remained significant after statistically controlling for youth sex and age. Although, the cross-sectional design of our study limits the conclusions that can be made about the temporality of the variables of interest (e.g., social adjustment may impact youth anger regulation or parenting), these findings add to the growing body of research suggesting that there may be distinct pathways linking parenting and youth social adjustment.

While previous studies have showed that parental involvement and support (e.g., Day & Padilla-Walker, 2009; Pettit et al., 1997) and harsh and inconsistent discipline (e.g., Dishion et al., 2012; Gorman-Smith et al., 2004) are linked with prosocial and antisocial behavior during childhood and adolescence, we extended this body of literature by examining potential underlying mechanisms in these links. Examining potential underlying processes can be critical to edifying intervention and prevention programs focusing on at-risk youth (Criss et al., 2009; Herts et al., 2012). The results provided empirical support for distinct pathways linking parenting and social adjustment.

Specifically, high levels of parental support and involvement were significantly related to high levels of emotion regulation, which in turn, were related to high levels of youth prosocial behavior. In addition, permissive discipline was positively and significantly associated with youth anger reactivity, which in turn, was significantly and positively related to antisocial behavior. Overall, this pattern of findings is consistent with theoretical (e.g., Morris et al., 2007) and empirical (e.g., Cui et al., 2014; Eisenberg et al., 2001; Yap, Allen, & Ladouceur, 2008) evidence showing parenting to be indirectly linked to social adjustment via emotion regulatory processes. In addition, the direct pathways between parenting and social adjustment are in accord with previous studies showing the important role of the family emotional climate and structured and consistent rules for youth from disadvantaged backgrounds (Barnett, 2008; Gorman-Smith et al., 2004; Houtberg, Henry, & Morris, 2012). It is possible that through their supportive and accepting socialization efforts, parents are more effective at teaching and modeling adaptive emotion regulatory strategies (Morris et al., 2007) which allows youth to be better able to engage in prosocial behavior (Rydell et al., 2003; Spinrad et al., 2006). In contrast, chaotic home environments lacking predictability and stability may be particularly salient in the development of anger reactivity (e.g., Davies & Cummings, 1998; Eisenberg et al., 1996), which in turn, may lead to externalizing behaviors (Boxer et al., 2008; McLaughlin, Hatzenbuehler, Mennin, & Nolen-Hoeksema, 2011).

There are a few non-significant findings that are important to note. In contrast to our initial expectations, parental support was not associated with anger reactivity or antisocial behavior, and permissive discipline was not associated with anger regulation or prosocial behavior in our model. Within a disadvantaged context, parental support may not be enough to protect children and early adolescents from being emotionally reactive to stressors or engaging in antisocial behavior. This is consistent with the findings that *both* structure and support in the family are important for children living in high-risk communities (Brody & Ge, 2001; Pettit et al., 1997). Moreover, the nature of parental discipline may not provide a responsive context that allows opportunity for developing successful emotion regulation skills (Morris et al., 2007) or fostering prosocial behaviors toward others. Greater support may be needed to enhance more positive outcomes while discipline and structure are needed to prevent more negative outcomes among children from high-risk backgrounds.

The distinct links between the emotion regulation and social adjustment factors are consistent with previous studies (e.g., Zeman, Cassano, Perry-Parrish, & Stegall, 2006) and suggest that emotion regulation and reactivity may be more salient in the development of specific competencies during

middle childhood and early adolescence. It should be noted that these two factors were not significantly related in the current study. The relatively low internal consistency for the emotion factors and the small sample size may have contributed to a lack of power to detect a significant association between these two variables. In addition, the association between anger regulation and reactivity was significant among older youth in our sample (aged 11-15;  $r = -.49, p = .002$ ) indicating that the strength of association between these two factors may increase as children's regulatory skills develop (Morris et al., 2007). Moreover, there is evidence in the literature of a lack of concordance in emotion regulation constructs (e.g., regulation, reactivity) among high-risk samples (e.g., Raver, 2004). In particular, children from disadvantaged background may actively modulate expressed emotion while still having strong emotional reactivity to stressors in the environment.

Despite the strengths of this study, there are some important limitations that future research should address. For instance, youth self-reports were used for all study variables. Future investigations would benefit from utilizing other informants (e.g., parents, peers) and methods (e.g., direct behavior observation). Another limitation was the cross-sectional design. Although the current findings are consistent with empirical and theoretical evidence in the literature, it is possible that emotion regulation may elicit different types of parental socialization efforts. Indeed, preliminary longitudinal research (which unfortunately is lacking in this field) has shown that emotion regulation is linked to parental warmth and positive expressivity (assessed 4 years later; Eisenberg et al., 2005) and maternal sensitivity (assessed 5 years later; Halligan et al., 2013). Clearly, more longitudinal designs in the literature are needed. Although we controlled for age and sex differences in our final model as covariates, the small sample size lacked the power to utilize more powerful statistical tests for examining potential moderating effects of sex and age. Another limitation of the study is low internal consistency for the emotion regulation and antisocial behavior variables. However, it should be noted that these coefficients are similar to those found in other investigations (.56-.66, for example, McLaughlin et al., 2011), which may suggest a need for further refinements of these measures in diverse samples of children and early adolescents.

Our results indicate that intervention and prevention efforts working with youth that face socioeconomic risk may be strengthened by fostering a family emotional climate that supports successful emotion regulation. Promoting parenting behaviors that communicate support *and* clear structure through consistent discipline may provide an emotional climate that enhances multiple emotion regulatory processes that lead to more prosocial and less antisocial behaviors. The balance between support and structure in the family may

afford children opportunities to openly express emotions in a way that allows for practicing more adaptive and effective anger regulation. In addition, intervention and prevention efforts with early adolescents should also focus on increasing recognition of physiological aspects of anger reactivity and teaching anger coping skills. The intentional focus on becoming aware of emotional reactivity and finding ways to regulate emotions aligns with an increasingly large body of current and recent developmental neuroscience research (Greenberg, 2006). The increased activity in the subcortical emotional processing systems of the brain and immature function of prefrontal cortical control make early adolescents particularly vulnerable to emotion regulation difficulties (Hare et al., 2008). Thus, programs aimed at promoting positive social adjustment with youth living in adverse circumstances may benefit from focusing on decreasing anger reactivity and increasing anger regulation strategies.

In conclusion, the current investigation provides empirical support for the premise that emotion regulation is an important underlying mechanism in the link between parenting and youth social adjustment (see Morris et al., 2007). Specifically, findings showed that parental support was associated with anger regulation, which in turn, was related to prosocial behavior. In contrast, permissive discipline was related to heightened anger reactivity that was associated with antisocial behavior. During early adolescence when youth are facing biological, emotional, and cognitive changes (Steinberg & Morris, 2001), our study results point to parents as a critical force aiding youth in emotion regulation and positive social adjustment. Given the contextual risks that many early adolescents face, these findings can be informative in both understanding the contextual influences on socio-emotional development and in the development of interventions promoting positive social adjustment among at-risk youth.

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