

# Functions of Aggression and Disciplinary Actions Among Elementary School-Age Youth

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## Abstract

**Background** A link between aggression and disciplinary actions has been established; however, specific associations between reactive and proactive functions of aggression and disciplinary actions in the elementary school setting have not been evaluated. A better understanding of links between functions of aggression and disciplinary actions could directly inform whom to target and how to intervene to reduce infractions at school before more serious consequences (i.e., suspension or expulsion) occur.

**Objective** The present study evaluated unique associations between reactive and proactive aggression and increases in disciplinary actions at school over the course of 1 year.

**Methods** A sample of 173 elementary school-age youth (ages 8–10, 55.5% female) participated in the current study, with teacher and student reports as well as school record data collected.

**Results** Correlation analyses indicated that both reactive and proactive aggression were associated with increases in disciplinary actions; however, the magnitude of effects was stronger for reactive aggression. Further, path analyses indicated that when simultaneously evaluating reactive and proactive aggression, only reactive aggression was uniquely positively associated with increases in disciplinary actions.

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*Conclusions* Reactive aggression appears to be the function of aggression to target for the prevention of disciplinary actions in the elementary school setting. Findings and their implications for intervention and future research are discussed.

**Keywords** Proactive/reactive aggression · Disciplinary actions

## Introduction

With increasing concerns regarding the school to prison pipeline, researchers are even further invested in better understanding factors that contribute to child problem behavior and disciplinary practices at school (Christle et al. 2005). Elementary, middle, and high school students who receive disciplinary infractions are at risk for receiving more serious consequences, including school suspensions (Raffaele Mendez and Knoff 2003) and arrests (Monahan et al. 2014; Skiba et al. 2014). This suggests that early intervention with children receiving relatively minor disciplinary infractions is important for preventing more severe long-term outcomes. The evaluation of individual factors that are associated with disciplinary infractions resulting in documentation by school administrators would be helpful in understanding these associations. Consistent with developmental models of risk (Moffitt 1993), which suggest problem behaviors compound and evolve over time, one individual factor that may be particularly important to understanding risk for disciplinary actions is childhood aggression.

Childhood aggression has been identified as a robust predictor of problem behavior at school (e.g., McConville and Cornell 2003; Valois and McKewon 1998). However, there is ample research suggesting that outcomes associated with aggression throughout childhood and adolescence may depend on the function or the motivation behind the behavior, with research distinguishing between reactive (impulsive and retaliatory) and proactive (goal-oriented and calculated) aggression (for reviews see Fite et al. 2016; Vitaro and Brendgen 2012). While proactive aggression is associated with more severe antisocial outcomes at all ages (Fite et al. 2016; Vitaro and Brendgen 2012), reactive aggression is associated with classroom rule violations among elementary school-age youth (Kindergarten through 5th grade; Waschbusch and Willoughby 1998), suggesting that both functions of aggression may lead to problematic behavior at school. Unfortunately, however, there is very limited data on how reactive and proactive aggression are differentially related to disciplinary actions, with only one study examining these associations in an after-school care program (Fite et al. 2011). Additional research examining associations between reactive and proactive aggression and risk for disciplinary actions, particularly in the school setting, would be helpful for the development of more targeted intervention strategies and ultimately help prevent more severe disciplinary actions (such as suspension or expulsion), which can hinder future success across a multitude of outcomes. For example, if proactive aggression is more strongly linked to disciplinary actions than reactive aggression, then the focus may need to be helping youth understand the potentially negative consequences of behavior rather than poor impulse control (Fite et al. 2011). Accordingly, the current study prospectively evaluated associations between reactive and proactive aggression and disciplinary actions at school.

While the majority of research on disciplinary actions has focused on middle and high school-age youth (e.g., Christle et al. 2005; Morrison et al. 2001; Murdock et al. 2000),

suspension rates among elementary school-age youth have been as high as 5.1% of students per year, with the national average at 2.6% (Civil Rights Project 2016; Raffaele Mendez and Knoff 2003). From a prevention and intervention perspective it is useful to understand these associations as soon as they become evident, as youth who are suspended in elementary school are more likely to be suspended in middle and high school (Skiba et al. 2014). Further, early intervention with elementary school-age youth has been found to be useful for the prevention of later problem behavior (Conduct Problems Prevention Research Group 2010, 2011; Forgatch et al. 2009). Accordingly, the current study prospectively examined these associations in a sample of elementary school-age youth.

