Relations between Youths' Community Violence Exposure and Their Physical Aggression: The Protective Role of Adults

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Abstract

The purpose of this study was to examine whether adults moderated the relations between youths' community violence exposure and subsequent physical aggression. Participants were 2,575 middle school students (M_{age} = 12.3, SD = 1.00; 52% female) in the southeastern U.S. who completed surveys collected in the fall, winter, spring, and summer. The sample was predominantly African American (72%). High adult support was associated with weaker relations between exposure to violence in the fall and aggression in the winter among male adolescents. High adult support was related to weaker relations between victimization in the fall and aggression in the winter among female adolescents. Strategies promoting supportive adult relationships may benefit male adolescents by buffering the adverse impact of community violence exposure.

Keywords

Violence exposure; community violence; adolescence; physical aggression; adult influence

Adolescents in under-resourced communities experience high violence exposure (Richards et al., 2015). Violence exposure includes witnessing violence and direct victimization experiences (Fowler et al., 2009). An estimated 27% of youth aged 10 to 13 and 33% of those aged 14 to 17 witnessed community violence, whereas 41% of youth aged 10 to 13 and 32% of those aged 14 to 17 were physically victimized in the past year (Finkelhor et al., 2015). Witnessing violence and victimization are related to problem behavior (e.g., Fowler et al., 2009), including physical aggression (e.g., Farrell et al., 2014). Consistent with resilience theories (e.g., Luthar et al., 2000), adults may buffer the risks faced by youth who are exposed to violence. The purpose of this study was to examine different forms of adult

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influence that may mitigate the associations between victimization and witnessing violence and later physical aggression.

A large body of research has found that adolescents who are exposed to violence are significantly more likely to perpetrate subsequent aggression (e.g., Farrell et al., 2014). This relation is explained by phenomenological variant of ecological systems theory (PVEST; Spencer et al., 2003), which highlights the importance of context in understanding human development. PVEST posits that individuals predisposed to risk contributors (e.g., poverty) experience net stress (e.g., community violence exposure) and use reactive methods (e.g., aggression) to cope with that stress. Physically aggressive behavior may serve as a reactive coping method for adolescents exposed to violence within their communities. Physical aggression is fairly prevalent, endorsed by about 13% of youth in a national sample (Wang et al., 2009) and by about 68% of youth in areas characterized by high poverty and disinvestment (Farrell et al. 2018). Physical aggression, in turn, is associated with academic and behavioral difficulties (Polanin et al., 2021), including delinquent behaviors that can lead to arrest and incarceration. The high rates and negative sequelae of violence exposure and physical aggression underscore the importance of identifying factors that disrupt the cycle and promote resilience. For instance, PVEST suggests that available support, such as supportive adults, may offset youths' net stress engagement to improve their development (Spencer et al., 2003). Early adolescence, in which youth transition to middle school, is an important development stage in which to examine resilience, given that it is a particularly vulnerable time, characterized by changes in emotional experiences and increases in relational and academic demands (Buchanan & Bowen, 2008).

Theoretical Support for Adults as Moderators

Not all youth who are exposed to violence engage in aggression. A resilience framework, in conjunction with PVEST, can improve our understanding of why violence exposure is related to different outcomes across youth. Resilience theories posit that resilience (healthy functioning despite stressors) occurs when protective individual or social-ecological factors interrupt the development of adverse outcomes following risk exposure (e.g., Luthar et al., 2000). Different individual or social-ecological factors might be protective across different contexts (Ungar, 2015), increasing the need to identify factors that are beneficial during early adolescence for youth growing up in under-resourced communities. Luthar and colleagues (2000) distinguished between different interactive processes that promote resilience. In a protective-stabilizing relation, the presence of a positive attribute (e.g., teacher support) weakens the relation between increased risk (e.g., violence exposure) and poorer subsequent adjustment (e.g., aggression). This differs from a protective-enhancing relation, in which the presence of a positive attribute results in improved adjustment despite increased risk. In contrast, in a protective-reactive relation, the presence of an attribute generally promotes improved adjustment, but that promotive quality is less evident at higher levels of risk. In a vulnerable-stable relation, the increased risk (e.g., violence exposure) does not exacerbate the relation between the negative attribute (e.g., parents' support for fighting) and one's adjustment (e.g., aggression). This differs from a vulnerable-reactive relation, in which the relation between a negative attribute and one's adjustment worsens at

high levels of risk. It is important to examine the interactive processes that may exist for violence exposure and adults in predicting adolescents' physical aggression.

Parental Messages and Physical Aggression

Parents can impact adolescents' aggression by explicitly verbalizing their support for or opposition to such behavior (e.g., Farrell, Henry, et al., 2010). Qualitative research (e.g., Farrell, Mays, et al., 2010) has identified parental messages about aggression that influence adolescents' tendency to engage in effective nonviolent (i.e., support for nonviolence) or aggressive (e.g., support for fighting) behavior. Parents' support for aggression is a risk factor for the development of aggression (e.g., Farrell, Henry, et al., 2010), whereas parents' support for nonviolence is related to reduced risk for aggression (e.g., Garthe et al., 2015). Although these direct relations have been identified, it is unclear whether parental messages can also serve an interactive function by either exacerbating or mitigating the relation between violence exposure and later physical aggression. This is important given findings that parental messages change over the course of middle school (Farrell et al., 2011), suggesting that parental messages may be modifiable factors that could buffer the risk of violence exposure during early adolescence.

Support from Teachers and Other Adults

Non-parent adults may also contribute to youths' behavior by providing social support, guidance, and models of behavior (Scales et al., 2006). Social support includes any process that promotes well-being (e.g., Lakey & Cohen, 2000), including emotional (e.g., listening), informative (e.g., offering guidance), and instrumental (e.g., offering services; Wills & Shinar, 2000) support. Of note, adults in different contexts may exert different influences on youth—for example, one study found that teacher support and more general adult support differentially predicted youths' substance use (Oosterhoff et al., 2017). Teachers represent important adult figures in youths' lives that may influence their use of aggression. One cross-sectional study found that adult support at school, including support from teachers or other school personnel, was inversely associated with aggression towards peers among a diverse sample ranging from elementary to high school (Gage et al., 2014). Benhorin and McMahon (2008) found that social support from teachers was associated with lower rates of aggression, after controlling for violence exposure, in a mostly African American sample of middle school students.

