UCLA
UCLA Previously Published Works

Title

Individual- and Neighborhood-Level Determinants of Fear of Violent Crime Among Adolescents.

Permalink

https://escholarship.org/uc/item/0g96633v

Journal

Family & community health, 39(2)

ISSN

0160-6379

Authors

Grinshteyn, Erin G
Eisenman, David P
Cunningham, William E
et al.

Publication Date

2016-04-01

DOI

10.1097/fch.0000000000000095

Peer reviewed

eScholarship.org Powered by the California Digital Library
University of California

Title: Individual- and Neighborhood-Level Determinants of Fear of Violent Crime among Adolescents

Authors: Erin G. Grinshteyn, PhD, MS[a], David P. Eisenman, MD, MSPH[b], William E. Cunningham, MD, MPH[c], Ronald Andersen, PhD[d], Susan L. Ettner, PhD[c]

[a] School of Community Health Sciences
University of Nevada, Reno / 0274
Reno, Nevada 89557-0274 USA
egrinshteyn@unr.edu

[b] Division of General Internal Medicine
David Geffen School of Medicine at University of California, Los Angeles (UCLA)
UCLA Center for Public Health and Disasters, Department of Community Health Sciences,
UCLA Fielding School of Public Health
911 Broxton Avenue
Los Angeles, California 90024 USA
deisenman@mednet.ucla.edu

[c] Division of General Internal Medicine and Health Services Research
David Geffen School of Medicine at University of California, Los Angeles (UCLA)
Department of Health Policy and Management, UCLA Fielding School of Public Health
911 Broxton Avenue
Los Angeles, California 90024 USA
Cunningham: wcunningham@mednet.ucla.edu; Ettner: settner@mednet.ucla.edu

[d] Department of Health Policy and Management
UCLA Fielding School of Public Health
650 Charles Young Drive South
31-269 CHS Box 951772
Los Angeles, CA, 90095-1772 USA
randerse@ucla.edu

Corresponding Author:
Erin Grinshteyn, PhD
School of Community Health Sciences
University of Nevada, Reno / MS 0274
Reno, Nevada 89557-0274
Phone: 775.682.7098
Fax: 775.784.1340
Email: egrinshteyn@unr.edu

Acknowledgements: All authors who made a significant contribution to the work that resulted in this paper were listed as authors. The authors would like to thank David Hemenway, PhD for his assistance and guidance throughout this research.

Dr Cunningham's and Dr. Ettner's time was partly supported by the NIH/National Center for Advancing Translational Science (NCATS) UCLA CTSI Grant Number UL1TR000124. Dr. Grinshteyn was partly supported by the AHRQ predoctoral fellowship.

There are no potential conflicts for any of the authors.

Abstract:

Purpose:	Fear of violent crime may be common among adolescents in urban settings, however little is known about individual- and neighborhood-level determinants of fear in this population. The purpose of this research is to identify these determinants among urban adolescents.
Methods:	A generalized ordered logit model was used to analyze individual- and neighborhood-level variables among 2,474 adolescents aged 11-17 years. Marginal effects (i.e., the percentage point change from the baseline prevalence) are presented.
Results:	One quarter of the adolescents in this sample were very afraid of neighborhood crime, almost half were a little afraid, and one third were not afraid. The majority of adolescents saw (43%) or experienced (44%) violence personally. Seeing violence significantly reduced the probability of feeling unafraid (ME: -0.09, p=0.003). Older age, male sex, and higher income were all associated with increased likelihood of feeling unafraid. Higher levels of social disorder were significantly associated with reductions in feeling unafraid (ME: -0.44, p=0.03). Neighborhood police visibility was strongly connected with fear. The more block faces where police were visible, the higher the probability of feeling unafraid (ME: 0.87, p<0.0001) and lower the probability of feeling very afraid (ME: -0.77, p=0.01).
Conclusions:	Policy aimed at reducing fear of violent crime could affect more people than those targeting actual crime. Fear reduction strategies should target those who are most at risk of becoming fearful of neighborhood victimization. Community policing could be a strategy for fear reduction as these data suggest that police visibility is protective against fear of neighborhood crime.

Key Words: Fear, Crime, Adolescent, Neighborhood, Violence, Reduced Form Model

Implications and Contribution

In contrast to existing literature, which focused almost exclusively on adults, this study examines determinants of fear of violent crime among adolescents. Also, the dataset used for this research includes objectively measured neighborhood-level determinants of crime instead of just respondent-reported neighborhood characteristics, which were the focus of prior studies.

