Title: Future expectations and bullying behavior during early adolescence

Background: Hopeful future expectations have been linked to positive developmental outcomes in adolescence, however, the association between future expectations and bullying has received less attention.

Objectives: We examined the relationship between future expectations and bullying perpetration and tested a mediation model that linked future expectations with bullying through attitudes towards violence.

Method: Structural equation modeling was used to examine the relationship between future expectations and bullying perpetration (relational and physical bullying) and to test whether these relationships were mediated by attitudes towards violence in a sample of U.S. 7th grade students (mean age = 12.29 years; N = 196; 60% female; 45% African American).

Results: Attitude towards violence fully mediated the relationship between future expectations and physical bullying (b = -0.58, p = .03; 95% biased-corrected CI for indirect effects: -1.25, -0.16). The relationship between future expectations and relational bullying was partially mediated by attitudes towards violence (b = -1.22, p < .05; 95% biased-corrected CI for indirect effects: -2.93, -0.24).

Discussion: Our findings suggest that future expectations can play a role in reducing attitudes towards violence and bullying among youth. Interventions that help support the development of future goals and aspirations could play a vital role in bullying prevention efforts.

Keywords: future expectations, relational bullying, physical bullying, mediation, adolescence
Future expectations and bullying behavior during early adolescence

Introduction

Bullying and Aggression

Bullying behavior is a problem in schools and communities across the world (Smith & Brain, 2000). The incidence of bullying varies around the world with reported prevalence rates ranging from 9% to 54% (Nansel et al., 2004). In the United States, 13.3% of youth report physical bullying, 37.4% verbal bullying, and 27.2% social bullying others at least once in the past 2 months at school (Wang, Iannotti, & Nansel, 2009).

Most researchers consider bullying a subcategory of aggressive behavior (Espelage & Swearer, 2003; Smith et al., 1999). Bullying may be either direct or indirect, and is depicted as intentional negative actions that are repetitive and impose a power imbalance between students who bully and students who are victimized (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014). Physical bullying is a form of direct aggression and is defined as the use of physical force by a perpetrator(s) toward the targeted youth and includes shoving, hitting, punching, kicking, and pushing (Gladden et al., 2014). Relational forms of bullying can be direct or indirect and include exclusion, ridicule, and name calling with a specific goal of manipulating social networks (Gladden et al., 2014). Overall, bullying can be displayed in physical (e.g. hitting), verbal or psychological (e.g. name-calling, teasing), relational or social (e.g. spreading rumors) and digital (cyberbullying) forms (Wang et al., 2009).

Bullying perpetration during adolescence increases the likelihood of continued anti-social behaviors and negative outcomes in adulthood (Farrington, 1993; Bosworth, Espelage & Simon, 1999; Ttofi & Farrington, 2011, 2012). Bullying during adolescence has been linked to depression, delinquency, and criminality in adulthood, as well as intimate partner violence perpetration and possible unemployment (Ttofi & Farrington, 2012). Kim and colleagues (2011) found that childhood
experiences of bullying significantly predicted violence, risk of heavy drinking and marijuana use in young adulthood.

Researchers have identified similarities and differences in bullying for boys and girls. Boys bully, and are bullied, more than girls (Craig et al., 2009), however, this may vary based on type of bullying. Pepler and colleagues (2006) found boys reported higher levels of bullying toward both same-sex and opposite-sex peers compared to girls. Boys tend to use more physical bullying and girls more psychological or relational forms of bullying (Sullivan, 2011; Crick, Bigbee & Howes, 1996). Yet, gender differences among direct forms of bullying are not as prevalent as among indirect forms of bullying (Carbone-Lopez, Esbensen & Brick, 2010). In addition, Crapanzano and colleagues (2011) found that bullying was more stable across school years for boys than for girls, and concluded that girls may be more influenced by social norms while boys may be more influenced by their personality characteristics.