In addition to teacher support, social support from other adults has also been linked to lower rates of aggression. Adolescents in a qualitative study identified support from adult community members as one factor that could reduce their aggressive responses to peer conflict situations (Farrell, Mays, et al., 2010). One study found that youth who reported having an adult mentor were less likely to report physical aggression six years later (Ahrens & colleagues, 2008).

A meta-analysis of mentoring interventions found that mentoring was related to lower levels of aggression, with a small effect size ($d = .29$; Tolan et al., 2014).

Adults as Moderators of the Relations between Violence Exposure and Aggression

Few studies have examined the extent to which adult influences moderate the relations between violence exposure and aggression. Although youth may receive support from different individuals, including parents and teachers, these supports may serve distinct functions and differentially influence outcomes (Mastoras et al., 2018). The existing work on adult influences is mixed, perhaps due to differences in the measurement of violence exposure, adult influences, and sources of support. For example, one study found support for a protective-reactive interaction, such that low levels of parents' support for fighting mitigated the relation between witnessing violence in the fall of sixth grade and youths' perpetration of physical aggression in the spring of sixth grade (Kramer-Kuhn & Farrell, 2016). This effect was constant across female and male adolescents. In contrast, parents' support for nonviolence did not moderate the relation between witnessing violence and aggression. In a nationally representative sample of seventh through twelfth grade students, Kort-Butler (2010) found that social support (from multiple sources, including teachers) moderated the relation between witnessing violence and aggression, but not victimization. Another study, which specifically examined teacher support, found that it did not protect against the relation between violence exposure and aggression in a mostly African American sample of middle school students (Benhorin and McMahon, 2008). Despite witnessing violence and victimization representing unique forms of exposure (Fowler et al., 2009), the prior study combined these forms, limiting an understanding of the potential interactive role of teacher support with each construct. There remains a need for research examining the interactive role of multiple forms of adult influences in the relations between both witnessing violence and victimization and subsequent physical aggression.

Gender Differences across Adult Influences

It is important to examine whether the interactive relations between violence exposure and adults differ by adolescents' gender. Some prior studies examining whether adults moderate the relation between violence exposure and youths' physical aggression simply controlled for gender in the model rather than examined whether the interactive relation varied by gender (e.g., Benhorin & McMahon, 2008; Kort-Butler, 2010). One study that used multiple group models by gender found that the protective role of low levels of parents' support for fighting in mitigating the relation between witnessing violence and youths' physical aggression did not differ for male and female adolescents (Kramer-Kuhn & Farrell, 2016). It is plausible that the interactive relations between violence exposure and adults on physical aggression are the same for male and female adolescents.

Purpose of the Present Study

The goal of this study was to examine the protective role of distinct adult factors on relations between violence exposure and changes in physical aggression. Adult factors included teacher support, other adult support, parents' support for retaliation, and parents' support for nonviolence. Participants were a mostly African American or Black sample of middle school students from under-resourced neighborhoods. This study examined changes across

multiple waves within the school year rather than across school years to address dynamic changes in violence exposure, adult influences, and aggression that occur within the school year that are not captured by changes across larger spans of time. This study extends prior findings that victimization and witnessing violence each predicted changes in subsequent physical aggression (Author citation) by investigating the potential protective role of adults. Consistent with theories (e.g., Luthar et al., 2000; Spencer et al., 2003), it was hypothesized that: (1) parents' support for nonviolence, teacher support, and other adult support would mitigate the link between violence exposure and physical aggression (protective-stabilizing relation); and (2) parents' support for retaliation would exacerbate the link between violence exposure and aggression (vulnerable-reactive relation). Although witnessing violence and victimization are distinct constructs, relations between witnessing violence and victimization and externalizing problems are similar (Fowler et al., 2009). Therefore, there were no differential hypotheses for these constructs.

It was hypothesized that there would be no gender differences. This was based on results that the protective role of low parents' support for fighting in mitigating the relation between witnessing violence and physical aggression did not differ for male and female adolescents (Kramer-Kuhn & Farrell, 2016) and on research showing the important protective role of adults across gender for a range of outcomes (e.g., Fredick et al., 2018; Wormington et al., 2012).

Method

Participants and Setting

This study was conducted using data collected from 10 cohorts of youth who attended three public middle schools between 2010 and 2018 as part of a larger project (Author citation) assessing the efficacy of a bullying prevention program. Schools were based in a medium-sized city in the southeastern United States that served a mostly African American or Black student population and were selected using surveillance data indicating high levels of violence (Author citation). Most students (98%) were eligible for the federal free or reduced lunch program. The final sample of 2,575 students was about evenly divided by grade (i.e., 865 sixth-, 860 seventh-, and 850 eighth-grade students). Most students identified as Black or African American as their only ethnic identity (72%) or as one of several ethnic identities (6%); 6% identified as White; 1% identified as Alaska Native or American Indian; less than 1% identified as Pacific Islander, Native Hawaiian, or Asian; and 13% (many of which identified as Hispanic or Latinx) did not identify a racial identity. School records identified 52% as female and 48% as male adolescents. Participants ranged in ages from 10 to 16, with an average age of 12.30 years (SD = 1.00).

Procedures

The project used a school-level, multiple baseline experimental design, which randomly determined the order and timing of intervention implementation at each school. Additional information is reported in the evaluation study (Author citation). Data were collected every 3 months (i.e., fall, winter, spring, and summer), resulting in four waves of data per school year. A missing-by-design approach was used, resulting in students being

randomly assigned to complete two of the four potential waves, which provides data missing completely at random. This approach reduces costs and increases quality, while providing unbiased parameter estimates (Graham et al., 2001). Most of the recruited students (82.5%) participated at both of their assigned waves. Students had missing data at one of their assigned waves because they: (a) were unavailable (6.2%), (b) left the school (6.1%), (c) declined to participate (3.1%), and (d) withdrew or were no longer eligible to participate in the study (2.1%). Additionally, some observations (3.7%) were omitted from students who did not appear to be completing the survey carefully based on field notes of their behavior by research staff or their speed of completion.