Introduction

Fear of crime has been described as an emotional reaction exemplified by a sense of danger and anxiety related to perceived physical harm [1];[2]. Potential consequences of fear include behavioral changes [2];[3] as well as both physical [4];[5];[6] and behavioral health outcomes [4];[7] for the individual and deterioration of the neighborhood [8];[2]. The behavioral health consequences of fear include mistrust of others, avoidance, depression, anxiety, oppositional defiance disorder and conduct disorder [4, 9-12]. Behaviorally, fearful individuals are more likely to avoid neighborhood exposure, which has a lasting impact on the individual and the neighborhood with resulting changes to transportation patterns, physical activity, and social interaction [3, 8, 13, 14]. Avoiding transportation can lead to lower rates of employment, a reduction in physical activity can lead to higher rates of obesity and related illnesses, and lacking social interaction can lead to adverse behavioral health consequences[4, 15, 16].

Although most outcomes of fear are negative, some behavioral changes have positive outcomes. Seeking better home and personal protection, insurance behavior that alters the consequences of a negative event, sharing information with others and the resulting better communication, and participation with others to prevent crime are hypothesized to be positive outcomes related to feeling fearful [14]; [2]. Overall, however, fear leads to more negative than positive outcomes for both the individual and the neighborhood.

A person's level of fear is largely determined by perceived rather than actual risk. While fear is generally modeled on risk of victimization, individuals are not good at estimating risk--perceptions and actual risk are not closely correlated [3];[17]. The most fearful (e.g., older women) are often least at risk of actual victimization; fear may lead to an additional lowering of actual risk if it makes them more cautious [3];[17]. Adolescents may be worse than adults at determining victimization risk due to inexperience and generally immature stage of emotional development. Since fear of victimization appears to be a problem somewhat independent of crime rates, and given the effect of fear on creating unhealthy environments as discussed above, policy makers should "explore ways to reduce fear independent of policies directed at reducing the incidence of crime" [18] in an effort to create policies that will promote healthy communities through fear reduction. Focusing only on crime reduction will result in an incomplete benefit.

In studies largely examining adult populations, personal characteristics [19]; [20]; [21] and neighborhood context [22]; [23]; [24]; [25] have been identified as contributing factors in how fearful of crime a person is. Personal characteristics include perceived physical vulnerability and reduced social support [2]; [26]; [27]. Neighborhood characteristics associated with fear include poorly lit spaces while neighborhoods composed of mixed-use development are often viewed as

safer [28, 29].

If the nation is going to make communities healthy and safe for adolescents, we need to understand the individual- and neighborhood-level determinants of fear of crime. Little is known about how individual and neighborhood factors combine among adolescents to produce fear. Most analyses that include neighborhood information are based on asking the subject questions about the neighborhood. Those that do include neighborhood-level data measured by researchers have been infrequent and limited with respect to the amount of neighborhood-level data that was included ([9];[18]). This article addresses gaps in the literature by including a comprehensive set of individual-level variables and a number of neighborhood-level variables (measured by researchers in the neighborhood and not by subject assessment) to assess predictors of fear among adolescents. Hypotheses regarding factors influencing fear were derived by developing a conceptual model (see Appendix A) and are reflected in the choice of predictors in the regression model.

Methods

Sources of Data The data for these analyses were obtained from The Project on Human Development in Chicago Neighborhoods (PHDCN), a longitudinal study that includes four waves of data (i.e., baseline assessment and three follow-up waves) carried out from 1994 through 2001 [30]. This dataset has been described in more detail elsewhere [31]. This study collected data on adolescents, their families, schools, and neighborhoods to assess relationships between variables while taking into account individual characteristics and environmental attributes. Over 6,000 children and adolescents in these neighborhoods were randomly selected to participate. Surveys were administered to adolescents and their primary caregiver. Researchers drove up and down block faces in neighborhoods throughout Chicago coding each neighborhood objectively on numerous indicators related to their social, physical, and economic characteristics. The specific datasets used for this study linked the Longitudinal Cohort Study (comprised of the adolescent and caregiver survey data) with the Systematic Social Observation data (comprised of the neighborhood-level data collected by researchers). Adolescents in Waves Two and Three of the Longitudinal Cohort Study were included. These data from the last two waves of follow-up were pooled together to create one sample. The unique nature of having researcher collected neighborhood-level variables (instead of self-reported neighborhood conditions) makes this dataset relevant.

