Published in final edited form as:

J Contemp Crim Justice. 2011 August ; 27(3): 361–377. doi:10.1177/1043986211412571.

Investigating the Role of Gender and Delinquency in Exposure to Violence Among Puerto Rican Youth

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Abstract

Using a longitudinal sample of Puerto Rican adolescents living in the Bronx, New York, this study examines the predictors of exposure to violence within gender. Results from a series of negative binomial regressions suggested (a) sensation seeking, peer delinquency, coercive discipline, and initial delinquency increased the likelihood of exposure to violence for both males and females at multiple time points and (b) initial delinquency was the only consistent predictor of exposure to violence at all time points. Regarding the role of gender, the results indicated that some risk factors were similar across genders (e.g., sensation seeking, coercive discipline, peer delinquency, and delinquent behavior), whereas other risk factors differed across gender (e.g., age and welfare among males and school environment for females). Study limitations and implications are discussed.

Keywords

exposure to violence; Hispanics; delinquency; longitudinal

Exposure to violence is a global public health problem among youth (Glodich, 1998). Early exposure to neighborhood and community violence has been associated with many adverse outcomes such as depression, suicidal thoughts (Hagan & Foster, 2001), diminished educational performance and attainment (Macmillan & Hagan, 2004), criminal offending (Fagan, 2003), substance use (Kaukinen, 2002), running away from home, dropping out of school, and teenage pregnancy (Haynie, Petts, Maimon, & Piquero, 2009). Exposure to violence during adolescence may increase risk of problematic behaviors that persist over the life course.

Although several studies have examined the health consequences of exposure to violence, less is known about its predictors (Buka et al., 2001). Among all ethnic and racial groups,

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Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

studies have found that living in disadvantaged neighborhoods increases risk for exposure to violence (Margolin & Gordis, 2000; Purugganan, Stein, Silver, & Benenson, 2000). Margolin and Gordis (2000) found that in inner-city neighborhoods, one third or more of preteenage and teenage children have been directly victimized and almost all the children have been exposed to community violence. Other studies have documented a high prevalence of violence in disadvantaged rural communities as well (Scarpa, 2001). Sullivan, Farrell, Kliewer, Vulin-Reynolds, and Valois (2007) found that among 6th graders in middle school, 56% of adolescents reported witnessing at least one violent act within the past 30 days, and 46% of adolescents reported being victimized at least once within the past 30 days. Regardless of the urban or rural environment, socioeconomic disadvantage at the neighborhood level increases the risk of exposure to violence and violent victimization.

It is also true that school- and individual-level variables appear to play a role in adolescents' violence exposure. School grades and school environment have emerged as important correlates. Fitzpatrick (1999) examined the association between individual and environmental characteristics in a nationally representative sample of elementary and high school students. Findings suggested that students who reported more negativity toward their school environment were victimized more frequently, whereas students with higher grades had lower victimization. At the individual-level, age appears to be a risk factor, as most violence exposure occurs during adolescence (Hanish & Guerra, 2000; Macmillan, 2001). Although studies show a positive association between age and exposure, it is not universal (Stein, Jaycox, Kataoka, Rhodes, & Vestal, 2003).

Gender and Ethnic Similarities/Differences in Exposure to Violence

Evidence suggests that the predictors of violence exposure differ by gender. Research has consistently indicated that males are more likely to be exposed to violence than females (Carbone-Lopez, Esbensen, & Brick, 2010; Haynie et al., 2009; Malik, Sorenson, & Aneshensel, 1997; Purugganan et al., 2000; Scarpa, 2001; Stein et al., 2003). There is also evidence of gender differences in the types of exposure to violence experienced by adolescents (Stein et al., 2003). Haynie et al. (2009) noted that women were more likely to be exposed to indirect violence (witnessing violent activity) than direct violence (personally experiencing) compared with men. Men were more likely than women to be exposed to both direct and indirect violence. Song, Singer, and Anglin (1998) also noted gender differences, reporting that exposure to shootings or knife attacks predicted violent behaviors for males, whereas exposure to shootings or knife attacks, being a victim of or witness to violence at home, and being a victim of violence at school were associated with violent behaviors in females (Song et al., 1998).