Research staff informed students about the study during school and provided them with consent forms to give to their parents or legal guardians. Written assent and consent were received from almost 80% of all eligible students. Research staff administered measures, primarily in groups of 20 to 30 students, at school during the school year and in students' homes or at neighborhood locations in the summer. Measures were administered in English using computer-assisted personal interviews. Students received $10 gift certificates for completed surveys and $5 certificates for returning forms from parents or legal guardians even if students chose not to participate. Use of anonymized data for secondary analyses was approved by the university's Institutional Review Board, as were all procedures for the larger study.

Measures

Community Violence.—Violence exposure was measured using an abbreviated version of the Survey of Exposure to Community Violence (Richters & Salzman, 1990). The witnessing violence subscale assesses the frequency at which youth respondents saw or heard violence happening to others, whereas the victimization subscale assesses the frequency at which youth respondents were the direct victims of violence. Youth rated how often they witnessed violence (e.g., "Seen someone else getting beaten or mugged?") or were victimized by violence (e.g., "Been slapped, punched, or hit by someone?") in the past 3 months on a 6-point scale, ranging from 1 (*never*) to 6 (*20 or more times*). Construct validity has been supported by correlations with posttraumatic stress symptoms and measures of externalizing and internalizing problems (Fowler et al., 2009). Items were averaged to produce total scores for witnessing violence (13 items, $\alpha = .86$) and victimization (7 items, $\alpha = .69$).

Perceived Parental Messages Supporting Nonviolence and Fighting.—Youths' opinions of the messages their parents or guardians gave them about nonviolence versus fighting were measured using the Parental Messages About Fighting and Nonviolence scale (Farrell, Mays, et al., 2010). Parent-related measures were prefaced by stating, "by "parents" we mean your mom, dad, or other adults who are most responsible for taking care of you." Youth rated the chances of their parents making statements using a 4-point scale, ranging from 1 (*very unlikely*) to 4 (*very likely*). Two of the three subscales identified by a confirmatory factor analysis were used in the present study: (a) Messages Supporting Retaliation (e.g., "It's okay to fight if someone else starts it," $\alpha = .76$, 3 items) and (b)

Messages Supporting Nonviolence (e.g., "If someone wants you to fight, just tell them you don't want to," α = .87, 3 items).

Teacher Support.—Teacher support was measured using the six-item Teacher Support subscale of the Inventory of School Climate-Student (ISC-S; Brand et al., 2003). The ISC-S measures ten domains of school climate. Concurrent validity of the ISC-S is supported by correlations with psychosocial and academic adjustment (Brand et al., 2003). Participants rated how often relevant school-related experiences happened (e.g., "Teachers take a personal interest in students;" α = .87) on a 5-point scale, ranging from 1 (*never*) to 5 (*always*).

Adult Support.—Adult support was assessed using the 9-item Presence of Caring subscale from the Individual Protective Factors Index (Phillips & Springer, 1992). Youths were given a list of items assessing their sense of adult support (e.g., "There is an adult I could talk to about important decisions in my life"). Participants rated how accurate each item was using a 4-point scale such that items representing the absence of support were coded 1 (*YES!*), 2 (*Yes*), 3 (*No*), and 4 (*NO!*). Items representing positive support were reverse coded. Items were summed to create a total score (α = .69). Lower scores indicated a weak presence of adult support.

Physical Aggression.—The five-item Physical Aggression subscale of the Problem Behavior Frequency Scale (Farrell, Thompson, Mehari, et al., 2020) measured youths' physical aggression. Its validity is supported by correlations with school office referrals for code violations (Farrell, Thompson, Mehari, et al., 2020). Students rated how often they engaged in physical aggression (e.g., "Shoved or pushed someone") in the past month using a 6-point scale, ranging from 1 (*never*) to 6 (*20 or more times*). The three highest anchor categories (6–9 times through 20 or more times) were combined to produce a 4-point scale based on item response theory analyses (Farrell, Thompson, Mehari, et al., 2020) and averaged to produce a total score (α = .77).

Analysis Plan

Because the multiple cohort design limited the number of students participating during all three grades, longitudinal analyses of four waves of data within a single school year were conducted for independent samples of sixth, seventh, and eighth grade students. To maintain independent observations, data were randomly selected from one of three possible grades for students who completed measures in multiple grades. Mplus Version 8.2 (Muthén & Muthén, 2017) was used to conduct all analyses. Non-normal data were addressed using MLR. Full information maximum likelihood was used to handle missing data, as it uses all available data to calculate parameter estimates. The sandwich estimator (Muthén & Satorra, 1995) was used to account for non-independence that can occur from nesting participants within groups defined by groupings of school, cohort, and grade. Separate path models were run to clarify the degree to which each adult construct moderated relations between witnessing violence and victimization and later changes in the frequency of physical aggression. The exposure and adult constructs were grand-mean centered, and product terms were produced to represent their interaction.

Random intercept models were used to decompose scores on physical aggression at every wave into between-person and within-person components (Hamaker et al., 2015). Temporal deviations from the intercept across waves are represented by the within-person components. Random intercepts represent the time-invariant between-person component in these models. When using random intercept models, coefficients represent the relation between one variable (e.g., violence exposure) and changes above or below person-specific means for the other variable (i.e., physical aggression). Main effect analyses were conducted using one-sided models in which within-person deviations in aggression in the winter to summer waves were regressed on violence exposure and the adult variables. For the moderation analyses, product terms representing the interactions between mean-centered scores on violence exposure and each of the adult variables at the prior wave were added to the model (see Figure 1).

All models included lag 1 autoregressive effects for within-person aggression residuals. Covariates included sex, intervention, and grade, with female sex, control phase, and sixth grade as the reference groups. All predictor variables were regressed on the covariates but were otherwise handled as exogenous variables. They were therefore allowed to correlate with each other across waves, and with the aggression deviation and intercept scores at prior and current waves. The consistency of relations across waves was assessed by comparing the fit of models that allowed relations between the predictor variables and changes in aggression to vary across waves with constrained models that held these relations constant across waves. Significance for all tests was evaluated at $p < .05$. The Tucker-Lewis index (TLI), comparative fit index (CFI), and root mean square error of approximation (RMSEA) were used to assess fit of the models.