A three-stage sampling design that assured the sample was representative of the city of Chicago was employed to choose neighborhoods, blocks, and residents in the Longitudinal Cohort Study [30]. The Systematic Social Observation study aggregated information at the block face level (i.e., one side of a street contained between consecutive structures, which are usually other streets) with a total of 15,141 block faces in 80 neighborhood clusters. Neighborhood cluster was the unit of measurement for neighborhood-level variables [32]. Four cohorts of adolescents ranging from almost 11 to 17 years of age in two different waves of data were included in these analyses. These cohorts were the only ones that had all measures available and allowed for an adequate sample size. The measures were not always repeated for the available cohorts across waves, prohibiting longitudinal analysis. All cohorts were pooled into a single sample. The final sample size based on the age groups and available measures was 2,474.

Measures The dependent variable, fear of violent crime, was measured with the following item asked of all respondents: "How afraid are you that you might be hurt by violence in your neighborhood?" The response categories were: not afraid, a little afraid, or very afraid. Independent variables (including characteristics of the individual, caregiver and neighborhood) were chosen based on a conceptual model (see appendix) and are listed in Table 1. Adolescents were categorized as cohorts that were followed so the cohort group number represents the age that they were at first assessment and not at the current assessment, i.e., if they were enrolled at age 9 during Wave 1 then they were in "Cohort 9" but were approximately 11 years old in Wave 2 and 13 years old in Wave 3. Ages are listed in Table 1 in parentheses. Exposure to violence is a hierarchical variable that assessed an adolescent's exposure to violence by assigning them to only one of the following categories: no exposure to violence, knew about violence happening to another person, saw violence happen to another person, experienced violence personally. The categories of exposure were mutually exclusive and adolescents were assigned the worst exposure that they had experienced. For example, if they knew about violence happening to someone else and also saw violence happen to another person, they were assigned into the "saw violence" category as that is considered to be the worse exposure. Physical disorder, social disorder, and physical decay are PHDCN created scales. Physical disorder includes ten items representing evidence of disorder based on elements external to the physical environment such as garbage in the street, empty beer bottles in streets, graffiti, and syringes on sidewalks or in gutters. Higher scores represents more physical disorder [32, 33]. Physical decay assesses characteristics intrinsic to actual structures including the physical condition of residential units and recreational facilities, abandoned housing, and condition of commercial buildings. This scale is comprised of six items with higher scores representing more decay. Social disorder is a seven items scale and includes items such as prostitutes, intoxicated people, and gang members visible on the block face; Higher scores represent more social disorder [34].

Statistical Analysis As the dependent variable is categorical with a natural ordering and preliminary tests indicated that the "parallel lines" assumption required for ordered logistic regression was violated, multivariate analyses employed a generalized ordered logit model. Marginal effects along with their standard errors and p-values are presented. Marginal effects represent the absolute, or percentage point, differences in the probability of being in each outcome category associated with a one-unit increase in the predictor, e.g., from 0 to 1 for a dichotomous indicator. As an example, suppose the baseline probability of being very afraid is .24 (24% of the sample is very afraid) and the marginal effect of having experienced violence is .03. This means that having experienced violence is associated with a three percentage point increase in the probability of being very afraid, from .24 to .27. (The *percent* increase in the probability of the outcome would be .03/.24 = 12.5%.)

Missing data were singly imputed (i.e., regressions were run on only one imputed dataset), although complete-case analysis (i.e., deleting any observation with missing data) yielded largely similar results. Although multiple imputation is preferred on theoretical grounds [35], it was not possible to use multiple imputation with generalized ordered logit models in Stata 12.0. Thus, analyses were run on a single imputed dataset, which may provide standard errors that are slightly smaller than they should be. However, sensitivity analysis comparing single to multiple imputation using a dichotomized version of the dependent variable (no fear vs. any fear) showed

that the qualitative conclusions remained unchanged.

All analyses were performed using Stata 12.0 [36]. All research was approved by the UCLA IRB.