In addition, minorities—particularly Hispanic and African American youth—are at a disproportionately higher risk for exposure to violence (Stein et al., 2003). In a nationally representative sample of U.S. adolescents, Crouch, Hansan, Saunders, Kilpatrick, and Resnick (2000) found that African American and Hispanic youth reported higher rates of witnessing violence at each income level compared with Whites. Evidence also suggests that exposure to violence may play a role in elevated levels of violence among Hispanic youth (Brady, Gorman-Smith, Henry, & Tolan, 2008). Gorman-Smith and Tolan (1998) reported that among African American and Hispanic youth, exposure to community violence in the past year was related to increases in aggressive behavior and depression. In another study, knowledge of victimization, witnessing violence, and direct victimization were associated with greater violence among Hispanic and African American adolescents with less effective coping strategies (Brady et al., 2008).

Despite the increased risk of violence and exposure to violence among Hispanic youth, less is known about the predictors of such exposure and the penultimate effects such exposure may have. Moreover, although a few noteworthy longitudinal studies have investigated the predictors of violence exposure (Brady et al., 2008; Gorman-Smith & Tolan, 1998; Hanish & Guerra, 2000; Peguero, 2009), only two of these evaluated the predictors of exposure to violence among Hispanics (Hanish & Guerra, 2000; Peguero, 2009). Acknowledging that most of the literature focuses on Black and White adolescents, this study goes beyond the Black-and-White divide by examining the predictors of exposure to violence within gender using a longitudinal sample of Puerto Rican youth ages 5 to 13 living in Bronx, New York who participated in the Boricua Youth Study. Furthermore, the studies reviewed above lead us to hypothesize that there will be gender differences in the predictors of exposure to violence. Finally, this study's unique focus on exposure to violence and delinquency among Hispanics in general and Puerto Rican youth in particular is an important contribution especially considering the rapid population growth among Hispanics (U.S. Census, 2000), their immigration and migration patterns (Martinez & Valenzuela, 2006; Pew Hispanic Center, 2009; Suro, 2005), the differences in neighborhood context in which minorities (especially Hispanics) reside (Lara-Cinisomo, Xue, & Brooks-Gunn, 2008, pp. 5–6), and their increasing involvement with the criminal justice system (Lopez & Livingstone, 2009).

This study will contribute to the literature on gender and ethnic differences in exposure to violence among adolescents. As noted above, much of the literature has focused on Black and White youth; however, this study will seek to understand the unique predictors of exposure to violence in a sample of Puerto Rican adolescents residing in New York. Using variables specific to Hispanics, this study will inform the debate as to whether there are gender and ethnic differences in violence exposure, which may influence differential levels of delinquency. Given the unique risk and protective factors specific to Hispanics (such as acculturation and cultural identity), theoretical perspectives explaining exposure to violence among Hispanics residing in the United States are lacking in the literature. This study will provide insight as to whether the predictors of violence exposure are similar to those found among Black and White adolescents. Differences in the predictors may suggest that Hispanic-specific theories of victimization are needed to explain the differential reasons for crime and victimization among Hispanics.