Multiple group models were used to examine the consistency of relations across sex and intervention phase. Wald tests were used as omnibus tests to determine if relations of exogeneous variables on residual changes in physical aggression differed by group (i.e., sex or intervention phase). Significant Wald tests were followed up by significance tests on individual coefficients. These comparisons were based on models in which parameter estimates within each group were allowed to differ across waves or were held constant across waves, with selection of the model according to the scaled chi-square difference test.

Results

Descriptive Statistics

Correlations, means, and standard deviations for the fall and winter waves are reported in Table 1. Correlations at all other waves are reported in Table S1 in Supporting Information rather than Table 1 for simplicity. Correlations for each variable across adjacent waves were significant, ranging from .36 to .67. Within the same wave, correlations between victimization and witnessing violence ranged from .64 to .66. Correlations among the adult variables varied and ranged from .06 to .36 in absolute value. Correlations between each exposure variable and physical aggression ranged from .36 to .50. Correlations between each adult variable and physical aggression ranged from .07 to .23 in absolute value.

Main Effects Models

Analyses Based on the Overall Sample—The first series of analyses investigated the extent to which witnessing violence and the adult factors predicted changes in physical aggression. The constrained model that held the cross-variable relations constant across waves fit the data well (RMSEA = .02, CFIs = 1.00, TLIs = .96; see Table S2 in Supporting Information for additional fit statistics). Across waves, witnessing violence was positively related to changes in physical aggression (β = .27, p < .001) and parents' support for nonviolence was negatively related to changes in physical aggression (β = −.11, p < .001) three months later. Parents' support for retaliation, adult support, and teacher support were unrelated to changes in physical aggression after controlling for witnessing violence and all adult variables (see Table 2).

Similar models were estimated for victimization. The constrained model that held the cross-variable relations constant across waves fit the data well (RMSEA = .01, CFIs = 1.00, TLIs = .98; see Table S2 in Supporting Information). Across waves, victimization (β = .23, p < .001) and parents' support for retaliation (β = .08, p = .01) were positively related to changes in physical aggression three months later. Across waves, teacher support (β = −.07, p = .026) and parents' support for nonviolence (β = −.12, p < .001) were negatively related to changes in physical aggression three months later. Adult support was unrelated to changes in aggression after controlling for victimization and all adult variables (see Table 2).

Sex and Intervention Phase Differences—Multiple group models were used to explore sex and intervention phase differences in the main effects of witnessing violence and victimization, and adult influences on changes in physical aggression. Constraining the exogeneous variable relations on physical aggression across waves within each group (i.e., intervention phase or sex) generally fit the data well (see Table S2 in Supporting Information). Sex did not moderate the main effects on changes in aggression for witnessing violence ($\chi^2[5]$ = 4.16, p = .527) or for victimization ($\chi^2[5]$ = 7.66, p = .176). Intervention phase did not moderate the main effects on changes in physical aggression for witnessing violence ($\chi^2[5]$ = 4.34, p = .502) or victimization ($\chi^2[5]$ = 6.93, p = .226).

Moderation Effects

Analyses Based on the Overall Sample—The next series of analyses explored the extent to which adults moderated the relation between violence exposure and changes in physical aggression. Constrained models that held the relations of the exposure variable, adult variables, and their interactions constant across waves fit the data well for witnessing violence (RMSEA = .01 to .02, CFIs = .99 to 1.00, TLIs = .91 to .98; see upper half of Table S3 in Supporting Information) and victimization (RMSEA = .01 to .02, CFIs = .99 to 1.00, TLIs = .91 to .98; see lower half of Table S3 in Supporting Information). Counter to our hypotheses, the adult factors did not moderate the relations between witnessing violence or victimization and changes in physical aggression (see Table S4 in Supporting Information).

Sex Differences—Multiple group models were used to explore the extent to which adult moderation of witnessing violence varied based on sex. Constraining exogenous variable relations on aggression across waves within each group fit the data well for parents' support

for retaliation, parents' support for nonviolence, and teacher support (see Table S5 in Supporting Information). That is, sex did not moderate the interactive relations between witnessing violence and parents' support for nonviolence ($\chi^2[1] = .49$, $p = .483$), parents' support for retaliation ($\chi^2[1] = .03$, $p = .856$), or teacher support ($\chi^2[1] = 1.23$, $p = .268$). For adult support, constraining relations across waves within each group significantly decreased the model fit ($\chi^2[12] = 30.61$, $p = .002$). Analyses of the final model, which estimated parameters separately by wave and sex, indicated that sex moderated the Adult Support x Witnessing interaction ($\chi^2[3] = 15.73$, $p = .001$) and changes in aggression. Within this model, there was an interaction among male adolescents across the fall and winter waves ($\beta = -.23$, $p < .001$), but no significant moderating effects for female adolescents. Consistent with a protective-stabilizing relation, there was a stronger relation between witnessing violence in the fall and subsequent changes in physical aggression in the winter among male adolescents who reported low levels of adult support (see Figure 2). No other significant interactions were present (see Table S6 in Supporting Information).

