

Neighborhood Disorganization, Substance Abuse and Youth Violence among Adolescents in Puerto Rico

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TABLE 4

Multiple Logistic Regression (Table 4) analysis revealed the following results; males (OR=1.9, CI=1.3-2.8) and those who use alcohol (OR=1.8, CI=1.1-3.1) and illegal drugs (OR=6.2, CI=1.1-36.0) are more likely to engage in violent behaviors (Table 4). Neighborhood social disorder was significantly associated with youth violence. Adolescents who saw someone carrying a weapon (OR=2.1, CI=1.3-3.3) and those who saw their neighbors trafficking drugs (OR=1.9, CI=1.2-3.0) were significantly more likely to engage in violent behaviors. In relation to neighborhood physical disorder, the presence of abandoned vehicles in the neighborhood was associated with violent behaviors (OR=1.9, CI=1.2-3.1). In contrast; the presence of graffiti, abandoned buildings and shooting galleries in the neighborhood were not significantly associated with violent behaviors.

TABLE 3

Table 3 shows the prevalence of youth violence by sociodemographics, family substance abuse and neighborhood disorganization. In terms of sociodemographics, violent adolescents were more likely to be males, 14 to 15 years of age and out of school. Regarding substance use, adolescents who used drugs or alcohol were significantly more likely to report violent behaviors. In the neighborhood social disorder domain, almost all the variables were statistically significant. Adolescents who have seen someone carrying a weapon, seen neighbors selling drugs or stolen merchandise, heard gun fire, or needed to run when other people have begun to shoot were significantly more likely to report violent behaviors themselves. Vandalism in the neighborhood was the only variable in the social disorder domain that didn't reach statistical significance. In the physical disorder domain, the presence of shooting galleries and abandoned vehicles in the neighborhood were associated with violent behaviors.

Table 3. Distribution of youth violence by sociodemographics, family substance use and neighborhood social and physical disorders (N=691)

Variable	Youth Violence		
	%	OR	95% CI
Sociodemographics			
Gender			
Female	26.7	1.0	1.1-2.1
Male	35.7	1.5	
Grade			
Elementary	31.9	1.0	
Middle	36.5	0.7	0.5-1.1
High School	29.4	1.0	0.6-1.8
Age			
12	23.0	1.0	
13	29.2	1.4	0.8-2.3
14	34.7	1.8	1.1-2.9
15	36.8	2.0	1.2-3.3
Being in school			
No	61.5		
Yes	30.5	0.3	0.09-0.85
Substance abuse among the family			
Father drug use**			
Negative	30.8		
Positive (at least one)	33.9	1.1	0.7-2.0
Mother drug use**			
Negative	30.9		
Positive (at least one)	32.1	1.1	0.7-1.6
Adolescent drug use**			
Negative	30.6		
Positive (at least one)	63.6	3.9	1.1-13.7
Adolescent alcohol use (last year)			
No	26.9		
Yes	51.2	2.9	1.9-4.3
Neighborhood social disorder			
I have seen someone carrying a weapon I needed to run when other people have begun to shoot			
Yes	41.6	3.1	2.2-4.5
Seeing your neighbors selling drugs			
Yes	41.8	2.4	1.7-3.4
Hearing gun fires in your neighborhood			
Yes	48.6	2.6	1.8-3.7
Seeing people selling stolen merchandise			
Yes	38.9	1.7	1.2-2.4
Vandalism in my neighborhood			
Yes	40.8	2.0	1.4-2.9
Yes	31.7	1.0	0.7-1.5
Neighborhood physical disorder			
Shooting galleries in the neighborhood			
Yes	36.9	1.4	1.0-2.1
Graffiti in the neighborhood			
Yes	34.7	1.2	0.9-1.8
Abandoned buildings			
Yes	29.1	0.9	0.5-1.5
Abandoned vehicles			
Yes	40.4	2.4	1.6-3.5

** Saliva Drug Tests: THC, benzos, methamphetamines, barbiturates, cocaine, opiates

Conclusions

This study suggests that reducing neighborhood social disorder may be efficacious in preventing youth violence and delinquent behaviors as well as their associated consequences.

Neighborhood characteristics are potentially modifiable and thus important when considering both primary and secondary prevention of youth violence. The neighborhood social disorder domain identified was strongly associated with violent behaviors by youth in this cohort is a potential target for public health interventions. Decreasing the degree to which a community is burdened by threatening or hostile behavior by adults and increasing the presence of supporting adults who are willing to intervene in the lives of their community's adolescents could positively alter the social dynamics that currently contribute to delinquency and youth violence in our neighborhoods.

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Introduction

Delinquent behavior and youth violence are common public health problems, affecting individuals, families, and communities in multiple sites and populations around the world. In Puerto Rico, adolescents from poor neighborhoods are exposed to increasingly prevalent violence in their homes and communities. This exposure to violence has been associated with youth's own patterns of violent behavior (Brenner et al., 1999; Herrenkohl et al., 2000; Molnar et al., 2004; Reyes et al., 2004). Moreover, data from the Youth Risk Behaviors Survey of the CDC shows that the percentage of students who were injured in a physical fight and had to be treated by a physician is increasing within the adolescent population in Puerto Rico (Kann et al., 1996). The prevalence of violent behaviors such as physical fighting (30.8%) and weapon carrying (16.1%) remain very high within this population (YRBS, 2003).

