



School Size and Youth Violence: Potential Mediating and Moderating Role of School Connectedness



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Introduction

Youth violence continues to be considered a public health concern in the United States. In 2001, the Surgeon General released a report in order to designate youth violence as a public health concern in the United States (U. S. Department of Health and Human Services, 2001). Interestingly, youth violence was found to be less lethal than it was in the early-mid 1990s, but at the same time rates of adolescent violent behavior in general had increased (Federal Bureau of Investigation, 1999). However, it is important to note that the most recent data available for violent crime arrests by age have shown significant trends in decreasing for adolescents over the past 10 years (Federal Bureau of Investigation, 2010). Also of concern are the findings that adolescent problem and criminal behaviors are related to future adult illegal behaviors (Loeber & Hay, 1997; Sampson & Laub, 1990). Furthermore, compared to all other age groups, children and adolescents are most likely to be the victims of crimes (Furlong & Morrison, 2000). Youth violence is the second leading cause of fatal injuries for adolescents and in 2009 over 300,000 youth received emergency treatment for nonfatal injuries resulting from violence (Centers for Disease Control and Prevention, 2009).

Extant research indicates school size is positively associated with youth violence (Ferris & West, 2004; Kaiser, 2005; Leung & Ferris, 2008). School connectedness (i.e., the quality of perceived relationships between students and school personnel) has been found to be inversely associated with youth violence (e.g., Catalano et al., 2004; Derzon, 2001; McNeely et al., 2002; Resnick et al., 1997). Such research lends support to the notion that the school context is a potential target for successful implementation of youth violence preventative approaches.

The goal of this study was to consider an alternative, multivariable approach towards preventing youth violence utilizing longitudinal data. First, school personnel (e.g., school teachers) may specifically enhance/foster school-connectedness through their relationships, which may play a role in decreasing youth violence. Second, school size by itself seems to also influence school connectedness and other similar factors such as interpersonal relationships with teachers. This study takes into consideration the calls of numerous researchers to expand this research domain (e.g., Blum et al., 2002; Crosnoe et al., 2004; Hoagwood, 2000; Jenkins, 1997; Loukas et al., 2006). The research questions associated with the present study emerged as an unexplored area within the larger context of research related to youth violence, school connectedness, and school size. Although there is a growing body of literature on the relationship between school connectedness and youth violence, very few have considered school size and no known study has examined school connectedness as a mediator or moderator.

Hypotheses

Research Question One: Does school connectedness partially mediate the effects of school size on youth violence?

Hypothesis 1: School size would be positively associated with youth violence.

Hypothesis 2: School size would be inversely associated with school connectedness.

Hypothesis 3: H_{3a} : School connectedness would be inversely associated with youth violence. H_{3b} : School connectedness would be inversely associated with youth violence, while controlling for the effects of school size.

Hypothesis 4: School connectedness would partially mediate the effects of school size on youth violence. (See Figure 1)

Research Question Two: Does school connectedness moderate the effects of school size on youth violence?

Hypothesis 5: Student connectedness would moderate the effect of school size on youth violence. (See Figures 2 and 3 – not on poster)

Research Question Three: Will the relationships found in the first two research questions still hold after controlling for pertinent student and school characteristics?

Method

Participants, Procedure, & Analysis

This study utilized longitudinal data to test the possible mediating and moderating effects of school connectedness between school size and youth violence. The participants were obtained from Waves I and II of the National Longitudinal Study of Adolescent Health (Add Health), a nationally representative ongoing survey of 7th through 12th grade students in the United States (Harris et al., 2009). A series of two-level models using Hierarchical Linear Modeling (HLM6) procedures were compared. The sample consisted of 11,777 students that were measured on school connectedness and youth violence (level 1) at time 1 and time 2. The students were nested within 115 schools, and school size (level 2) was measured at time 1. Weightings were also used for all analyses at both levels. All multilevel model analyses in this study used the default setting of restricted maximum likelihood (REML) estimation in order to simultaneously estimated random and fixed effects.