Multiple group analyses were also conducted to explore the degree to which the effects of victimization varied based on groups defined by sex. Constraining exogenous variable relations on aggression across waves within each group did not decrease the fit of models for parents' support for retaliation, parents' support for nonviolence, and teacher support (see Table S5 in Supporting Information). That is, sex did not moderate the interactive relations between victimization and parents' support for nonviolence ($\chi^2[1] = .50$, $p = .482$), parents' support for retaliation ($\chi^2[1] = .33$, $p = .564$), or teacher support ($\chi^2[1] = 2.22$, $p = .137$). For adult support, constraining relations across waves within each sex group decreased the model fit ($\chi^2[12] = 25.22$, $p = .014$). Sex moderated the relation between the Adult Support x Victimization interaction and changes in physical aggression ($\chi^2[3] = 21.63$, $p < .001$), such that the relations across the fall and winter waves were in the opposite direction for male ($\beta = -.22$, $p < .001$) and female ($\beta = .22$, $p = .016$) adolescents. For male adolescents, high levels of adult support mitigated the relation between victimization in the fall and changes in physical aggression in the winter (see Figure 3a). In contrast and consistent with a vulnerable-stable relation, there was a weaker relation between victimization in the fall and subsequent changes in physical aggression in the winter among female adolescents who reported low levels of adult support (see Figure 3b). The Adult Support x Victimization interaction in the winter and changes in physical aggression in the spring was significant for male adolescents ($\beta = .17$, $p = .021$), but not for female adolescents. Similar to the pattern for female adolescents, the relation between victimization in the winter and physical aggression in the spring was weaker among male adolescents who reported low levels of adult support (see Figure S1 for details).

Intervention Phase Differences—The next set of analyses explored the extent to which adult moderation of violence exposure varied by intervention phase. Constraining relations on aggression across waves within intervention phase generally fit the data well for each of the adult constructs (see Table S7 in Supporting Information). Intervention phase did not alter the interactive relations between violence exposure (witnessing violence or victimization) and any of the adult constructs.

Discussion

The purpose of this study was to examine the extent to which four adult constructs served a protective function by mitigating the relation between violence exposure and adolescents' physical aggression. There was little evidence that these adult constructs provide protection from the risk of violence exposure on aggression in early adolescence. Of the four adult factors, only adult support mitigated the relation between witnessing violence and victimization and subsequent physical aggression, and the results were limited to male adolescents. For female adolescents, high levels of adult support exacerbated the relation between victimization and subsequent physical aggression. These findings suggest that parents' support for fighting and nonviolence and support from teachers or other adults do not generally mitigate the risk for physical aggression related to violence exposure in early adolescence.

Moderating Role of Adults

Resilience theories maintain that the presence of protective social-ecological or individual factors fosters resilience by mitigating adverse outcomes following risk exposure (e.g., Luthar et al., 2000). Consistent with this notion, and with phenomenological variant of ecological systems theory (PVEST; Spencer et al., 2003), we found evidence for the protective role of adult support in mitigating the link between violence exposure and subsequent physical aggression, but only for male adolescents at the beginning of the school year. Although higher levels of violence exposure were positively associated with physical aggression, this relation was weaker for male adolescents with high levels of adult support (protective-stabilizing relation). These findings are in line with results indicating that parental support attenuated the relation between witnessing violence and physical aggression for male adolescents (Brookmeyer et al., 2005). Adult support may be more salient for male adolescents as they report higher rates of victimization compared with female adolescents (e.g., Author citation). The seasonal differences may be explained by changes occurring during the school year. During the summer, youths may spend more time with supportive adults, which may carry over into the start of the school year (Dishion & Tipsord, 2011). This may not be sustainable, however, due to the increased role of peers throughout the school year (Hall, 2011), which may diminish the role of adult support.

Teacher support did not serve a protective function in the effects of violence exposure. This differs from findings that social support, including support from teachers, protects against the risks related to victimization (Kort-Butler, 2010). This finding is consistent, however, with results indicating that teacher support did not moderate the relation between violence exposure and aggression (Benhorin & McMahon, 2008). The present study extends this literature by separately examining witnessing violence and victimization, which has been combined in other studies (e.g., Benhorin & McMahon, 2008), and specifically examining teacher support, which has been assessed within broader adult support measures (e.g., Gage et al., 2014). Findings suggest that for adolescents exposed to violence, perceiving high levels of teacher support is not sufficient to decrease aggression. Victimized adolescents may be less likely to seek teacher support due to potential negative social consequences, such as continued victimization (Smith & Shu, 2000). In addition, middle school teachers often

only teach students for one class period each day (Ryan et al., 2015), making it difficult for teachers and students to develop relationships needed for teachers to serve a protective function against violence exposure.

Parental messages did not serve a protective function in the association between violence exposure and physical aggression. Although parents can shape youths' behavior (Garthe et al., 2015), these findings suggest that parental messages do not impact the relation between violence exposure and physical aggression during early adolescence. The role of social-ecological and individual protective factors may differ across contexts (Ungar, 2015). One study found that peer variables, particularly low levels of friends' delinquent behavior and peer pressure for fighting and high levels of friends' support for nonviolence, attenuated the relation between victimization and subsequent physical aggression (Author citation). However, findings differed by gender and season of year, highlighting the importance of context, time, and gender when identifying factors that might promote resilience in youth exposed to violence.

Violence Exposure and Adult Factors Predicting Adolescents' Physical Aggression

Although exposure to violence and the adult factors did not generally interact to predict aggression, they did directly predict aggression. Consistent with existing literature (e.g., Fowler et al., 2009) and theories (e.g., PVEST; Spencer et al., 2003), witnessing violence and victimization were related to high levels of aggression. Consistent with previous findings (Kramer-Kuhn & Farrell, 2016), parents' support for nonviolence was related to low levels of aggression. This suggests that family norms around violence as communicated through direct messages are important predictors of youth violence, regardless of violence exposure. Due to low to moderate correlations between parents' support for nonviolence and adult support, it is possible that these variables overlapped in explaining variance in aggression. Both constructs capture support or guidance from adults. Adult support items assess the sense of adult support (e.g., "There is a trustworthy adult I could turn to for advice if I were having problems.") and parents' support for nonviolence items assess specific guidance from parents about how to respond to conflict (e.g., "If someone wants you to fight, just tell them you don't want to."). These findings suggest that receiving specific guidance from an adult may be more important than simply having an adult present who could provide such guidance. It is also possible that parental messages and adult support interact such that youth may be more likely to take their parents advice if they perceive them to be supportive. Parents' support for retaliation predicted high levels of physical aggression, whereas teacher support predicted low levels of aggression. However, this was only true when controlling for victimization, but not witnessing violence, highlighting the importance of considering the context in which youth are exposed to violence.

