

Bullies and Their Mothers: Who Influence Whom?

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Abstract—Even though most researchers would agree that in symbiotic relationships, like the one between parent and child, influences become reciprocal over time, empirical evidence supporting this claim is limited. The aim of the current study was to develop and test a model describing the reciprocal influence between characteristics of the parent-child relationship, such as closeness and conflict, and the child's bullying and victimization experiences at school. The study used data from the longitudinal Study of Early Child-Care, conducted by the National Institute of Child Health and Human Development. The participants were dyads of early adolescents (5th and 6th graders during the two data collection waves) and their mothers (N=1364). Supporting our hypothesis, the findings suggested a reciprocal association between bullying and positive parenting, although this association was only significant for boys. Victimization and positive parenting were not significantly interrelated.

Keywords—bullying, parenting, reciprocal associations, victimization

I. INTRODUCTION

BULLYING at school is a disturbing phenomenon with serious short-term and long-term consequences for both the victim and the perpetrator [1]. As such, it deserves to be empirically examined so that its parameters can be identified. According to Olweus [2], bullying is defined as a physical, verbal or psychological attack or intimidation that is intended to cause fear, distress or harm to the victim. To be considered as bullying, an aggressive act must meet three criteria: (1) it must be intentional, (2) it must be systematic and (3) it must be characterized by an imbalance of power [3], [4]. Victims of this painful experience are usually students who are perceived as vulnerable, submissive or different by peers who are in a dominant role, either by virtue of their own strength or by virtue of being associated with a powerful group [5]-[7].

Even though most researchers would agree that in symbiotic relationships, like the one between parent and child, influences become reciprocal over time [8], empirical evidence supporting this claim is limited. In fact, research on the parent-child relationship tends to investigate mainly the most obvious path. That is, how parental attributes predict or relate to children's outcomes or adjustment. This is mainly due to the traditional views of development, which have tended to conceive developmental change as an outcome or by-product of parenting [9]. The literature on bullying is not an exception, with most studies incorporating a parent effect model to describe the phenomenon.

That is, they hypothesize that parental attributes such as closeness, and conflict influence children's involvement in bullying and victimization experiences at school [10]-[12]. Furthermore, the bullying literature provides a strong case that parenting style, as well as parental attributes and characteristics, influence bullying behavior [12], [13].

Even though the majority of relevant studies tend to investigate the parent-child relation using a unidirectional, parent effect model claiming that parenting affects child behavior, several researchers have argued that the reverse phenomenon is also possible. For example, Lytton [14] points out that the correlation between the child's behavior and parenting may be a result of the disruptions in the family environment caused by the child's actions. Additionally, the control systems theory proposed by Bell [15] states that parents have a certain tolerance toward the child's behavior. A child's behavior characterized by aggressiveness, such as bullying, can reach the upper limit of the parent's tolerance resulting in the parent's "upper limit control" reactions, characterized by conflict and restriction. However, a parent will respond with "lower limit control" actions, such as emotional stimulation or offering of help, when the lower limit of the parents' tolerance is approached because of the child's social withdrawal or shyness, both of which are characteristics of victims.

In the limited literature investigating child effect models, there is evidence suggesting that child behavioral tendencies influence parenting discipline tactics [14], [16], [17]. For example, child externalizing and antisocial behavior was found to be related negatively to the quality of parent-child relationship and to decreases in nurturing parenting and parental involvement [9], [18], [19]. Additionally, Stice and Barrera [20] and Kerr and Stattin [21] found more support for a child effect model than a parent effect one when examining the relation between externalizing problems and parenting behaviors, such as monitoring, support and control. Both studies provided evidence that externalizing problems affected parenting behaviors in a more consistent and statistically significant way than the reverse, suggesting that the child's bullying behavior, which is related to externalizing problems, might also influence the parent-child relationship.

In general, studies examining child effects show decreases in positive parenting behaviors and increases in control behaviors in response to children's negative behavior. Therefore, parents may react to their child's behavior rather than (or in addition to) influencing it by their own actions [22]. Research shows that, unlike non-victimized children, victims tend to relate better to their parents than to their peers [2], which might suggest a positive relation between victimization

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and positive parent-child relationship. Furthermore, victimization was found to be positively correlated with anxiety and depression [7], and because of that parents may be more protective and less demanding toward their children to compensate for their child's social deficiencies [23]. Additionally, the association between victimization and internalizing problems might suggest that the child effect model describing internalizing problems might also apply for victimization. A number of studies provided evidence that children's internalizing problems can not only affect the child's relationship with their parents, but might even change parenting characteristics altogether [9], [18].