Method

Participants

Data were derived from 1,138 Puerto Rican youth living in the Bronx, New York, who participated in the Boricua Youth Study (BYS; Bird, Canino, et al., 2006; Bird, Davies, et al., 2006). The BYS is an epidemiological and longitudinal study of Puerto Rican children between the ages of 5 and 13 living in the Bronx. Bird et al. (Bird, Canino, et al., 2006; Bird, Davies, et al., 2006) collected three annual waves of data from the youth between summer 2000 and fall 2004 (Bird, Canino, et al., 2006; Bird, Davies, et al., 2006). All of the three interviews were conducted in the youths' homes by trained interviewers, and the children and parents were interviewed separately and in private by different interviewers. The survey questionnaires were programmed into a laptop computer, and electronic versions were made available for the participants' use in both Spanish and English. All of the participant information for each wave of data was collected at each of the three corresponding interviews. The sampling process yielded 1,414 eligible participants in the Bronx, of whom 1,138 were interviewed (completion rate of 80.5%). Sample retention in the two annual follow-ups was above 85% and missing data was less than 4%. Information regarding the data collection procedures (Bird, Canino, et al., 2006; Bird, Davies, et al., 2006) and delinquency-focused investigations (Jennings et al., 2010; Maldonado-Molina, Piquero,

Jennings, Bird, & Canino, 2009; Maldonado-Molina, Jennings, Tobler, Piquero, & Canino, 2010) exist elsewhere.

Descriptive statistics indicated that 51.7% of the sample were boys with a mean age of 9.5 at baseline. Descriptive analyses (Table 1, Figure 1) suggest that the violence exposure is experienced significantly more by males than by females at Time 1, Time 2, and Time 3. Sensation seeking was significantly higher among males ($M = 4.18$, $SD = 2.56$) than females ($M = 3.03$, $SD = 2.35$), coercive discipline was higher among males ($M = 0.43$, $SD = 0.59$) than females ($M = 0.32$, $SD = 0.49$), and delinquency at baseline was significantly higher among males ($M = 0.47$, $SD = 0.61$) compared with females ($M = 0.31$, $SD = 0.51$). Age, welfare status, peer delinquency, cultural stress, and school environment were not significantly different across gender.

Measures

Dependent Variable

Exposure to violence: Based on instruments used in examining children and adolescent exposure to violence (Raia, 1995; Richters & Martinez, 1993), this variable represented a youth's degree and type of violence exposure. This measure was weighted such that if the violence happened directly to the youth (e.g., direct exposure), the response was coded as 3; if the violence was witnessed by the youth (e.g., indirect exposure), the response was coded as 2; and if the youth heard about the violence happening to someone she or he knew (e.g., indirect exposure), the response was coded as 1. Higher scores indicated a greater exposure to violence.

Independent Variables

Welfare: Welfare receipt was a dichotomous variable measured using the following item at baseline, "Was any of the household income from welfare or public assistance? I do not mean Social Security." Responses were 1 = *yes* or 0 = *no*.

Age: Age was a continuous measure representing the youths' age at the interview.

Sensation seeking: Based on previous research (Gottfredson & Hirschi, 1990; Russo et al., 1991, 1993), this 10-item measure was included to gauge a youth's preference for thrill- and adventure-seeking behaviors. Higher scores indicated a greater preference for participating in risky behaviors ($\alpha = .72$).

Peer delinquency: Peer delinquency was measured using the youth's responses to several delinquency items asking them about the peers' involvement in these activities ($\alpha = .85$; Loeber et al., 1998). The following is a representative question, "During the past year, how many of your friends have purposely damaged or destroyed other people's things?" Response options included, "only a few or none of them," "about half of them," or "none of them."

Coercive discipline: Coercive discipline was a six-item measure of the youth's perception of the quality of his or her parent(s) disciplining practices (Gottfredson & Hirschi, 1990). The items were based on those provided in Goodman et al. (1998) reflecting the extent of the parent(s)' use of coercive disciplining techniques such as ignoring or acting cold toward the child or adolescent when he or she did something wrong or yelling or swearing at the child or adolescent when he or she did something wrong (Goodman et al., 1998). Higher scores indicated greater use of coercive disciplining practices ($\alpha = .67$).

Cultural stress: Cultural stress has been associated with increased levels of acculturation as well as risk for violence (Soriano et al., 2004). This was a 13-item measure derived from the Hispanic Stress Inventory (Cervantes et al., 1990) with a special focus on acculturation ($\alpha = .78$). Higher values represented a greater experience of cultural stress.