Limitations

Although this study attempted to address gaps in the literature, some limitations exist. Study variables were based on self-report, which increases the likelihood that findings may be influenced by shared method variance. However, using self-report may better capture behavior across contexts, as opposed to direct behavioral observations and ratings from other adults that are limited to specific settings. This is important when measuring violence

exposure and physical aggression, which are less likely to occur when adults are present. Furthermore, self-report measures of parental messages, teacher support, and other adult support represent youths' perceptions rather than actual support or messages provided. Most of the participants identified as African American or Black and attended schools in high-violence areas. More work with different samples is needed to explore the extent to which the results generalize to other ethnic groups and other contexts. Youth were not asked to specify which adult(s) they thought of when completing the adult support measure, so whether the adult was a parent is unknown. Lastly, different behaviors were measured for parents, teachers, and other adults, limiting the ability to focus on the similarities among these relationships rather than the differences.

Conclusion

This study's findings suggest that parents' support for nonviolence uniquely predicted changes in physical aggression after controlling for violence exposure. Prevention and intervention efforts that focus on promoting parental support for nonviolence may reduce adolescents' engagement in physical aggression. Taken together, these findings suggest that youth violence exposure, both experienced and witnessed, and messages from parents, have direct and independent roles in predicting youth violence. These findings underscore the need to identify