Researchers have begun to identify factors that contribute to bullying among youth including factors that may increase the likelihood of bullying perpetration (i.e., risk factors), as well as those that may reduce the likelihood of perpetration (i.e., promotive factors; Hemphill et al., 2012; Kokkinos & Kipritsi, 2011; Stassen, 2007). For example, factors such as low-empathy, family conflict, academic failure, and previous bullying experiences are risk factors for bullying behavior (Hemphill et al., 2012; Kokkinos & Kipritsi, 2011). Alternatively, youth with a greater number of developmental strengths are less likely to perpetrate bullying behaviors (Donnon, 2009). Yet, a better understanding of how personal characteristics contribute to bullying behavior, as either risk or promotive factors, is needed. Future expectations and attitude towards the use of violence to solve problems are personal characteristics worthy of further examination.
Future expectations

Future orientation can be defined as an individual’s thoughts, plans, motivations, hopes, and feelings about his or her future (Nurmi, 1991). Expectations or beliefs about the future may be positive or negative, and are influenced by an individual’s experiences and interactions within their social context (Nurmi, 1991). Importantly, possessing positive expectations about the future may be associated with desirable outcomes, thus representing a valuable promotive factor for youth development. Until recently, most research on future orientation and expectations about the future have focused on academic achievement and school functioning (e.g., Adelabu, 2008). Stoddard, Zimmerman, and Bauermeister (2011), however, examined expectations about the future as a promotive factor against violence in a sample of urban adolescents. They found that higher levels of future expectations (i.e., more positive beliefs about their future) were related to a decrease in violent behavior over time. These results support other similar associations between future goals/expectations and violent behavior (Birnbaum et al., 2003), but the effects of an individual’s beliefs or expectations about their future on bullying behavior has not been studied. Future expectations may play a vital role in understanding adolescent bullying behavior. Youth who do not have positive expectations of the future, or are lacking a sense of hope for the future, may be less concerned about the negative consequences of bullying and therefore may be more apt to bully. On the other hand, it is possible that adolescents with more positive future expectations may not want to jeopardize their future plans and therefore refrain from bullying.

Attitude Towards Violence

Other individual-level factors may account for aggressive behavior and may serve as mediators for bullying and aggressive behavior. More specifically, beliefs and attitudes that
support the use of violence have been associated with bullying and aggressive behavior (Espelage, Bosworth, & Simon, 2001; Slaby & Guerra, 1988). Espelage et al. (2001) found that favorable attitude towards violence have been associated with bullying behavior, whereas greater levels of confidence in the use non-violent strategies in conflicts have been associated with less bullying behavior. In addition, Spaccarelli, Coatsworth, and Sperry Bowden (1995) found that beliefs and attitudes about the use of violence mediated the relationship between exposure to violence and violent behavior for adolescent males already involved in delinquent behaviors. Yet, few, if any, researchers have examined the potential mediating role of attitude towards violence to solve problems on the link between adolescents’ future expectations and bullying behavior.

### Purpose and Hypotheses

The purpose of this study was to explore the relationship between future expectations, attitude towards the use of violence to solve problems, and self-reported bullying behaviors in a sample of 7th grade youth. We examined the relationship between future expectations and bullying perpetration and tested a mediation model that linked future expectations with bullying through attitude about violence. We hypothesized that youth who reported higher future expectations would report fewer bullying behaviors, both physical and relational. We also hypothesized that attitude toward the use of violence to solve problems would mediate the relationship between future expectations and bullying behavior. Given the differences reported in the literature regarding physical and relational bullying and gender, we examined physical and relational bullying separately and included gender as a covariate in our multivariate models.

### Methods
This study is based on data collected as part of a school-based survey focused on understanding risk and protective factors for youth violence and bullying. Data were collected from 7th grade students at a Midwestern middle school during their health class. The school is located in a district that cuts across both suburban and urban areas, making the student population highly diverse (50% African American, 36% White). In addition, this suburban community is located in a geographic area that has undergone significant economic decline and 71% of students are considered economically disadvantaged. The study was approved by the University of Michigan Institutional Review Board and a Certificate of Confidentiality was obtained from the National Institute of Health. Written parental consent and student assent were obtained from all study participants.