School environment: School environment is a predictor of exposure to violence, as the characteristics of the school (including the behavior of students in the school) may influence violence exposure and perpetration (Campbell & Schwartz, 1996). The school environment was measured using an eight-item scale assessing perceptions of school characteristics (e.g., whether there is poor discipline in the school, kids in gangs; $\alpha = .55$). Higher scores indicated greater negative school characteristics.

Delinquency: The approximately 30 items comprising the Delinquency scale were based on a common self-report delinquency measure (Elliott, Huizinga, & Ageton, 1985). Each question asked the youth to respond as to whether they committed the particular act in the prior year (no/yes). Example items include, “On purpose broken or damaged or destroyed something that did not belong to you?” “Taken something from a store without paying for it?” “Carried a hidden weapon?” “Hit, slapped, or shoved other kids or gotten into a physical fight with them?” “Skip school without an excuse?” “Drunk any beer, wine, or any other liquor?” “Smoked marijuana, weed, pot, or phillies (or blunts)?” and “Attacked someone with a weapon or to seriously hurt or kill them?” The “yes” responses were summed to create a “variety” scale (Hindelang, Hirschi, & Weis, 1981). Higher scores indicated greater involvement in delinquency, and the natural logarithmic transformation was used due to the skewness in this measure.

Analytical Plan

Analyses proceeded in two stages. First, mean difference tests were used to examine possible gender differences in exposure to violence and average covariate values of risk factors by gender. Second, negative binomial regression was used to investigate the relationship between the risk factors and exposure to violence at each time point, stratified by gender. Negative binomial regression was appropriate for the data because the dependent variable (exposure to violence) was count based (Long, 1997). Although the Poisson regression model is the most basic form of the count-based models, it was not suitable due to the overdispersion in the distribution in the exposure to violence measure. Tests for the equality of the risk factor coefficients were also performed to examine the invariance of the measures across gender (Clogg et al., 1995; Paternoster et al., 1998). All analyses were performed in Stata 11.0.

Results

At Time 1, the risk factors for exposure to violence differed by gender (Table 2). For both males and females, older age, higher sensation seeking, peer delinquency, cultural stress, negative school environment, and higher delinquency significantly increased the likelihood of violence exposure. For males only, welfare ($b = 0.25$, $SE = 0.12$, $p < .05$) and coercive discipline ($b = 0.45$, $SE = 0.11$, $p < .001$) were associated with increased exposure to violence. The results from a series of coefficient comparison tests suggested that only the effect of welfare on exposure to violence significantly varied by gender at Time 1.

At Time 2, the predictors of exposure to violence increasingly vary by gender (Table 3). Among both males and females, higher sensation seeking, peer delinquency, and delinquency at baseline continue to predict exposure to violence. However, older age ($b = 0.04$, $SE = 0.03$, $p < .10$) marginally predicted exposure to violence only among males,

whereas coercive discipline ($b = 0.23$, $SE = 0.14$, $p < .05$) and school environment ($b = 0.05$, $SE = 0.02$, $p < .05$) predicted violence exposure only among females. Coefficient comparison tests did not indicate that any of the effects significantly varied by gender at Time 2.

At Time 3, delinquency remained a significant predictor of violence exposure for both males ($b = 0.31$, $SE = 0.11$, $p < .01$) and females ($b = 0.29$, $SE = 0.14$, $p < .05$; Table 4). Sensation seeking was only marginally significant for males ($b = 0.04$, $SE = 0.03$, $p < .10$); however, sensation seeking remained a significant predictor of violence exposure for females ($b = 0.06$, $SE = 0.03$, $p < .05$). Age remained significant only for males ($b = 0.13$, $SE = 0.02$, $p < .001$), and school environment remained a significant risk factor only for females ($b = 0.07$, $SE = 0.02$, $p < .001$). The results from a series of coefficient comparison tests suggested that only the effect of age on exposure to violence significantly varied by gender at Time 3.