additional protective factors that reduce the risks associated with violence exposure. Of note, exposure to violence may be both a consequence of segregation and concentrated poverty as well as a cause and maintainer of health disparities (e.g., Foster et al., 2007). Black youth report higher levels of violence perpetration and exposure compared with White youth (Wang et al., 2009). Simultaneous efforts are needed to both reduce youths' violence exposure and to mitigate the consequences of their violence exposure. Aggression is just one of many negative sequelae of violence exposure. Adult constructs may protect adolescents against other outcomes of violence exposure, such as delinquent behavior and post-traumatic stress symptoms.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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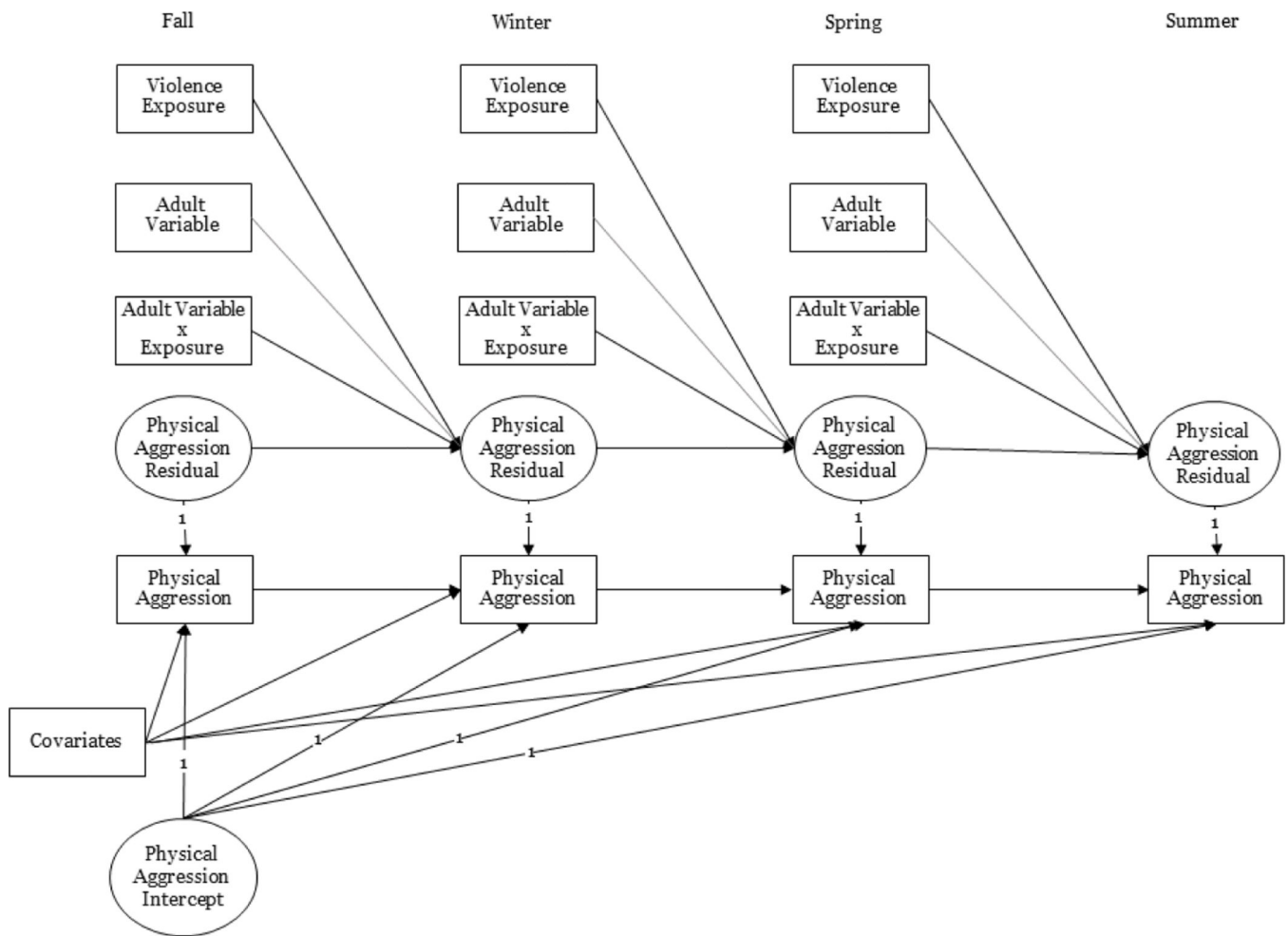
Figure 1.
One-Sided Path Model Representing Each Adult Variable as a Moderator of Relations Between Exposure to Violence and Subsequent Changes in Physical Aggression
Note. Exposure variables, adult variables, and interaction terms were regressed on the covariates, but were otherwise handled as exogenous variables. They were allowed to correlate with each other across waves, and with the physical aggression deviation and intercept scores at the prior and current waves (not shown to reduce the complexity of the figure).
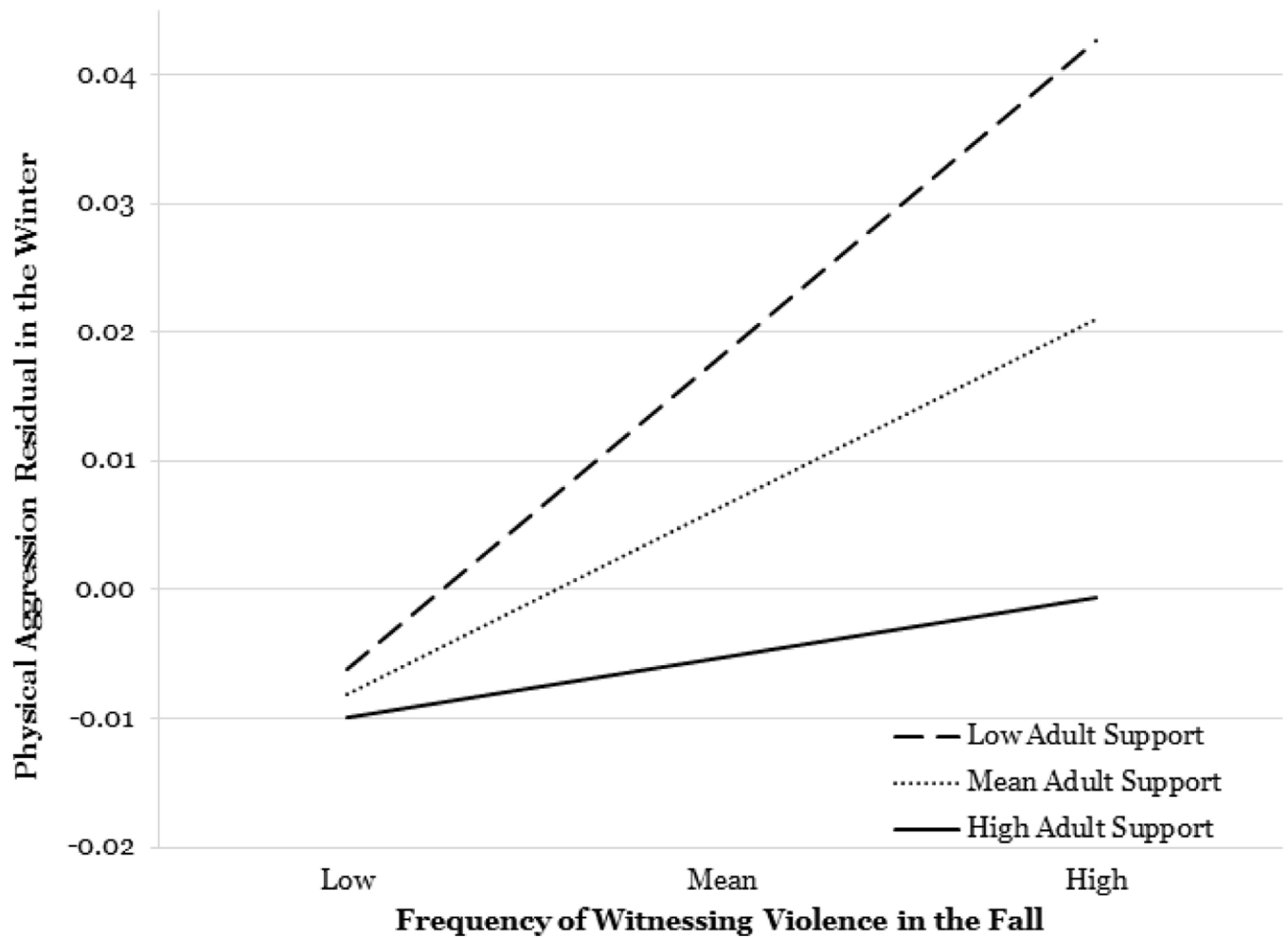
Figure 2.
Moderating Effect of Adult Support on the Relation Between Witnessing Violence in the
Fall and Physical Aggression Residual in the Winter for Male Adolescents
Note. Plots represent adolescents at high and low levels of adult support (1 *SD* above
or below the mean). The vertical axis represents within-person changes relative to the
person-specific mean. The model includes a physical aggression random intercept.