The survey was administered in classrooms by trained research staff. Participants completed a self-administered paper and pencil questionnaire that included items about future expectations, attitude towards violence, past 30-day aggression (i.e., physical fighting, non-physical aggression and relational aggression), bullying and violent behavior, and other known risk and protective factors associated with youth violence. Students completed the survey in approximately 35 minutes. Approximately 60% of eligible 7th grade students participated in the survey (mean age = 12.29 years; N = 196; 60% female; 45% African American). Non-participating students were given workbooks and instructed to work quietly during the survey hour while the rest of the class took the survey. For students with lower reading levels or limited English proficiency (n = 4), the survey was read aloud in a separate, private room.

Measures
Future expectations. Adolescents’ beliefs about their future were measured using six items: I will be able to handle the problems that might come up in my life, I will be able to handle my school work, I will always have friends and people that care about me, I will be able to stay out of trouble, I will have a happy life, and I will have interesting things to do in my life. Response options were on a 4-point scale and ranged from 1 (disagree a lot) to 4 (agree a lot). We computed a composite score for each participant with higher values indicating more positive future expectations ($\alpha = .77$; Wyman et al., 1993).

Attitude toward violence. Six items, indicating how often participants had engaged in each behavior during the past month, were used to assess attitude towards the use of violence to solve problems (e.g., If I walk away from a fight I would be a coward and It’s ok to hit someone who hits you first; Bosworth & Espelage, 1995). Response options ranged from 1 (disagree a lot) to 4 (agree a lot). We computed a mean composite score with higher scores indicating more positive attitude towards the use of violence to solve problems ($\alpha = .60$).

Physical bullying. Following the work of Espelage and colleagues (e.g., Espelage et al., 2001), bullying was assessed using behavioral descriptors of physical and relational aggressive behavior. Three items, indicating how often participants had engaged in each aggressive behavior at school or on the school bus during the past month, were used to assess physical bullying: threaten to hit or hurt another student; ask someone to fight; and been in a physical fight. Response options ranged from 0 (never) to 5 (5 or more times). We computed a sum composite score with higher scores indicating more physical bullying ($\alpha = .75$; Orpinas & Frankowski, 2001; Crick & Bigbee, 1998).
Relational bullying. Nine items, indicating how often participants had engaged in each aggressive behavior at school or on the school bus during the past month, were used to assess relational bullying: leave someone out on purpose; pick on someone; say things about another student to make others laugh; ignore or stop talking to someone; spread rumors or gossip about someone; make fun of someone’s family; threaten to not be someone’s friend; say something hurtful to someone in email or on the internet; and ruin someone’s stuff. Response options ranged from 0 (never) to 5 (5 or more times). We computed a sum composite score with higher scores indicating more relational bullying (α = .82; Orpinas & Frankowski, 2001; Crick & Bigbee, 1998).

Demographic variables. Participants’ self-reported gender (0 = girl; 1 = boy), race/ethnicity, and mothers’ educational attainment. Race/ethnicity was measured using six categories: Black or African American, White, Asian, American Indian, Hispanic, and Other. For analyses race/ethnicity was condensed into three categories: White, Black, and Mixed Race/Other Race. Mother’s education, used as a proxy for socioeconomic status, was assessed using nine categories: 8th grade or less, some high school, completed high school or GED, vocational or training school, some college, completed college, graduate or professional school after college, no contact with mother, or don’t know. For analyses, ‘no contact with mother’ and ‘don’t know’ were recoded as missing. Data were imputed for mother’s educational attainment using the Cohen, Cohen, West, and Aiken’s (2003) method for participants who reported “I don’t know ‘or had missing data.

Data Analyses
Pearson's correlations were used to examine bivariate relationships between study variables. Differences on measures across genders were examined with independent sample t tests assuming unequal variances (Zimmerman, 2004).