### **Proactive and Reactive Aggression**

Researchers commonly distinguish between functions of aggressive behavior. Reactive, or hostile, aggression is defined as aggression used in response to a perceived threat. Reactive aggression is typically explained using the frustration aggression hypothesis, which posits that aggressive behaviors are defensive acts guided by anger (Dodge and Coie 1987; Dodge 1991). Accordingly, youth exhibiting reactive aggression tend to display hostile attribution biases, suggesting difficulty correctly interpreting the ambiguous behavior of their peers (Crick and Dodge 1996). Further, reactively aggressive youth tend to react impulsively (Dodge 1991). Proactive aggression, on the other hand, is defined by aggressive acts designed to achieve a desired goal (Dodge and Coie 1987; Dodge 1991). This function of aggression appears to be consistent with social learning theory, in which behavior is initiated and maintained by the anticipation of rewards (Crick and Dodge 1996). Both types of aggression have been found to be stable throughout childhood and adolescence (Fite et al. 2016; Vitaro and Brendgen 2012).

In addition to being best explained by alternative theories, consequences of reactive and proactive aggression appear to be distinct (Fite et al. 2016; Vitaro and Brendgen 2012). Most relevant to the current study, although both reactive and proactive aggression are associated with delinquency and other antisocial behavior in cross-sectional studies (e.g., Fite et al. 2011), proactive aggression is associated with more long-term and potentially more serious antisocial outcomes than reactive aggression (Fite et al. 2008; Kempes et al. 2005; Vitaro and Brendgen 2012). The more severe outcomes associated with proactive aggression may be the result of these youth exhibiting callous-unemotional traits (Fite et al. 2016; Vitaro and Brendgen 2012), making these youth more willing to engage in delinquent and violent acts. This developmental progression of proactive aggression appears to be consistent with developmental models of risk, with problem behaviors persisting and exacerbating over time (Fite et al. 2016).

In contrast, other research suggests that only reactive (not proactive) aggression is associated with classroom violations, such as difficulty respecting others, remaining seated, raising hand to speak, and working quietly among elementary school-age youth (Waschbusch and Willoughby 1998). Reactively aggressive behavior is associated with poor behavior regulation (Fite et al. 2016; Vitaro and Brendgen 2012), which may contribute to limited ability to follow classroom rules. Thus, both reactive and proactive aggression may be linked to different types of problem behavior at school that may result in disciplinary action. Alternatively, the violations associated with reactive aggression, such as classroom disruptions, may be viewed as minor and do not put youth at risk for formal disciplinary action.

To our knowledge, no study has examined the links between reactive and proactive aggression and disciplinary actions in a school setting. However, a study conducted by Fite and colleagues (2011) examined the distinction between reactive and proactive aggression

and the number of disciplinary actions children received in an after-school program of 5- to 13-year-olds. They found that proactive aggression was positively associated with disciplinary actions over a 2-month time-period. However, while reactive aggression was positively associated with disciplinary actions cross-sectionally, reactive aggression was negatively associated with disciplinary actions 2 months later. These mixed cross-sectional versus prospective reactive aggression findings highlight the need for more longitudinal research examining these associations. Additionally, the school environment may be more structured in nature than an after-school program, resulting in differences in associations across settings. It may be that less severe behaviors are more impactful in the more structured setting of school. Further, while the after-school setting can provide useful knowledge regarding the associations between aggression and disciplinary actions, understanding these associations in the school setting is particularly important, as student behaviors and disciplinary actions can have more serious long-term implications (i.e., whether or not graduate, advanced education, employment opportunities, etc.). Thus, additional research examining these associations in school is an important step in this line of research.