Figure 3.
Moderating Effect of Adult Support on the Relation Between Victimization in the Fall and Physical Aggression Residual in the Winter for (a) Male Adolescents and (b) Female Adolescents

Note. Plots represent adolescents at high and low levels of adult support (1 *SD* above or below the mean). The vertical axis represents within-person changes relative to the person-specific mean. The model includes a physical aggression random intercept.
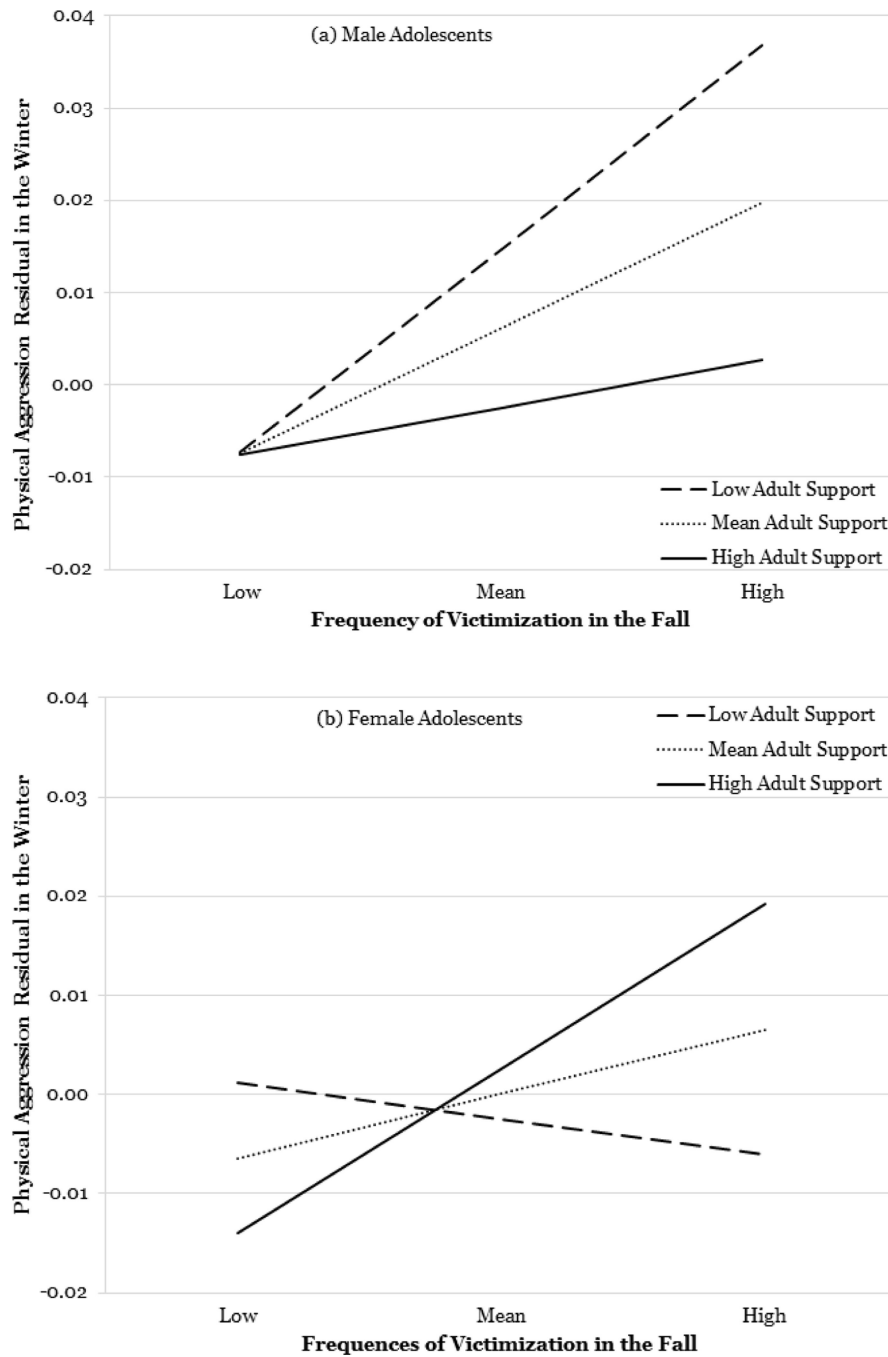
Table 1

Means, Standard Deviations, and Correlations for Wave 1 and Wave 2 Measures of Victimization, Witnessing Violence, Adult Variables, and Physical Aggression

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Wave 1														
1. Witnessing violence	-													
2. Victimization	.66***	-												
3. Parental Messages Supporting Nonviolence	-.08*	-.07*	-											
4. Parental Messages Supporting Retaliation	.11***	.00	-.06*	-										
5. Teacher Support	-.04	-.07*	.29***	.10**	-									
6. Adult Support	-.13***	-.17***	.31***	.03	.22***	-								
7. Physical aggression	.44***	.39***	-.13***	.17***	-.09**	-.08*	-							
Wave 2														
8. Witnessing violence	.67***	.56***	-.06	.08	-.03	-.06	.38***	-						
9. Victimization	.44***	.57***	-.12*	.03	-.05	-.14**	.33***	.65***	-					
10. Parental Messages Supporting Nonviolence	-.08	-.05	.49***	-.17**	.20***	.20**	-.13*	-.07*	-.04	-				
11. Parental Messages Supporting Retaliation	.10	.07	-.05	.44***	.17**	.01	.11	.14***	.06	.02	-			
12. Teacher Support	-.04	-.04	.19**	.06	.57***	.16**	-.09	-.10***	-.09**	.33***	.15***	-		
13. Adult Support	-.15*	-.18**	.24***	-.02	.16**	.52***	.02	-.17***	-.19***	.25***	.19***	.24***	-	
14. Physical aggression	.37***	.36***	-.18**	.10	-.12*	-.05	.58***	.50***	.45***	-.13***	.07*	-.18***	-.17***	-
M	1.60	1.26	2.66	2.16	3.34	28.73	1.40	1.52	1.23	2.59	2.17	3.17	28.78	1.36
SD	0.53	0.39	1.09	0.94	0.95	4.81	.53	0.50	0.37	1.09	0.97	0.96	4.91	.53

Note. $N = 2,575$. Correlations included all four waves, but only correlations for Waves 1 and 2 are reported for simplicity.

*
$p < .05$.

**
$p < .01$.

***
$p < .001$.

Table 2

Standardized Regression Coefficients (Standard Errors) for Models Regressing Wave 2 Physical Aggression on Wave 1 Exposure Variables and Adult Variables for Overall Sample

Wave 1 predictors of Wave 2 change	Wave 2 Physical Aggression	
	Witnessing violence model	Victimization model
Physical aggression	.30** (.11)	.31** (.10)
Exposure to violence	.27*** (.06)	.23*** (.06)
Parental messages supporting nonviolence	−.11*** (.03)	−.12*** (.03)
Parental messages supporting retaliation	.05 (.03)	.08** (.03)
Adult support	−.03 (.03)	−.03 (.03)
Teacher support	−.05 (.03)	−.07* (.03)
Intervention phase	−.07* (.03)	−.09** (.03)
Grade 7	.05 (.03)	.03 (.03)
Grade 8	−.02 (.04)	−.03 (.04)
Male sex	−.07 (.03)	−.08** (.03)
R^2	.31*** (.05)	.29*** (.05)

Note. $N = 2,575$. Each column reports the coefficients for separate models regressing physical aggression at Wave 2 on Wave 1 measures physical aggression, an exposure variable (victimization or witnessing violence), and Wave 1 adult variables from the constrained models, which held the cross-variable relations constant across the four waves model. Models included all four waves, but only results from Waves 1 and 2 are reported for simplicity.

*
$p < .05$.

**
$p < .01$.

***
$p < .001$.