A. The Present Study: Aims and Hypothesis

The aim of the present study was to develop and test a model describing the influence exerted by parental attributes, such as closeness and conflict, on the child's bullying and victimization experiences at school, and at the same time the reciprocal influence of this particular child behavior on the parents' behavior at home. The participants were dyads of mothers and their children (average age 11 and 12 years old at each data collection wave). The particular age group was chosen because early adolescence is an important ecological transition marked by changes in the parent-adolescent relationship [24], [25] and increases in the prevalence of bullying behavior [2], [10].

In addition, it is necessary to take into account gender differences when investigating behavioral problems because boys are at higher risk for developing aggressive problems than girls [26], [27]. In general, studies report that more boys compared to girls tend to engage in bullying behavior, although no gender differences in the prevalence rates of victimization have been reported [28]-[30]. Furthermore, Keenan and Shaw [31] suggest that gender differences in behavioral problems result from socialization. Such differential socialization processes may also be linked to the adolescents' relationship with their parents. For example, it is well documented that during early adolescence mothers and daughters are more likely to engage in high conflict and disagreement in comparison to mothers and sons [24], [32], [33]. Additionally, research provides evidence suggesting that parents use parenting styles that promote autonomy and assertion in boys, although parenting styles that promote connectedness and communion are used for girls [34], [35]. Therefore, it is essential to examine gender differences, not only because of boys' and girls' differences in behavior, but also because parents behave differently toward their sons compared to their daughters.

To investigate our hypotheses, a structural equation model was employed. Such a model is beneficial because it has the power to provide latent factors based on measured variables and allows the investigation of how these latent factors relate to each other. The hypothesized structural equation model is shown in Fig. 1. As depicted in Fig. 1, the present study uses a longitudinal cross-lag model over two waves of measurement to investigate the reciprocal link between children's

relationships with their mothers and bullying and victimization experiences during early adolescence. Longitudinal cross-lag models are advantageous because they control for the association between the variables at the initial time point of measurement. Additionally, bullying and victimization tend to be highly correlated [36], and the inclusion of both in the same model can clarify the unique reciprocal effects of bullying and victimization problems over time.

The stated research hypotheses, based on prior research findings, appear below:

1. Positive parenting, defined by closeness and low conflict, will be negatively associated with bullying behavior and victimization.

2. Bullying behavior will be negatively related to positive parent-child relations. Withholding their affection and their readiness to respond to the child's needs may be a possible discipline mechanism that parents use in order to control bullying behavior.

3. Child victimization experiences at school will be related to increases in positive parenting. The justification of this hypothesis is that the internalizing problems caused by victimization, as opposed to the externalizing problems of bullying, trigger sympathetic, low conflict and supportive behaviors on the part of the parents.

4. There are gender differences in the reciprocal association between bullying, victimization and positive parenting. That is, parents (in this case, mothers) are expected to react differently to their daughter's bullying and victimization experiences compared to their son's. Also, it was expected that parenting would influence differently boys and girls in terms of their bullying-related behavior.

II. METHOD

A. Participants

The present study used data from the longitudinal Study of Early Child-Care, conducted by the National Institute of Child Health and Human Development (NICHD). This study was supported by NICHD through a cooperative agreement that calls for scientific collaboration between the grantees and the NICHD staff. Participants were recruited from different hospitals across ten locations in the United States. A total of 8,986 women gave birth in those hospitals during the sampling period (i.e. between January and November of 1991). A subgroup of 1,364 of those women completed the home interview when the infant was 1 month old. These mothers and their children comprised the final sample of the study. The sample was diverse in terms of gender (53% of the children were male), social background (24% were from minority families), maternal education (11% of the mothers had not completed high school), and marital status (14% were single mothers). The average family income was 3.6 times the poverty threshold. Recruitment and selection procedures are described elsewhere (<http://secc.rti.org>). It should be stressed that this data set was acquired and handled following all the legal and ethical standards of research practice.