### **Additional Factors to Consider**

Aggression is not the only factor that has been linked to behavioral concerns at school, with a host of factors contributing to child problem behavior (Reid et al. 2002). Within the school context, academic performance and peers appear to be particularly important to consider when evaluating influences of disciplinary actions. For instance, there is evidence in middle and high school samples suggesting that a student's grade-point average (GPA), an indicator of academic performance, is negatively associated with disciplinary actions, such that those with higher GPAs are less likely to receive disciplinary actions at school (e.g., Morrison et al. 2001; Murdock et al. 2000). Youth who perform well academically may be more likely to be invested in school and less willing to engage in behavior that would result in disciplinary actions and ultimately interfere with future academic goals and plans.

Previous research has also indicated that peers can be strong influences on behavior, including risk for disciplinary actions. Specifically, both peer victimization and relationships with delinquent peers have been consistently associated with increases in problem behavior throughout childhood and adolescence (Reijntjes et al. 2011; Vitaro et al. 2007). Further, peer victimization and peer delinquency have been associated with disciplinary infractions in school and after-school programs throughout childhood and adolescence (Baly et al. 2014; Fite et al. 2011; Monahan et al. 2014). Delinquent peers likely model and reinforce negative behavior that may result in disciplinary actions (e.g., Reid et al. 2002). In contrast, being victimized and rejected by peers has been associated with a failure to bond to conventional social institutions, which can result in the failure to follow norms and rules and ultimately engaging in problem behavior (e.g., Bierman 2004; Hawkins et al. 1986). Accordingly, research examining associations between reactive and proactive and disciplinary actions also needs to take into account the influence of peer relations and GPA in order to determine the unique effects of these aggression subtypes.

### **Current Study**

The goal of the current study was to evaluate whether reactive and/or proactive aggression were related to increases in the number of disciplinary actions youth received in

elementary school 1 year later. This study extends prior research by examining these associations within the school setting (rather than after-school context), over the course of a year, and by also accounting for the effects of GPA, peer victimization, and peer delinquency.

Both reactive and proactive aggression were expected to be associated with increases in disciplinary actions when also considering the influence of GPA, peer victimization, and peer delinquency. However, consistent with prior research examining after-school care disciplinary actions (Fite et al. 2011), associations with proactive aggression were expected to be stronger than associations with reactive aggression.

## Methods

### Participants and Procedures

Participants in the current study were 173 children (55.5% female), ages 8–10 ( $M = 8.75$ ,  $SD = 0.66$ ), and their primary classroom teachers ( $n = 11$ ) at an elementary school in a small community in the Midwestern United States. Although specific information regarding children's socioeconomic status was not collected, school records indicate that approximately 35% of students received free or reduced-price lunch, and the majority of students (approximately 90%) identified as Caucasian. Further, the community in which the school is located had an average per capita income of \$25,369 with 5% of individuals living below the federal poverty line (U. S. Census Bureau 2010).

The researchers' institutional review board and the elementary school's administrators approved all study procedures prior to data collection. Data for the study was collected at two time points, in fall 2013 (Time 1 [T1]) and approximately 1 year later in fall of 2014 (Time 2 [T2]). Students were considered eligible for the present study if they (a) were enrolled in third or fourth grade at T1 and (b) were not receiving special education services. There were 241 children in 3rd and 4th grade at T1. Of these, teacher consent, parent consent, and youth assent were obtained for 178 students. Three students were missing data from T1, resulting in complete data from 175. As described below (see Data Analytic Approach), two outlier cases were removed during data inspection prior to analysis because they had much higher rates of disciplinary actions than the rest of the sample. This resulted in a final sample of  $N = 173$ , or 71.8% of 3rd and 4th grade students.

#### T1

At T1, participants were in third ( $n = 95$ ) and fourth ( $n = 78$ ) grade. The data collected at this initial time point utilized youth self-reports on peer delinquency and peer victimization experiences, teacher reports on student proactive and reactive aggression, and school record data on students' GPA and disciplinary actions.

Prior to the beginning of the T1 school year, all parents/caregivers received informational letters about the study and consent forms for their child's participation. During the beginning of the school year, primary classroom teachers were recruited for participation at school staff meetings with the partnership of school administrators. Information letters were distributed to teachers and consent forms were collected.