Measures

Youth violence

–Youth violence was measured using a 7-item scale from the Add Health data that assessed a wide range of violent behaviors. Resnick et al. (1997), Dornbusch et al. (2001), and Resnick et al. (2004) used these 7 questions to measure the construct with strong internal consistency (alphas = .82, .82, and .83, respectively). These questions assessed the use of weapons, physical altercations, and physical injury. The following are the 7 questions that were used in this study to measure youth violence (based on in the past 12 months “how often did you”): (1) “Pull a knife or gun on someone?” (2) “Shot or stabbed someone?” (3) “Get into a serious physical fight?” (4) “Use a weapon in a fight?” (5) “Hurt someone badly enough to need bandages or care from a doctor or nurse?” (6) “Use or threaten to use a weapon to get something from someone?” (7) “Take part in a fight where a group of your friends was against another group?”

–Because of the relative low frequencies of violence, the violent data were recoded as *no violent acts* a (0) and *one or more violent acts* a (1) (see Dornbusch et al., 2001; Resnick et al., 2004). However, although each question was treated as dichotomous there are multiple violence questions which provided scores varying from 0-7 for each student. Similar to previous studies (Dornbusch et al., 2001; Resnick et al., 2004) the scale was transformed before analyses (i.e., log-log) because of the highly skewed distribution.

School size

–School size was reported by the school administrators among many other school characteristic variables. School size was reported in increments of 100 students, while Add Health dataset identified the schools as small (1-400), medium (401-1000), or large (1001-4000). Thus, this predictor variable was coded categorically.

School connectedness

–School connectedness was measured using Resnick et al.’s (1997) 8-item scale. Resnick et al.’s definition includes adolescents’ need to feel respected and cared for, having a perception of belonging, and a sense of safety and fairness. Resnick et al. used an 8-item scale (alpha = .75) that included feelings of teacher support and respect, sense of safety, perception of belonging, perception of being treated fairly, and difficulty getting along with teachers and other students. Resnick et al.’s 8-item scale was selected because of its theoretical foundation, widely cited definition of school connectedness, and other studies citing similar internal consistency (e.g., Henrich et al., 2005; McNeely & Falci, 2004). The following are the 8 questions that were used in this study to measure school connectedness as a predictor variable: (1) “You feel close to people at your school?” (2) “You feel like you are part of your school?” (3) “You are happy to be at your school?” (4) “The teachers at your school treat students fairly?” (5) “You feel safe in your school?” (6) Since the start of the school year, how often have you had trouble “getting along with your teachers?” (7) Since the start of the school year, how often have you had trouble “getting along with other students?” (8) “How much do you feel that your teachers care about you?”

–These scores were then standardized and summed for each student.

Results

Results did support school connectedness as a partial mediator between school size and youth violence (**Q1**). **Hypothesis 1** {Model A} was not supported (school size would be positively associated with youth violence). **Hypothesis 2** {Model B} was supported (school size would be inversely associated with school connectedness). **Hypotheses 3a and 3b** {Models C & D} were both supported (school connectedness would be inversely associated with youth violence, and while controlling for the effects of school size). **Hypothesis 4** {Models A & D} was supported (school connectedness would partially mediate the effects of school size on youth violence). In sum, school size had almost no effect on youth violence by itself, but any effect that it did have in conjunction with school connectedness. This conclusion was supported by the Sobel Test: 3.251 ($p=0.001$).

Results did not support school connectedness as a moderator between school size and youth violence (**Q2** & **Hypothesis 5**) {Model E}. (See Table 1 for Models A-E)

Results did still hold after controlling for pertinent student and school characteristics (**Q3**). More specifically, biological sex, Hispanic origin, White, African American, American Indian, and income were the level 1 controls. School type and urbanicity were the level 2 controls.

Discussion

These findings highlight the importance of how the quality of individual student-school personnel relationships can play a role in preventing violence both within and outside of the school setting. Furthermore, increasing school student population appears to play a role in creating challenges in the development of quality relationships between students and school personnel, which in turn impedes prevention of youth violence. Overall, the findings from this study highlight how student-teacher relationships can be a key factor in preventing youth violence. Furthermore, the malleability of school connectedness provides a primary target area for change. School psychologists and other mental health professionals can both create programs that improve student-teacher relationships and also have a means to assess individual student perceptions of safety and relationships with others. In addition to contributing to the literature on preventing youth violence, this study also underscores the need for future research to take caution in research design and measurement with Add Health data, and further exploration in alternative contextual relationships that may prevent youth violence

Figure 1 & Table 1