TABLE I
MEAN AND STANDARD DEVIATION SCORES ON EACH MEASURED VARIABLE

Measured variable	Means (SD)	
	Boys	Girls
Year 1:		
Bullying	5.29 (1.93)	5.03 (1.65)
Victimization	7.25 (3.18)	7.10 (2.99)
Closeness	36.35 (3.33)	36.79 (3.16)
Conflict	25.82 (6.02)	25.32 (6.10)
Year 2:		
Bullying	5.54 (2.05)	5.42 (2.04)
Victimization	6.99 (2.96)	7.06 (2.80)
Closeness	35.89 (3.62)	36.42 (3.47)
Conflict	25.59 (6.10)	24.81 (6.35)

Note. Values not enclosed in parenthesis represent the mean of each variable and the values enclosed in parenthesis represent the standard deviation.

Thus, the participants of the present study were 1,364 early adolescents and their mothers. The data were collected in two points in time with a full year in between. That is, bullying and victimization experiences at school were reported by the children when they were at grade 5 (Year 1) and again at grade 6 (Year 2), and conflict and closeness were reported by parents (in this case, mothers) when their children were at grade 5 and grade 6.

B. Measures

Bullying and Victimization. Engagement in physical and verbal bullying behaviors with school classmates and perceived victimization during grade 5 and grade 6 were based on *The Perception of Peer Support Scale* (PPSS) [37]. The child answers by choosing a number from 1 to 5 (Never, Hardly ever, Sometimes, Most of the time, and Always). Both the perceived victimization scale (4 items, Cronbach's alpha = .81) and the engagement in bullying behaviors scale (4 items, Cronbach's alpha = .78) had good internal reliability. The items along with the factor loadings are shown in Table II.

Closeness and Conflict between the mother and the child during grade 5 and grade 6 were measured with the *Child-Parent Relationship Scale* (CPRS) [38]. The items in the CPRS were derived from attachment theory, and the measure enabled mothers to report the child's attachment behaviors at home. Mothers' reported their feelings and beliefs concerning their relationship with their child, and also reported their child's behavior toward them. The CPRS asks parents to rate items on a 5-point, Likert-type scale, ranged from 1 = "Definitely does not apply" to 5 = "Definitely applies". The conflict score was computed as the sum of 7 items, e.g. "My child easily becomes angry at me," with higher scores indicating more conflict between the mother and the child (grade 5 $\alpha = .84$; grade 6 $\alpha = .85$). The closeness score was computed as the sum of 8 items, e.g. "We share an affectionate and warm relationship with my child," with higher scores indicating more closeness between the mother and the child (grade 5 $\alpha = .73$; grade 6 $\alpha = .76$).

III. RESULTS

A. Descriptive Statistics

Table I shows the means and standard deviations for boys and girls on each of the variables under investigation. According to t-test analyses, boys scored higher on bullying at grade 5 compared to girls, $t(986) = 2.20$, $p < .05$. No gender differences in the parenting variables were found. According to pair wise t-test analyses, mothers reported lower closeness from year 1 to year 2 for both boys, $t(489) = 3.36$, $p < .001$, and girls, $t(491) = 2.75$, $p < .01$. Additionally, boys, $t(481) = -2.33$, $p < .05$, and girls, $t(470) = -4.74$, $p < .001$, reported higher bullying at grade 6 compared to grade 5.

B. Plan of Analyses

Structural Equation Modeling (SEM) in Mplus 6.1 [39] was employed for the analyses. Three standard fit indexes were used in addition to the Chi-square statistic to evaluate model fit: The Root Mean-square Error of Approximation (RMSEA), Standardized Root Mean Residual (SRMR), and the Comparative Fit Index (CFI). Values less than .10 for the RMSEA and the SRMR, and a value higher than .90 for CFI are considered acceptable [40]. Maximum likelihood was utilized for all the analyses. Additionally, Mplus accommodates missing data by using full information maximum likelihood, retaining children with incomplete assessments in the analysis. Therefore, all children comprising the final sample ($N = 1364$) of the NICHD Study of Early Child Care were used in the analyses.

C. Measurement Model

The measurement model consisted of three latent constructs at each of the two waves of measurement: bullying, victimization, and positive parenting. Parent reports of closeness and conflict were used as manifest indicators for positive parenting. The latent factors of bullying and victimization were each based on four items (see Table 2). Latent factors were all inter-correlated to investigate the fit of the measurement model. The measurement model showed acceptable fit, $\chi^2_{(155, N = 1364)} = 1176.28$, $RMSEA = .079$ ($RMSEA\ CI: .075|.083$), $SRMR = .053$, $CFI = .92$. Therefore, we proceeded with the inclusion of regression paths between the variables under investigation. Factor loadings are presented in Table 2 and correlations among the latent constructs are presented in Table 3. As shown in Table 3, all the constructs under investigation were significantly inter-correlated in the expected direction. That is, bullying and victimization were positively inter-correlated, and positive parenting was negatively related to both bullying and victimization.