Both parent informed consent and child assent were obtained before child self-reported data collection began. Students completed surveys approximately 2 months after the start

of school. Data collection occurred in 30-min sessions within the children's classrooms. A group data collection procedure was used in order to reduce the burden on the school, limit disruptions to the school schedule, and accommodate every student. Students who did not have consent and teachers exited the classroom prior to data collection commencing. Each child was given an individual packet to fill out study measures, while research assistants read survey questions aloud in order to guarantee that child participation was not limited by reading comprehension. Approximately three research assistants were present in each classroom during data collection. One research assistant read the survey packet aloud, while the others walked around the classroom to answer participant questions, ensure participants were following along in the packet, and discourage talking and disruptive behavior.

Teachers who provided informed consent to participate in the study completed a series of measures for each student in their classroom (13–18 students per teacher) via an online survey. Teacher data collection occurred between late October and early December of the T1 school year, concurrent with child data collection and in order for teachers to have at least 2 months to be acquainted with the students and observe their interactions with peers to accurately assess for aggressive behavior. Teachers received compensation of \$50 for completing surveys on all eligible students in their classrooms.

Additionally, school and district administrators provided school record data on students' GPA and disciplinary actions for the semester corresponding to T1. Records were recoded for analyses (see below).

## T2

Students' disciplinary actions were re-assessed approximately 1 year after T1 during the subsequent fall semester when they were in fourth and fifth grade. The data collection at this second time point included only school record data on students' disciplinary actions during the T2 semester. The procedures used to collect and recode students' disciplinary records data at T2 were the same as those used at T1.

Note that the authors declare no conflict of interest, and the first and second authors take responsibility for the integrity of the data and the accuracy of the data analysis.

## Measures

### *Proactive and Reactive Aggression*

Student proactive and reactive aggression were measured through teacher reports. Teachers completed a six-item Proactive/Reactive Aggression Scale (PRA; Dodge and Coie 1987) for each of their students. Three items on the scale assessed proactive aggression (e.g., gets other kids to gang up on somebody that he/she does not like), and three items on the scale assessed reactive aggression (e.g., feels that other children are to blame in a fight and feels that they started the trouble). Each item is rated on a Likert scale from 1 (*never*) to 5 (*almost always*). The validity and reliability of PRA is supported in previous research as a teacher-reported measure (Dodge and Coie 1987; Dodge et al. 1997) and in a variety of populations (Coie et al. 1991; Poulin and Boivin 2000; Smithmyer et al. 2000). Consistent with previous use of these measures (Evans et al. 2016; Waschbusch and Willoughby 1998; Connor et al. 2003), in the current study, internal consistency was good for both proactive ( $\alpha = .88$ ) and reactive ( $\alpha = .95$ ) aggression.

### *Peer Delinquency*

Children self-reported on peer delinquency using the 14-item Peer Affiliations Questionnaire (Fergusson et al. 1999). The child was instructed to give their best estimate on whether their friends had engaged in a particular behavior in the past year by answering a series of yes or no questions (e.g., skipped school without parents' permission?). For each participant, the items were summed (yes = 1 and no = 0) such that higher levels of delinquency were represented by a greater delinquency score. Thus, the range of possible scores was 0 to 14. This measure has demonstrated acceptable and excellent reliability in past studies (e.g., Fite and Colder 2007; Cooley et al. 2015), and the scale demonstrated acceptable internal consistency in the present sample ( $\alpha = .76$ ).

### *Peer Victimization*

Children self-reported on their peer victimization experiences by completing a modified version of the Victimization of Self (VS) scale from the Peer Experiences Questionnaire (PEQ; Vernberg et al. 1999). Children reported on the frequency of victimization since the start of school on a 5-point Likert scale ranging from 1 (*never*) to 5 (*a few times a week*). Four items on the VS scale assessed physical victimization (e.g., a kid hit, kicked, or pushed me in a mean way) and five items assessed relational victimization (e.g., a kid told lies about me so other kids wouldn't like me). Mean scores were calculated, such that higher scores indicate greater frequency and severity of victimization. Previous studies have used the current version of the VS to assess peer victimization of the current age group (e.g., Fite et al. 2013). Past research has provided evidence of the external validity of the original PEQ through significant correlations between self-reported and parent-reported victimization (Vernberg et al. 1999). The measure demonstrated high internal consistency in the current sample ( $\alpha = .93$ ).