Structural equation modeling (SEM) in Mplus version 7.0 was used to examine the relationship between future expectations and bullying perpetration and to test the study hypothesis that relationships between adolescents’ future expectations and bullying behaviors are mediated by attitude towards violence. Mplus allows all regression equations in the mediation model to be estimated simultaneously.

According to classic approaches to mediation (Baron & Kenny, 1986), several conditions must be met for a variable to be considered a mediator. The first condition is that the independent variable (future expectations) must be significantly associated with the dependent variable (bullying), referred to as path c. However, current practice has omitted this requirement as situations may exist in which a significant mediation effect is present in the absence of a significant correlation (i.e., suppression; Hayes, 2009). Other criteria include: 1) the independent variable (future expectations) must be significantly associated with the hypothesized mediator (attitude towards violence; path a); 2) the mediator (attitude towards violence) must be significantly associated with the dependent variable (bullying; path b); and 3) the impact of the independent variable (future expectations) on the dependent variable (bullying) is less after controlling for the mediator (attitude towards violence; i.e., c’ < c).

In structural equation modeling, the mediating effect is expressed as the indirect effect. The indirect effect is the product of two path coefficients (a X b) and is considered significant on the basis of 95% confidence intervals of the unstandardized coefficient estimates. Mediated effects were tested by computing 95% bias-corrected confidence intervals for indirect effects.
using bootstrapping. If the 95% biased corrected confidence interval of the unstandardized specific direct and indirect effect does not include 0, we concluded that there was a significant effect (Hayes, 2009). The relationship between the independent variable and dependent variable is considered completely mediated if path $c'$ is non-significant. Model fit indices include model chi-square with degrees of freedom (df) and $p$-value, comparative fit index (CFI; Bentler, 1990), root mean square error of approximation (RMSEA; Browne & Cudeck, 1993), and its 90% confidence interval (CI). CFI > .90 and RMSEA < .05 are indicative of a good fit (Kline, 2011).

Results

Descriptives

Among the 196 youth, 35% reported being involved in a physical fight in the past month; 14% reported 2 or more acts of physical aggression and 75% reported two or more acts of relational aggression in the past month. Table 1 provides descriptive data for the focal variables (future expectations, attitude towards violence, physical bullying and relational bullying) separately for boys and girls. Thirty-eight percent of boys (n = 29) and 26% of girls reported perpetrating 2 or more acts of physical bullying in school during the past 30 days. Approximately 73% of boys and 76% of girls reported perpetrating 2 or more acts of relational bullying in school during the same time period.

Bivariate Associations

Descriptive statistics for study variables are presented in Table 1. We found no gender differences for future expectations ($t (157.85) = -1.52, p = n.s.$), attitude towards violence ($t (172.07) = 1.31, p = n.s.$), physical bullying ($t (133.31) = .89, p = n.s.$), or relational bullying ($t (150.60) = .22, p = n.s.$).
Future expectations were correlated negatively with positive attitude towards violence ($r = -0.19$, $p < .05$), physical bullying ($r = -0.22$, $p < .05$), and relational bullying ($r = -0.32$, $p < .05$) (Table 2). Positive attitude towards violence was correlated with physical bullying ($r = -0.37$, $p < .01$) and relational bullying ($r = -0.37$, $p < .01$). Physical bullying and relational bullying were also correlated ($r = 0.71$, $p < .01$). None of the demographic variables were correlated with future expectations, attitude towards violence, physical or relational bullying.

**Multivariate Models**

Results for physical and relational bullying models are shown in Table 3. The initial models accounted for gender, and other demographic variables (race/ethnicity and socioeconomic status). For parsimony, non-significant demographic variables were removed from the model with the exception of gender, which although not significant, remained in the model to be consistent with the hypothesis and literature supporting gender differences in physical and relationship bullying.