TABLE II
STANDARDIZED ESTIMATES OF FACTOR LOADINGS ($N = 1364$)

Questionnaire items	Year 1	Year 2
	Victimization	
V1. Does anyone in your class ever pick on you at school?	.75	.86
V2. Does anyone in your class ever say mean things to you at school?	.89	.91

V3. Does anyone in your class ever say bad things about you to other kids at school?	.78	.76
V4. Does anyone in your class ever hit you at school?	.71	.77
	Bullying	
B1. I pick on other kids in my class at school	.68	.79
B2. I hit kids that are weaker than me	.84	.83
B3. I pick on other kids at school	.74	.78
B4. I do name-calling with other kids	.62	.65
	Positive parenting	
Conflict	.87	.83
Closeness	.75	.78

Note. All loadings statistically significant at the $p \leq .001$ level.

TABLE III
MEASUREMENT MODEL LATENT CORRELATIONS ($N = 1364$)

	Bull. Y1	Victim. Y1	Posit. par. Y1	Bull. Y2	Victim. Y2
Victim. Y1	.47				
Pos. par. Y1	-.16	-.17			
Bullying Y2	.59	.27	-.17		
Victim. Y2	.23	.60	-.14	.32	
Pos. par. Y2	-.18	-.16	.75	-.20	-.17

Note. All correlations significant at the $p < .001$ level; Y = year.

D. Main Effect Model

The hypothesized model is based on a two-wave Cross-Lag Model and is illustrated in Fig. 1. We also included cross lag paths between bullying and victimization in order to control for their potential associations over time. This model differed from the measurement model in that unidirectional paths were specified across waves. However, an equal number of parameters were estimated, so the goodness of fit and the chi-square statistics remained the same as the measurement model, $\chi^2_{(155, N = 1364)} = 1176.28$, $RMSEA = .079$ ($RMSEA\ CI: .075|.083$), $SRMR = .053$, $CFI = .92$. The full model was compared to a nested one with all non-significant paths removed. The reduced model (see Fig. 2) also showed acceptable fit, $\chi^2_{(158, N = 1364)} = 1178.61$, $RMSEA = .078$ ($RMSEA\ CI: .074|.082$), $SRMR = .053$, $CFI = .92$, and fit the data equally well as the full model, $\Delta\chi^2_{(3, N = 1364)} = 2.33$, $p = .51$. Therefore, we decided to proceed with the more parsimonious, reduced model.

The autoregressive paths between Year 1 and Year 2 for victimization, $\beta = .63$, $SE = .03$, $p < .001$, bullying, $\beta = .59$, $SE = .03$, $p < .001$, and positive parenting, $\beta = .73$, $SE = .03$, $p < .001$, were all significant. As illustrated in Fig. 2, bullying at Year 1 was negatively associated with positive parenting, $\beta = -.09$, $SE = .03$, $p < .01$, and negatively associated with victimization, $\beta = -.07$, $SE = .04$, $p < .05$, at Year 2. Victimization was not significantly related to bullying or positive parenting. Positive parenting at Year 1 was negatively associated with bullying, $\beta = -.11$, $SE = .04$, $p < .01$, at Year 2.

Therefore, the results suggest a reciprocal association between bullying and positive parenting across time.