### *GPA*

Students' semester GPA was calculated from academic records for the fall semester at T1. An overall semester GPA score was computed from students' semester grades in five core subjects: reading, language arts, math, social science, and science. Originally reported on percentage and letter grade scales, grades were converted to a standard 4-point scale for ease of interpretation. Specifically, each child's semester grades in these five classes were converted to the corresponding letter grade value (A = 4.00, B = 3.00, C = 2.00, D = 1.00, F = 0.00), with "plus/minus" grades recoded as the grade value  $\pm 0.30$  (e.g., B+ = 3.30, B- = 2.70) for a possible range of 0.00 to 4.30. The average of the five subject grades was calculated to create the overall GPA score used in analyses. GPA offers an ecologically valid indicator of students' academic performance with regard to the school's curriculum and policies (Westrick et al. 2015).

### *School Disciplinary Actions*

School disciplinary records were obtained from school administrators. These data were collected throughout the course of the fall 2013 (T1) and fall 2014 (T2) semesters, in accordance with the school's policies and procedures. Specifically, on any occasion in which a student committed an action that was in violation of the rules and received



disciplinary attention, school staff recorded data regarding the nature of the incident and the name of the student responsible. Common examples of behaviors warranting discipline include the following: defiance/disrespect/non-compliance, disruption, physical contact, property misuse, dress code violation, inappropriate language, teasing, bullying, and physical aggression. For the purposes of the present analyses, a total count of disciplinary actions that occurred in that semester for a given student was computed for T1 and T2.<sup>1</sup>

## Data Analytic Approach

Descriptive statistics and correlation analyses were first conducted to evaluate study variables and examine bivariate associations among study variables. Path models within a structural equation modeling framework were then estimated to evaluate which risk factors were uniquely associated with increases in disciplinary actions, allowing us to control for proactive aggression when examining the effects of reactive aggression and vice versa as well as the influence of peers and GPA. Specifically, T2 disciplinary actions were simultaneously regressed on T1 disciplinary actions, gender, grade level, peer delinquency, peer victimization, GPA, reactive aggression, and proactive aggression. Grade level and gender were also controlled for in analyses, as age and gender differences in aggression and other forms of antisocial behavior have been found in previous research (e.g., Card et al. 2008). All independent variables were mean-centered in order to reduce multicollinearity concerns (Aiken and West 1991).

Preliminary analyses were also conducted prior to model estimation in order to address the possible effects of outliers. A visual-descriptive inspection of the distribution of disciplinary actions at T1 and T2 revealed that a very small number of participants were consistently falling toward the high extremes of the distribution, receiving as many as 44 disciplinary actions within a single semester. Generally, these were the same participants at T1 and T2, with two participants in particular sharing the same maximum values. Although a positive skew is to be expected in count-distributed data, we estimated the study models with and without these two outliers to ensure that the results were robust, generalizable, and not disproportionately influenced by a small number of extreme values. After removing these two outliers, none of the regression coefficients changed with respect to significance status (at  $\alpha = .05$ ); however, a previously nonsignificant effect of proactive aggression ( $p > .1$ ) became marginally significant when the two outliers were removed ( $p < .06$ ). Given the possible usefulness of this marginal trend, and the otherwise robustness of the results, we elected to continue to leave out the two extreme outliers and use the final sample of  $N = 173$  for all results and descriptive statistics reported herein.

All models were estimated in Mplus version 7 (Muthén and Muthén 2012) using maximum likelihood robust estimation, which is robust to non-normally distributed data (Muthén and Muthén 2012). Models were specified as Poisson models given that T2 disciplinary actions (the outcome variable in all models) was a frequency variable that naturally followed a count distribution. Further, the nesting of youth within classrooms (i.e., 11 different teachers/classrooms at T1) was also modeled using the cluster option in Mplus to account for variance associated with shared informant or classroom environment (Muthén and Muthén 2012).