The path diagram of the meditation models for physical and relational bullying (Figure 1) include unstandardized estimates for the causal paths for the direct (paths a, b, and c’) and indirect effects. The mediation model for physical bullying showed a good fit: $\chi^2(5), N = 193] = 45.04, p < .001$; $CFI = .99$; $TLI = .99$; $RMSEA = .02$, 90% CI [.000, .193]; $SRMR = .02$). Attitude towards violence fully mediated the relationship between future expectations and physical bullying, as shown in the significant indirect effect ($b = -0.58$, $p = .03$; 95% biased-corrected CI for indirect effects: -1.25, -0.16) and non-significant c’ path. The mediation model for relational bullying also showed a good fit: $\chi^2(5), N = 193] = 50.54, p < .001$; $CFI = 1.00$; $TLI = 1.00$; $RMSEA = .00$, 90% CI [.000, .189]; $SRMR = .02$). Attitude towards violence partially
mediated the relationship between future expectations and relational bullying as shown by the significant indirect effect and c’ path ($b = -1.22, p < .05$; 95% biased-corrected CI for indirect effects: -2.93, -2.24).

**Discussion**

This study examined the relationship between future expectations, attitude towards violence, and self-reported bullying behaviors among young adolescents from an economically distressed community. Our findings supported the hypothesis that more positive future expectations would be related to lower levels of bullying behaviors in this sample of early adolescents. In separate multivariate models, future expectations were protective against both physical and relational bullying. Our findings also supported the hypothesis that the relationship between future expectations and physical and relational bullying would be mediated by attitude towards violence.

The present study advanced our understanding of the link between future expectations and bullying. Our results are consistent with the extant research literature indicating that adolescents with future goals were less likely to be involved in physical fighting (Stoddard, Zimmerman, & Bauermeister, 2011). Researchers, however, have not articulated the mechanism through which this relationship occurs. It is possible that youth with positive future expectations would perceive violence as hindering their future goals. Alternatively, youth with positive future expectations may not consider bullying and aggressive behavior in their repertoire. This may be due to more positive outlook on life as poor future expectations have been linked to depression and hopelessness (Chen & Vazonyi, 2013), which are associated with bullying perpetration (Espelage et al., 2001). It is also possible that future expectations are connected to better social integration and skills, which preclude the perpetration of bullying behaviors.
These conjectures were explored in the present study by considering attitude towards violence as a mediating mechanism in the relationship between future expectations on bullying perpetration. We found that attitude towards violence fully mediate the relationship with physical bullying. This is consistent with previous research which found a relationship between favorable attitude towards violence and self-reported aggression to others (Espelage et al., 2001).

Conversely, Bosworth, Espelage and Simon (1999) found that bullying was lower among adolescents who were confident in using nonviolent strategies during a conflict. It is possible that children who see little hope for a positive future may consider violent and aggressive behavior an appropriate route for obtaining social and personal goals. These adolescents may determine that there is little to lose by engaging in negative and destructive behavior. Rather, they may see violence as an opportunity to display power and influence that they do not have or experience in other social interactions. Although this may indicate poorer social skills among those who do bully, it may also indicate that children who bully perceive a limited range of strategies to accomplish desired goals (e.g., control, influence). Violence may be the best option when their future is already bleak. Our findings suggest that attitude towards violence are important to consider when exploring the relationship between future expectations and bullying behavior.

The relationship between future expectations and relational bullying was partially mediated by attitude towards violence. Relational aggression may be seen as another opportunity to display dominance and power in a social context. Yet, although attitude towards violence were related to relational bullying in a manner similar to physical bullying, the relationship between future expectations and bullying was not fully transmitted through these attitudes. While researchers have suggested that attitude towards violence predict bullying
among early adolescents, other psychological factors are important as well (Espelage et al., 2001). Espelage et al. (2001), for example, found that anger and depression were associated with an increase in bullying over time in a sample of 6th grade students. As previously indicated, it is possible that poor future expectations are associated with increased feelings of negative affect, including depression, anger, hostility and hopelessness. These psychological factors, in turn, may lead adolescents to degrade, tease, and belittle others as a form of emotion regulation and coping (Espelage et al., 2001).