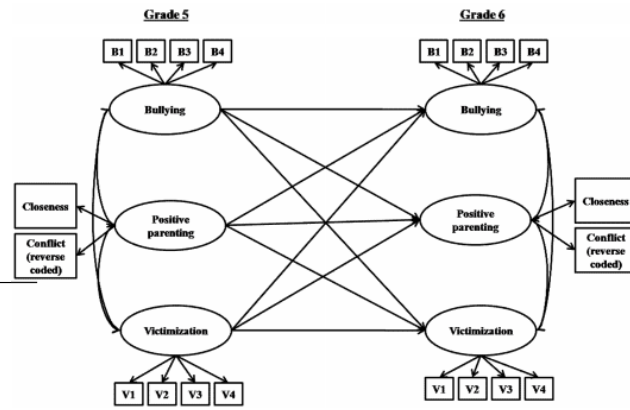


Fig. 1 Hypothesized two wave cross-lag model

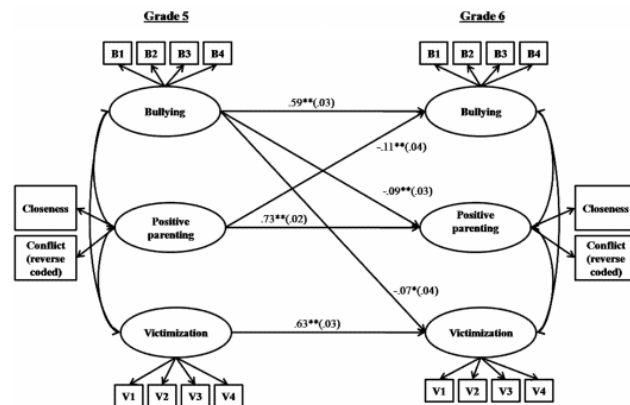


Fig. 2 Final model with all non-significant paths removed.

Note: ** $p < .01$; * $p < .05$.

E. Moderation by Gender

Initial analyses were conducted on the measurement model to test for measurement equivalence. First, we compared a measurement model with invariant factor loadings across groups (boys versus girls) to a measurement model in which the factor loadings were freely estimated across groups. A comparison of the models suggested no change in the fit indexes ($\Delta CFI = .01$, $\Delta RMSEA = 0$, $\Delta SRMR = 0$), and we concluded that the manifest indicator loadings did not differ across groups, suggesting measurement equivalence [41]. Therefore, we proceeded with a multiple group SEM model comparing boys to girls in terms of differences in the significant regression paths, as shown in Fig. 2 [39]. Multiple group mixture modeling is used when there is one categorical variable (i.e., gender) for which class membership is known and equal to the groups identified in the sample (i.e., two groups depicting boys and girls). The multi-group approach allows for the identification of differences between groups in the structural equation modeling, by holding one of the two groups constant and investigating for differences in the other group.

The factor loading parameters were held equal across groups to specify measurement equivalence, as previously suggested.

This multiple group SEM model also fit the data well, $\chi^2_{(344, N = 1364)} = 1557.32$, $RMSEA = .078$ (RMSEA CI: .074|.082), $SRMR = .053$, $CFI = .92$. The findings suggested that the effect from bullying at Year 1 to positive parenting at Year 2 was only significant for boys, $\beta = -.14$, $SE = .04$, $p < .01$, but not for girls, $\beta = -.06$, $SE = .04$, $p = .12$. Furthermore, the effect from bullying at Year 1 to victimization at Year 2 was only significant for boys, $\beta = -.09$, $SE = .05$, $p < .05$, but not for girls, $\beta = -.03$, $SE = .05$, $p = .61$. Similarly, the effect from positive parenting at Year 1 to bullying at Year 2 was only significant for boys, $\beta = -.10$, $SE = .03$, $p < .05$, but not for girls, $\beta = -.01$, $SE = .04$, $p = .97$. In conclusion, the findings suggest a reciprocal association between bullying and positive parenting only for boys.

IV. DISCUSSION

The present study makes unique contributions to the relevant literature by investigating the reciprocal association between the quality of the parent-child relationship and bullying and victimization experiences within the school setting. In addition to providing information for a reciprocal effect model using longitudinal data, the findings contribute to the understanding of gender differences regarding the bullying phenomenon. In terms of the association between bullying and victimization, we found a negative unidirectional association from bullying to victimization for boys, suggesting that the higher adolescent boys score on bullying at baseline, the lower their victimization experiences one year later. We also found a negative longitudinal reciprocal association between bullying and positive parenting for boys indicating that (1) boys who scored high on bullying at year 1 had mothers who reported lower subsequent positive parenting at Year 2, whereas (2) boys who experienced higher positive parenting at Year 1 reported lower subsequent bullying problems at Year 2. No significant associations over time were found between early adolescents' reports of victimization and positive parenting.

Research hypothesis 1 was partially supported by the results. Positive parenting, operationally defined as parenting practices characterized by closeness and by low conflict at home, negatively predicted boys' bullying behavior at school, but not girls. Thus, a warm relationship with the mother in the absence of hostility and friction was associated with less bullying-related activity on the part of boys. This is in line with prior research findings [42]-[45]. However, our study adds to these findings by indicating that the association between positive parenting and bullying might be more important for boys.

In contrast, parenting did not have a significant effect on victimization. This finding might indicate that different parenting practices than the ones examined in the present study are needed to protect a child from victimization at school.