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<sup>1</sup> Note that the data collection window during the T2 semester was slightly truncated (Aug–Nov) compared to the T1 year (Aug–Dec) because there was a problem with the data collection platform, which may partially account for the lower overall frequency of discipline actions during the latter semester. The data between the two semesters are otherwise comparable.



## Results

### Descriptive Statistics

Correlations among all study variables in addition to means, standard deviations, minimum and maximum scores, skewness, and kurtosis of study variables are presented in Table 1. Consistent with previous research (e.g., Fite et al. 2016), proactive and reactive aggression were strongly positively associated, sharing approximately 62% of their variance. Disciplinary actions were correlated over time, indicating that youth who had a high number of disciplinary actions at T1 also had a high number of disciplinary actions at T2. As anticipated, high levels of peer victimization, peer delinquency, and proactive and reactive aggression were associated with high levels of disciplinary actions at both T1 and T2. Interestingly, the strongest associations were found between reactive aggression and disciplinary actions at both time points. Contrary to expectations, however, GPA was not associated with disciplinary actions at either T1 or T2.

### Path Models

As seen in Table 2, when disciplinary actions at T2 were simultaneously regressed on T1 disciplinary actions, gender, grade, peer delinquency, peer victimization, GPA, reactive aggression, and proactive aggression, four significant effects emerged ( $ps < .005$ ). Disciplinary actions at T1 and T2 were positively associated. Girls were less likely to exhibit increases in disciplinary actions. High levels of peer victimization and reactive aggression

**Table 1** Correlations and descriptive statistics

	1	2	3	4	5	6	7	8	9
1. T1 peer victimization	–								
2. T1 peer delinquency	.62**	–							
3. T1 proactive aggression	.37**	.40**	–						
4. T1 reactive aggression	.39**	.38**	.79**	–					
5. T1 GPA	–.20**	–.23**	–.12	–.17*	–				
6. T1 disciplinary actions	.19*	.15*	.47**	.51**	–.11	–			
7. T2 disciplinary actions	.35**	.26**	.46**	.56**	–.10	.59**	–		
8. Gender (female)	–.08	–.21**	–.12	–.20**	.10	–.26**	–.28**	–	
9. T1 grade level	–.16*	–.08	–.08	–.07	–.02	–.18*	–.07	–.03	–
Mean	1.48	.68	1.20	1.50	3.76	1.77	0.46	–	–
SD	0.78	1.43	0.58	1.00	0.36	4.53	1.11	–	–
Min	1.00	0.00	1.00	1.00	2.60	0.00	0.00	0.00	3.00
Max	5.00	8.00	4.67	5.00	4.30	32.00	7.00	1.00	4.00
Skewness	2.47	2.80	3.42	2.11	–0.68	3.95	3.33	–	–
Kurtosis	6.27	8.64	12.60	3.50	–0.08	17.73	12.84	–	–

N = 173 for all estimates \*  $p < .05$ ; \*\*  $p < .01$

**Table 2** Path model predicting T2 disciplinary actions

	Est.	(SE)
Gender (female)	-0.96*	(0.31)
T1 grade level	0.33	(0.36)
T1 peer delinquency	-0.01	(0.09)
T1 peer victimization	0.32*	(0.08)
T1 proactive aggression	-0.34	(0.17)
T1 reactive aggression	0.57*	(0.20)
T1 GPA	-0.01	(0.19)
T1 disciplinary actions	0.07*	(0.02)

\*  $p < .05$ 

were associated with increases in disciplinary actions. Finally, although only a trend ( $p < .06$ ), proactive aggression was negatively associated with T2 disciplinary actions when considering the stability of disciplinary actions and the variance associated with other variables in the model.

## Discussion

The current study sought to extend the aggression literature by being the first to prospectively evaluate the links between reactive and proactive aggression and disciplinary actions in an elementary school setting while also considering the influence of peer relationships (i.e., peer delinquency and peer rejection) and GPA. Although all risk factors, except GPA, were associated with disciplinary actions at the bivariate level, path models indicated that peer victimization and reactive aggression were the strongest and most robust predictors of increases in disciplinary actions. There was also a trend for proactive aggression to be negatively associated with disciplinary actions when reactive aggression was also considered.