Discussion

Exposure to violence has been the source of an emerging area of research across several disciplines, including criminology. Much of this work has focused on the potentially adverse outcomes of violence exposure, but little attention has been paid to gender differences and even less attention to potential differences among Hispanics in the risk factors associated with exposure to violence. This study sought to extend this research by examining the factors associated with exposure to violence, across gender, in a longitudinal sample of Puerto Rican adolescents from the Bronx, New York.

Findings showed that the predictors of violence exposure differed between the genders, and these disparities increased as youth age. When adolescents were younger (e.g., in early adolescence), higher sensation seeking, peer delinquency, cultural stress, negative school environment, and higher delinquency increased the exposure to violence among both males and females. At this time, welfare status and coercive discipline only predicted violence exposure among males.

As adolescents aged, the predictors of violence exposure increasingly diverged between gender groups. At Time 2, sensation seeking, peer delinquency, and delinquency at baseline predicted exposure to violence among both genders. Among females, coercive discipline and school environment predicted violence exposure, whereas only age marginally predicted increased exposure to violence among males. At Time 3, only delinquency at baseline predicted exposure to violence for both gender groups. Sensation seeking and school environment predicted violence exposure among females, whereas age continued to predict exposure among males.

It is quite possible that the relationship observed between delinquency and exposure to violence that is observed consistently over time (while the effect of a number of risk factors are not) is reflective of state dependence and population heterogeneity arguments (Nagin & Paternoster, 1991, 2001) as well as the victim–offender overlap (Broidy et al., 2006; Chen, 2009; Klevens et al., 2002; Loeber et al., 2005; Mustaine & Tewksbury, 2000; Schreck et al., 2008). The risk factors expressed early in the life course may be affecting exposure to violence initially, yet over time the cumulative exposure to violence and the shared commonalities in the risk factors between delinquency and exposure to violence begin to take on prominence. It is important that future research further investigate these issues to better understand the relationship between early risk factors and delinquency–violence exposure relationship.

These findings are also consistent with the literature on gender differences in exposure to violence (Carbone-Lopez et al., 2010; Haynie, Silver, & Teasdale, 2006; Malik et al., 1997; Purugganan et al., 2000; Scarpa, 2001; Stein et al., 2003). We found some differences between genders, and these differences appear to change over time. The risk factors for violence exposure among females cluster at the individual-level (e.g., sensation seeking, cultural stress) and school-level (school environment) characteristics, while demographic factors such as age and welfare status are more salient for males.

These findings highlight the similarities among—and differences between—gender groups' risk of violence exposure. Individual delinquency is a consistent predictor of violence exposure across gender groups and time periods. At younger ages (Times 1 and 2), sensation seeking and peer delinquency appear to increase the odds of violence exposure for both males and females. These findings are consistent with the criminal career literature that finds adolescents aging out of risky behavior (Farrington, 1986; Piquero, Farrington, & Blumstein, 2003, 2007) and that such adolescents may tend to associate with fewer delinquent friends as they age (Giordano, Cernkovich, & Holland, 2003; Warr, 1998). The similarities between gender groups highlight the overlapping mechanisms that may be associated with exposure to violence for males and females. Although the peer- and individual-level constructs (individual delinquency, peer delinquency, and sensation seeking) that are predicting exposure to violence are similar, other factors may influence the differential levels of violent exposure that emerge between genders.