Closeness and absence of conflict were not even conducive with the inability for self-defense that places a child at risk for victimization, as earlier studies have shown [12], [46]-[48]. However, our cross-lag model differs from previous research

because it controls for initial reports for bullying. In this way, our findings raise the possibility that the dynamics of the association between parenting and victimization may be due to the variance explained by bullying.

Research hypothesis 2 was also partially supported by the results. Bullying behavior was negatively associated with positive parenting but only for boys. In other words, the more boys exhibited bullying behavior at school, the worse his relationship was with his mother at home. This relationship was characterized by distance and conflict. Thus, the present study asserts that responsiveness to the child's needs and demands, as well as close and warm relations with the child may be a tool that parents use as a controlling mechanism. That is, they offer it when their children behave in a socially acceptable manner and withhold it when they do not. What follows from this line of thinking is that children are not only the recipients of their parents input, but also the co-creators of their parents' attitudes and behavior. Boys who are bullies at school actually contribute to the development of conflict and hostility at home between them and their parents who – as a reaction – may behave in a cold and distant manner towards their children. This finding supports the claims put forward recently by an increasing number of theorists [8], [16], [49]. However, it remains unclear why boys' bullying behavior but not girls' influenced parenting. It might be that parents do not expect their daughters to act aggressively [32], and because of that they are not influenced by their daughters' negative behavior.

Research hypothesis 3 was not supported by the results. Generally, victimization at school did not seem to affect the parent-child relationship as much as bullying did. A possible explanation for the absence of an association between victimization and parenting might have something to do with the amount of information parents have about their children's involvement as victims in peer violence incidents at school. Research suggests that only a minority of children report being bullied to their parents [50], [51] and only a minority of parents even believe their children when such reports are offered [52]. Thus, parents may not see a reason to adjust their parenting style in the light of victimization about which they are unaware. Further, previous research has linked victimization to internalizing problems [7], [53]. Children who report high internalizing problems tend to be withdrawn from their peer group and exhibit fewer behavioral problems, and because these types of problems are less visible than externalizing problems, such as bullying behavior, parents may not see a need to monitor their child's activities [54]. An alternative explanation may be that parents of victimized children operate under their lower limit of tolerance because of the child's inactivity or shyness [15].

Finally, research hypothesis 4 was supported by the results. Mothers of boys seem to be influenced by their child's bullying experiences at school, but this was not true for mothers of girls.

Additionally, positive parenting was negatively related to bullying behavior only for boys. Future studies need to replicate the reciprocal model investigated in the current study

in order to elucidate the meaning of the findings related to gender differences.

In conclusion, the study's findings provide evidence for a reciprocal pathway whereby boys with bullying problems may be more likely to have negative relationships with their mothers over time. On the other hand, boys' high quality relationships with their mothers' may also act as a protective factor from the development of bullying problems. This reciprocal finding suggests that boys' bullying problems and the quality of the mother-son relationship are intertwined in a cycle of reciprocal associations. Therefore, the present results offer support to claims that children and parents co-construct their relationship and influence each other rather than one acting as the promoter and the other as the recipient of influence, at least for boys [8], [49].

Strengths of this investigation included the use of longitudinal data collected from a large sample of children which allowed the structural equation modeling analysis and the investigation of gender differences. However, the one year follow-up time might be considered to be a limitation, as additional time points of measurement would have allowed for the investigation of trajectories of change over time. Furthermore, the data were based on multiple informants, including mother and child reports. In future studies the behavior of fathers should also be examined because fathers may influence their children differently than mothers. Future avenues of research could also include mediational models between bullying and victimization experiences and parenting variables, such as the adolescent's personality, motivation, and self perceptions. Such models would enable further understanding of the mechanisms of effects reported in the present study.

The broader goal of understanding the reciprocal association between adolescents' behavioral adjustment and the parent-adolescent relationship is to help improve the lives of adolescents at risk for psychological problems [55]. Although the current study can only point to correlational links and suggest potential associations, its findings imply that mothers may play a particularly key role in staying connected with their adolescents, especially boys, and providing them with support to promote their psychological adjustment. Moreover, professionals working with the parent-adolescent dyad might need to pay particular attention to how early adolescents' bullying problems can influence their relationships with their parents and take into account differences between boys and girls. In this potentially stressful period of early adolescence [56], it is particularly important that mental health professionals and parents themselves recognize the critical role that both parents and adolescents may play in directing the onset of bullying behaviors.

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