In contrast to associations in an after-school care program that found that proactive aggression was more strongly related to disciplinary actions than reactive aggression (Fite et al. 2011), current findings indicate that reactive aggression was more strongly linked to increases in disciplinary actions at school than proactive aggression. Moreover, proactive aggression was marginally statistically negatively associated with disciplinary actions when taking into account the stability of disciplinary actions, reactive aggression, and the other factors. One potential explanation for the contrast in findings may be due to the reasons youth experienced disciplinary actions. That is, when examining the most common reasons youth experienced disciplinary actions, school violations seem to be somewhat less severe and more in impulsive in nature (e.g., defiance/disrespect/non-compliance, disruption, physical contact, property misuse, other, dress code violation, inappropriate language, teasing/bullying, and physical aggression) compared to the primary reasons for disciplinary actions reported for the after-school care program (e.g., fighting, sexually inappropriate behavior, inappropriate language, repeated refusal to follow directions, destruction of property, and stealing; Fite et al. 2011). It may be that reactive aggression is associated with more minor misbehaviors (which may be more common and seen as more of a problem at school than in after-school care setting), while proactive aggression is associated with more severe problem behaviors (which may be more common in less structured after-school care programs than at school; Fite et al. 2016; Vitaro and Brendgen

2012). This would be consistent with previous research that found that reactive, not proactive, aggression was associated with classroom rule violations (Waschbusch and Willoughby 1998) and proactive aggression was associated with more serious long-term antisocial outcomes than reactive aggression (Fite et al. 2016; Vitaro and Brendgen 2012). Reactive aggression is associated with poor behavioral regulation (Fite et al. 2016; Vitaro and Brendgen 2012), which may result in increases in classroom misbehavior that results in disciplinary actions over time.

An alternative explanation may be that the planful and goal-oriented aspect of proactively aggressive acts can be more controlled and covert in nature (Dodge and Coie 1987; Dodge 1991; Fite et al. 2016; Vitaro and Brendgen 2012), resulting in less actual disciplinary actions over time. That is, proactively aggressive youth may be engaging in problem behavior, but may be not getting caught and experiencing disciplinary actions within the school setting because they are better able to engage in their behavior in a more controlled way over time. This is in contrast to reactively aggressive behavior that is impulsive in nature (Dodge and Coie 1987; Dodge 1991; Fite et al. 2016). However, additional research is needed to further clarify these associations before conclusions should be drawn.

With regard to peer influences, consistent with previous research (Baly et al. 2014; Fite et al. 2011; Monahan et al. 2014), bivariate associations indicated that both peer victimization and peer delinquency were associated with increases in disciplinary action. However, peer victimization was more robustly associated with disciplinary actions than peer delinquency. It appears that after taking into account one's own level of aggression, delinquent behavior of peers is not as strong of a predictor of disciplinary actions. Note that levels of peer delinquency were low in the current sample and results may be more robust in more delinquent samples. Findings may also be more robust as youth age and rates of delinquency increase (Moffitt 1993), and there is evidence to suggest that the influence of peer delinquency on child behavior increases as youth age into adolescence (e.g., Ferguson and Meehan 2011). Accordingly, future research needs to examine these associations in older samples before conclusions regarding the effects of peer delinquency should be drawn.

Experiencing peer victimization is associated with increases in aggressive behavior (e.g. Cooley and Fite 2016; Lamarche et al. 2007); this may be a result of aggression being modelled for them as a victim as well as the youth deciding to engage in retaliatory aggressive behavior. Engaging in this aggressive behavior may then ultimately result in disciplinary actions for victimized youth. There is also evidence that youth who are isolated and feel rejected by peers will engage in antisocial behavior, which may be because they fail to bond to conventional social institutions (e.g., Bierman 2004; Dodge et al. 2003; Prinstein and Aikins 2004; Prinstein et al. 2000). That is, socially isolated youth may become less invested in the rules and norms of conventional social institutions (such as school), putting them at risk for subsequent problem behaviors that result in formal disciplinary action. Thus, it is important for schools and communities to reduce peer victimization for the prevention of a host of negative outcomes, including risk for disciplinary actions.