We found no gender differences across future expectations, attitude towards violence, physical bullying, or relational bullying. It is possible the small sample size reduced statistical power to detect these differences. It is notable, however, that almost three quarters of both boys and girls reported perpetrating 2 or more acts of relational bullying in school in the last 30 days and approximately one third of boys and girls reported perpetrating 2 or more acts of physical bullying in school in the past 30 days. These estimates are somewhat higher than reported in past research particularly for relational bullying (Nansel et al., 2004; Wang et al., 2009). The discrepancy with past research may be explained by differences in definitions, methodologies, or the time frames in which the bullying behavior was assessed (Borntrager et al., 2009). We examined both relational and physical bullying with items that asked about specific bullying behaviors (i.e., threatening to hit, teasing) without prompting students with a definition of bullying. Wang and colleagues used a questionnaire in which the participants received a standard definition of bullying prior to being asked about bullying behaviors (Wang et al., 2009). Similarly, the Health Behaviour in School-aged Children Study (Nansel et al., 2004) also prompted students with a standard definition of bullying prior to asking students to report the frequency of their bullying behavior. These definitions or prompts may influence participants’
responses based on whether or not the participant views themselves as a bully, rather than identifying their participation in behaviors that are defined as bullying. While researchers lack consensus regarding the prevalence of bullying in the country, efforts such as those by the CDC that suggest standard definitions and measures will be useful to future research endeavors (Gladden et al., 2014; Hamburger et al., 2011).

Despite the strengths of the current study, several limitations should be noted. First, as a cross-sectional study, we cannot determine causality. Longitudinal studies are needed to confirm the relationships between future expectations, attitude towards violence to solve problems, and perpetration of physical and relational bullying. Second, our sample was relatively small and included youth attending a single school, thus limiting the ability to generalize to other populations of youth. Additional studies are needed to explore and understand these relationships among youth of different ages and from additional geographic areas. Finally, our model included only one risk (i.e., attitude towards violence) and one promotive factor (i.e., future expectations). Many factors, including individual, social, cultural, psychological, and educational factors, can be considered in explaining and predicting bullying at school. Low-empathy, family conflict, academic failure, and previous bullying experiences have been reported to be predictors of bullying behavior (Kokkinos & Kipritsi, 2011; Hemphill et al., 2012). While different risk factors can lead to bullying in particular contexts, promotive factors can play a vital role in prevention. Factors such as parental involvement and support, positive role models, and a strong maternal bond are promotive factors expected to minimize the likelihood of bullying perpetration (Shetgiri, Lin, & Flores, 2013). Researchers also suggest that students with a greater number of developmental strengths are less likely to engage in aggressive behaviors or be bullied than students who report fewer developmental strengths (Donnon, 2009). These limitations
notwithstanding, the study adds to our understanding of bullying behaviors and the positive aspects of youths’ lives that may help them avoid such behavior. Our study is also one of the first to examine the role of future expectations as one such promotive factor. Future research should continue to explore potential risk and promotive factors for bullying involvement to better understand the mechanisms which influence engaging in aggressive and bullying behaviors.

**Implications**

The results from this study provide useful direction for community and school-based nurses and other public health educators when developing interventions focused on decreasing youth aggression. First, interventions that help adolescents recognize positive youth opportunities to help enhance their future aspirations might be useful. Yet, focusing solely on recognizing youth opportunities is not enough. Interventionists also need to provide youth with activities and skills to attain positive future expectations. Thus, asking youth to create timelines to connect concretely their present selves to their future selves, improving their everyday problem solving skills and communication skills are all effective strategies (Oyserman, Terry, & Bybee, 2002). Previous research suggests that structured activities such as these can influence future expectations and, in turn, fuel motivation (Oyserman et al., 2002).