These findings highlight the need to focus on the risk factors specific to Hispanic populations, as the risk factors predictive of exposure to violence among Blacks and Whites do not necessarily relate to exposure among Hispanics. Although increased age and increased school disadvantage were associated with higher exposure to violence among Hispanics, Blacks, and Whites, socioeconomic disadvantage did not predict exposure to violence (Fitzpatrick, 1999; Margolin & Gordis, 2000; Purugganan et al., 2000; Stein et al., 2003). It is apparent that other cultural-specific variables unique to Hispanic populations (e.g., cultural stress and acculturation) may be necessary to understand the unique risk factors for exposure to violence among Hispanics in general and among Puerto Ricans in particular as subgroups of Latinos are often qualitatively distinct (Jennings et al., 2010; Maldonado-Molina et al., 2009, 2010; Pérez, Jennings, & Gover, 2008).

The results of this study should be interpreted in light of some limitations. First, the study included only Hispanics who self-identified as Puerto Ricans and may thus not be generalized to other Hispanic populations. Generally, issues related to crime among Cuban Americans in particular, have been ill-studied (Hamm, 1995; Wilson, Puhmann, & Piquero, 2011). Second, the measure of violence exposure could not evaluate the frequency or duration of violence exposure and so should be assessed in future research. Studies should also examine how risk factors change over time and how these changes influence exposure to violence. Particularly important here would be how changes in neighborhood residence—and thus neighborhood conditions—influence individual's individual outcomes (Kling et al., 2005), including their exposure to violence.

In light of these weaknesses, the current study had a number of strengths. First, this study was able to evaluate the predictors of exposure to violence longitudinally. This design allowed for an assessment on intraindividual change in exposure to violence over time, and there is greater confidence that the risk factors preceded such exposure. Furthermore, the design revealed that the strong association between exposure to violence and delinquency persisted over time for both males and females while the relative influence of risk factors waned. This finding suggests that these two behaviors are intrinsically linked and it is likely that their shared commonality in risk factors largely explains the strong association that is

evident longitudinally. Second, the demographic group in this study (young Puerto Ricans) has been traditionally overlooked in the violence literature, which has historically focused on Black and White youth. Finally, the dependent variable (violence exposure) allowed us to weight violence exposure by the distance between the youth and the exposure (involved, witnessed, or heard about the violence).

In sum, this study sought to identify the risk factors for exposure to violence among young Hispanics living in the Bronx, New York. Some risk factors emerged as being similar across genders (e.g., sensation seeking, coercive discipline, peer delinquency, and delinquent behavior), whereas others differed (e.g., older age and welfare increased the risk among males, while school environment increased risk only for females). The risk factors for exposure to violence also appear to vary over time. Findings from this study have important implications for preventive programming, as gender-specific curricula may be appropriate given the disparities in a few of the risk factors between males and females. Moreover, the results call more generally for a more systematic study of how individuals interpret violence exposure and why some individuals who are exposed to violence react in adverse ways while others similarly exposed shrug it off. This will provide important information for intervention approaches as well.

Acknowledgments

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was supported by the National Institute of Mental Health through Grants RO-1 MH56401 (Dr. Bird, principal investigator), P20 MD000537-01 (Dr. Canino, principal investigator) from the National Center for Minority Health Disparities, and K01-AA017480 from NIAAA to Dr. Maldonado-Molina (principal investigator).

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Figure 1.
Gender differences in exposure to violence

Table 1Sample Summary Statistics and Mean-Difference Tests ($n = 1,138$)

Baseline variables	Males ($n = 589$)		Females ($n = 549$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Welfare	0.45	—	0.46	—
Age (T1)	9.45	2.59	9.57	2.55
Age (T2)	10.51	2.49	10.51	2.42
Age (T3)	11.33	2.44	11.41	2.38
Sensation seeking ****	4.18	2.56	3.03	2.35
Peer delinquency	0.22	0.35	0.25	0.36
Coercive discipline ****	0.43	0.59	0.32	0.49
Cultural stress	0.12	—	0.11	—
School environment	3.26	2.98	3.35	3.12
Delinquency (T1) (ln) ****	0.47	0.61	0.31	0.51
Exposure to violence (T1) **	4.48	6.16	3.69	5.47
Exposure to violence (T2) ****	3.83	5.94	2.85	4.57
Exposure to violence (T3) ****	3.59	5.86	2.62	4.32

*
 $p < .10$.**
 $p < .05$.***
 $p < .01$.****
 $p < .001$.