Finally, current findings did not find an association between GPA and disciplinary actions. This association may not be as evident in elementary school as it is in later academic years (e.g., Morrison et al. 2001; Murdock et al. 2000), when the positive outcomes associated with good academic performance and positive school behavior may be more proximal (i.e., closer to graduation) and more salient (i.e., actively making future plans) for youth.

## Limitations

It is important to acknowledge some limitations of the present study. First, given the homogeneity of the study sample, these findings might not generalize to more ethnically and socioeconomically diverse populations. Particularly given that the school to prison pipeline disproportionately affects youth of color, further study with more diverse samples (including greater numbers of youth of color) is warranted. Second, although data were gathered from three different sources, each variable was assessed from only one perspective. This is a strength insofar as research supports the validity of the selected informants for the study variables (e.g., teacher report of aggression, self-report of victimization and peer delinquency) and school records data offer an ecologically valid perspective on children's academic and behavioral functioning at school. However, future research would benefit from rigorous multi-informant or multi-method approaches—that is, incorporating data from multiple sources to assess each variable from different perspectives. For example, teacher reports of aggression could be improved by utilizing several teachers to evaluate the same child, and the measurement of peer victimization could be improved by incorporating teacher ratings and peer nominations along with child self-reports. GPA is only one indicator of academic functioning; future research is needed to confirm associations with other academic metrics (e.g., test scores and teacher ratings). However, aligning with the logic utilized by Duckworth and Seligman (2005), GPA may be a more accurate reflection of a student's actual academic ability since GPA captures a student's performance on multiple assignments over a long period of time (Geiser and Santelices 2007). Additionally, despite using official records to assess disciplinary actions, disciplinary referrals can be subjective, with teachers and staff differing on when to make the referral. Nonetheless, actual disciplinary referrals are what is used to determine student placements, etc., providing some useful information on what behaviors to target.

## Conclusions and Future Directions

Despite the outlined limitations, the current study has many implications for treatment and provides some directions for future research. First, reactive, in contrast to proactive, aggression appears to be particularly important among elementary school-age youth. Reactive aggression is the more common function of aggression (Fite et al. 2016; Vitaro and Brendgen 2012) highlighting the fact that many youth may display this function of aggression. Further, reactive aggression has been linked to poor emotional and behavioral regulation (Fite et al. 2016; Marsee and Frick 2007). As such, large-scale universal interventions as well as more targeted interventions within schools need to start early and may need to focus on more effective emotion and behavior regulation skills, such as problem solving, relaxation training, and other emotional coping strategies, which may reduce reactively aggressive behavior and ultimately prevent disciplinary actions. Findings also indicate the need to educate those who make disciplinary decisions (i.e., teachers and administrators) on these functions of aggression and the characteristics associated with each aggression subtype (e.g., reactive linked to poor regulation and proactive with callous-unemotional traits) to help address concerns in a helpful manner and prevent subsequent difficulties. Findings indicate that it may be particularly important to discuss how emotion regulation may be playing into these behavioral concerns that are resulting in disciplinary action so that further prevention efforts (e.g., setting up a consistent

environment with posted rules and set plans for how to address these concerns) will be effectively implemented in elementary schools.

Peer victimization also appears to be an important target of intervention for reducing disciplinary actions. Unfortunately, however, current school-wide interventions targeting bullying and victimization are limited in their effectiveness and targeted interventions for peer victimization are virtually non-existent (Tfofi and Farrington 2011). Thus, additional work developing and evaluating peer victimization is warranted.

Additionally, analyses looking more closely into the reasons for disciplinary actions and how proactive and reactive aggression are differentially related to these reasons may help to further clarify how these functions of aggression are differentially linked to disciplinary actions in the school setting and further inform prevention and intervention efforts. Finally, future research is needed to evaluate other factors that may also be important for understanding these associations, such as symptoms of inattention and hyperactivity that are linked to both reactive aggression and behavioral concerns at school (e.g., Waschbusch et al. 2002).

### Compliance with Ethical Standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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