Levels of social and physical disorganization and the presence of crime and drugs are two features of urban neighborhoods that are associated with fear of victimization, delinquency and violent behaviors (Molnar et al., 2004; Li et al., 1999). When people behave in public spaces in ways that are considered threatening, these behaviors constitute social disorder. Examples include interactions such as drug dealing, drug use, prostitution, loitering, or alcohol intoxication. In contrast, physical disorder describes the environmental deterioration of urban landscapes, such as abandoned properties, graffiti, shooting galleries and discarded drug paraphernalia and condoms.

This study sought to identify neighborhood social and physical disorganization elements associated with youth violence in poor communities of the San Juan metropolitan area in Puerto Rico.



Methods

A total of 691 drug-using (n=150) and non-drug-using parents (n=541) and offspring (n=691) residing in poor neighborhoods comprise the study sample. This sample was selected from census blocks surrounding identified copping areas (outdoor drug-selling areas). Parents and their offspring were interviewed using a self-administered questionnaire and a computer-assisted personal interviewing program. The Spanish version of the Composite International Diagnostic Interview (CIDI) assessed substance abuse and depression among parents. Drug use was corroborated through saliva tests to test the presence of cocaine, amphetamines, morphine and THC. A delinquent behavior index was calculated from 14 questions regarding behaviors over the past 12 months (e.g. carrying a weapon, hitting a teacher, belonging to a gang, selling drugs, threatening to hurt someone or physically attacking someone). The neighborhood environment was measured with questions designed by researchers for the Puerto Rico Drug Users in New York and Puerto Rico: HIV Risk Behavior Determinants (R01 DA 10425). Neighborhood social disorganization includes: hearing gun fire in the neighborhood, neighbors selling stolen merchandise and drugs, neighbors using alcohol and drugs and people carrying weapons. Neighborhood physical disorganization includes: abandoned vehicles and buildings, graffiti and shooting galleries in the neighborhood.

Results

Table 1 shows a description of the study sample. Participants were 352 (50.9%) females and 339 (49.1%) males. Almost 50% of the sample was age 14 to 15 years old (49.2%) and more than 50% were between seventh and eighth grade (52.6%). The grades with lower percentages of participants were third (0.1%), fourth (1.6%) and 11th-grade (2.4%). The living arrangement for the majority of participants was with a single parent (54.6).



TABLE 1

Table 1. Sociodemographic characteristics of the study sample (N=691)

	n	%
Gender		
Male	339	49.1
Female	352	50.9
Age		
12 yrs	139	20.1
13 yrs	212	30.7
14 yrs	196	28.4
15 yrs	144	20.8
Grade		
3rd	1	0.1
4th	11	1.6
5th	26	3.9
6th	56	8.3
7th	161	23.9
8th	193	28.7
9th	117	17.4
10th	92	13.7
11th	16	2.4
Family Composition		
single parent		
No	314	45.4
Yes	116	54.6

Analysis

Frequency distributions and descriptive statistics were used to describe the study sample. Youth violence was calculated from 14 questions asked regarding the prior 12 month period. Bivariate analyses using chi-square tests of independence were used to examine the association between youth violence, sociodemographic characteristics and neighborhood disorganization. Finally, a multiple logistic regression model was fitted to assess the effects of neighborhood social and physical disorganization on youth violence after adjusting for sociodemographics and other covariates. All the statistical analyses were performed using SPSS version 12 (2003).



TABLE 2

Table 2 shows a distribution of the violent and delinquent behaviors among adolescents of the sample. From a total of 691 adolescent participants, the overall youth violence prevalence was 31.2%. About 27% of the sample reported initiating a physical fight. Table 2 also shows that 5% of the participants reported tried to wound someone physically, 4.1% have damaged school property, 2% were gang members, 1.5% hit a teacher, 1.4% have been arrested, 1.2% hurt someone that required medical treatment and 1.1% carried a gun during the last year. Less than 1% of the study sample reported using a weapon during a fight, forcing someone to have sexual relations with them, carrying a weapon to school, selling drugs, or stealing a vehicle.

Table 2. Prevalence of delinquent and violent behaviors among adolescents of the study sample (N=691)

Violent Behaviors	n	%
During a fight, did you threw first		
No	507	73.4
Yes	184	26.6
During a fight, tried to wound someone physically in some other way		
No	549	95.0
Yes	29	5.0
Have damaged school property on purpose		
No	624	95.9
Yes	27	4.1
Have belonged to a gang		
No	639	98.0
Yes	13	2.0
Hit a teacher		
No	641	98.5
Yes	10	1.5
Have been arrested		
No	642	98.6
Yes	9	1.4
Hurting someone so badly that medical treatment was required		
No	642	98.8
Yes	8	1.2
Carrying a gun		
No	673	98.9
Yes	7	1.1
Have used a knife or a weapon during a fight.		
No	572	99.1
Yes	5	0.9
Have forced someone to have sexual relations with you		
No	571	99.1
Yes	5	0.9
Have carried a weapon to school		
No	647	99.2
Yes	5	0.8
Have assaulted, snatched a purse, threatened or wounded someone in order to steal from him/her		
No	572	99.5
Yes	3	0.5
Have sold drugs		
No	647	99.5
Yes	3	0.5
Have stolen or tried to steal a vehicle		
No	648	99.5
Yes	3	0.5

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