Interventions aimed at improving adolescents’ future expectations and future possible selves have shown positive outcomes. More specifically, these interventions have resulted in increased school attendance, more school involvement, better grades and standardized test scores, decreased depression, less misbehavior during school, and decreased trouble in school for boys (Oyserman, Bybee, & Terry, 2006; Oyserman et al., 2002). These outcomes suggest that an intervention aimed at enhancing adolescents’ perceived future selves may also be helpful in protecting against aggressive behavior. Practitioners and researchers need to focus on identifying
factors that promote the wellbeing of youth and decrease violence and aggression, and continue
to explore whether protective factors are entirely independent from risk factors (Orpinas &
Horne, 2006).
References


Craig, W., Harel-Fisch, Y., Fogel-Grinvald, H., Dostaler, S., Hetland, J., Simons-Morton, B., Molcho, M., Gaspar de Mato, M., Overpeck, M., Due, P., Pickett, W., the HBSC


Table 1. Descriptive statistics for study variables presented by gender.

<table>
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<th>Variable (range)</th>
<th>Girls (n = 117)</th>
<th></th>
<th>Boys (n = 77)</th>
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<tr>
<td></td>
<td>Percent</td>
<td>M</td>
<td>SD</td>
<td>Percent</td>
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<td><strong>Demographics</strong></td>
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<td></td>
<td>8</td>
<td></td>
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<td>Some college</td>
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<td>11</td>
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<td>Completed college</td>
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<td>Future Expectations (1 - 4)</td>
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<td>Attitude towards Violence</td>
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<tr>
<td>(1 - 4)</td>
<td>2.23</td>
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<td>2.22</td>
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*Note. T-tests results indicated no significant difference between girls and boys on focal variables.*
Table 2. Correlations between study variables.

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<th>Physical Aggression</th>
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<td>.71*</td>
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<td>-.11</td>
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</tbody>
</table>
Table 3. *Results of the Mediation Model examining future expectations, attitude towards violence, and bullying behavior.*

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized (95% CI)</th>
<th>Direct Effect (95% CI)</th>
<th>Indirect Effect (95% CI)</th>
<th>Total Effect (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical bullying</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future expectations → Attitude towards violence</td>
<td>-.34 [-.63, -.06]</td>
<td>.55 [-.64, -.08]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude toward violence → Physical bullying</td>
<td>1.70 [.99, 2.40]</td>
<td>.36 [1.09, 4.50]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future expectations → Physical bullying</td>
<td>-.98 [-2.11, .02]</td>
<td>-.13 [-.28, .01]</td>
<td>-.08 [-.15, -.01]</td>
<td>-21 [-.38, -.05]</td>
</tr>
<tr>
<td>Male (vs. female) → Physical bullying</td>
<td>-.36 [-1.28, .56]</td>
<td>.47 [-1.38, .50]</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Relational bullying</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future expectations → Attitude towards violence</td>
<td>-.32 [-.61, -.04]</td>
<td>-.21 [-.62, -.06]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude toward violence → Relational bullying</td>
<td>3.79 [1.91, 5.66]</td>
<td>.32 [1.98, 5.72]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future expectations → Relational bullying</td>
<td>-4.45 [-7.46, -1.43]</td>
<td>-.25 [-7.67, -1.59]</td>
<td>-.07 [-.14, .01]</td>
<td>-.32 [-.47, -.16]</td>
</tr>
<tr>
<td>Male (vs. female) → Relational bullying</td>
<td>.69 [-1.54, 2.92]</td>
<td>.04 [-1.66, 2.78]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* If the 95% confidence interval of the standardized specific direct and indirect effect did not include 0, we concluded that there was a significant indirect effect. If the 95% confidence interval included 0 as the lower bound value, the effect was determined to be marginal (Hayes, 2009). Effect estimates are standardized values unless otherwise noted. Mother’s educational attainment was used as a proxy for socioeconomic status. Data were imputed for mother’s educational attainment using the Cohen, Cohen, West, and Aiken’s (2003) method for participants who reported “I don’t know” or had missing data.
Figure 1. Conceptual figures with estimates (standardized) for the proposed mediation models tested.

Path a represents the estimate of the independent variable on the mediator. Path b represents the estimate of the mediator on the dependent variable. Path c' represents the estimate of the independent variable on the dependent variable after controlling for the mediator. Note. * p < .05, ** p < .01, *** p < .001.