Table 2

Negative Binomial Regression Results: Predicting Exposure to Violence at Time 1 With Baseline Covariates by Gender

	Males (n = 589)	Females (n = 549)
Baseline variables	b (SE)	b (SE)
Welfare	0.25 (0.12) ^{***a}	−0.11 (0.13)
Age (T1)	0.09 (0.03) ^{****}	0.05 (0.03) ^{**}
Sensation seeking	0.08 (0.03) ^{****}	0.10 (0.03) ^{****}
Peer delinquency	0.35 (0.17) ^{**}	0.55 (0.19) ^{****}
Coercive discipline	0.45 (0.11) ^{****}	0.15 (0.14)
Cultural stress	1.09 (0.50) ^{**}	0.69 (0.54) [*]
School environment	0.04 (0.02) ^{**}	0.06 (0.02) ^{****}
Delinquency (T1) (ln)	0.44 (0.10) ^{****}	0.39 (0.13) ^{****}
Model diagnostics		
Log likelihood	−1,419.31	−1,224.68
Likelihood-ratio chi-square	109.35 ^{****}	73.13 ^{****}

^aIndicates significant coefficient difference.

^{*}
 $p < .10$.

^{**}
 $p < .05$.

^{***}
 $p < .01$.

^{****}
 $p < .001$ (one-tailed).

Table 3

Negative Binomial Regression Results: Predicting Exposure to Violence at Time 2 With Baseline Covariates by Gender

	<u>Males (n = 589)</u>	<u>Females (n = 549)</u>
Baseline variables	<i>b</i> (SE)	<i>b</i> (SE)
Welfare	0.09 (0.13)	0.02 (0.14)
Age (T2)	0.04 (0.03) *	0.02 (0.03)
Sensation seeking	0.06 (0.03) **	0.07 (0.03) **
Peer delinquency	0.29 (0.18) **	0.39 (0.22) **
Coercive discipline	0.01 (0.12)	0.23 (0.14) **
Cultural stress	0.27 (0.50)	0.33 (0.55)
School environment	0.02 (0.02)	0.05 (0.02) **
Delinquency (T1) (ln)	0.21 (0.11) **	0.37 (0.14) **
Model diagnostics		
Log likelihood	-1,380.62	-1,125.92
Likelihood-ratio chi-square	25.22 ****	40.58 ****

^a Indicates significant coefficient difference.

* $p < .10$.

** $p < .05$.

*** $p < .01$.

**** $p < .001$ (one-tailed).

Table 4

Negative Binomial Regression Results: Predicting Exposure to Violence at Time 3 With Baseline Covariates by Gender

	Males (<i>n</i> = 589)	Females (<i>n</i> = 549)
Baseline variables	<i>b</i> (<i>SE</i>)	<i>b</i> (<i>SE</i>)
Welfare	0.06 (0.13)	−0.09 (0.13)
Age (T3)	0.13 (0.02) **** ^a	0.01 (0.03)
Sensation seeking	0.04 (0.03) *	0.06 (0.03) **
Peer delinquency	0.09 (0.21)	0.09 (0.20)
Coercive discipline	−0.01 (0.12)	0.10 (0.13)
Cultural stress	0.19 (0.45)	0.38 (0.51)
School environment	0.02 (0.02)	0.07 (0.02) ****
Delinquency (T1) (ln)	0.31 (0.11) ***	0.29 (0.14) **
Model diagnostics		
Log likelihood	−1,329.19	−1,106.98
Likelihood-ratio chi-square	51.77 ****	40.26 ****

^aIndicates significant coefficient difference.

*
p < .10.

**
p < .05.

p < .01.

p < .001 (one-tailed).