Results

Descriptive statistics for all variables used in the models are presented in Table 1. One quarter (.24, or 24%) of the adolescents in this sample were very afraid of neighborhood crime, 44% were a little afraid, and one third (.33) were not afraid at all. The vast majority of adolescents saw (.43) or experienced (.44) violence personally. Although there are few Asian or Native American adolescents, there are sizeable white, black, and Latino populations in the sample. There is also a good mix of income both in terms of personal income and neighborhood-level SES groupings. Most primary caregivers are female and while the majority is either married or living with a partner, many are single or separated, widowed, or divorced.

[Insert Table 1 Here]

Estimates from the generalized ordered logit model of fear of violent crime are presented in Table 2. For brevity, only statistically significant estimates are shown in the table (non-significant predictors are listed in the footnote). Each estimate represents the marginal effect of the predictor on the probability that the adolescent will experience the given level of the fear shown in the column header (respectively not afraid, a little afraid and very afraid).

[Insert Table 2 Here]

Many individual-level and some neighborhood-level determinants were significantly associated with the fear outcome. For example, violence exposure increases levels of fear among adolescents. The marginal effect of knowing about violence compared to no experience with violence was not significant for any of the levels of fear. However, seeing violence (when compared to no experience of violence) significantly reduced the probability of feeling unafraid in their neighborhood (ME: -0.09, p=0.003). Thus, on average, adolescents who saw violence happen to another person saw their chances of being unafraid in their neighborhood decrease significantly from the baseline prevalence of .33 to .24 (-9 percentage points). This absolute reduction corresponds to a relative (percent) reduction of 27% (.09/.33 = .27). For those who experienced violence, there was a reduction of seven percentage points in the chances of being unafraid in their neighborhood (ME: 0.07, p=0.02), from the baseline prevalence of .33 to .27, reflecting a 21% relative decrease (.07/.33 = .21).

Sociodemographic characteristics were significantly associated with fear of violent crime. The older the adolescents, the more likely they were to be unafraid and the less likely they were to be very afraid when compared with the youngest cohort. Girls were five percentage points less likely than boys to feel unafraid (ME=-0.05, p=0.001) and significantly more likely to be very afraid (ME=0.10, p<0.0001). Adolescents in the two highest household income brackets were significantly more likely to feel unafraid and less likely to feel very afraid in their neighborhood than those in the lowest household income bracket, even after controlling for a host of covariates

including neighborhood SES. Latino adolescents were significantly less likely to feel unafraid and a little afraid and more likely to feel very afraid when compared with white adolescents (ME= -0.07, p=0.01, ME=-0.15, p=0.004, and ME=0.21, p<0.0001, respectively). Those employed during the prior year had a seven percentage point lower likelihood of feeling very afraid (ME = -0.07, p=0.002).

Relative to adolescents expecting to achieve a high school education or less, those expecting to attend or graduate from college had a eight percentage point higher likelihood of feeling unafraid (ME=0.08, p=0.05 for some college; ME=0.07 and p=0.04 for college graduate or more), even after controlling for covariates such as household income, neighborhood SES, and a host of other potentially important covariates. Those expecting to graduate from college also had a six percentage point lower probability of feeling very afraid (ME= -0.06, p=0.01).

Adolescents whose caretaker was married or living with a partner had a five percentage point lower probability of feeling unafraid and a seven percentage point increase in the probability of feeling a little afraid.

Although the effects of neighborhood physical disorder and physical decay were not significant, the other neighborhood-level characteristics all had significant associations with fear of violent crime even after controlling for all other individual- and caregiver-level variables in the model. Increases in the social disorder scale were associated with reductions in feeling unafraid with respect to neighborhood fear (p=0.03); to illustrate the magnitude of the effect, an increase in social disorder from the minimum value observed in the sample (0.00) to the maximum observed value (0.31) would reduce the likelihood of feeling unafraid by about 14 percentage points.

Police visibility in one's neighborhood was the neighborhood predictor most strongly connected to fear. The more block faces where the police were visible, the higher the adolescent's probability of feeling unafraid and the lower the probability of feeling very afraid.
For example, if police visibility went from zero (the minimum observed value, representing neighborhoods with no visible police) to .29 (the maximum observed value, representing neighborhoods where police were visible on almost one-third of block faces), the likelihood of feeling unafraid would increase by 26 percentage points and the likelihood of feeling very afraid would decline by 23 percentage points.

Discussion

Consistent with existing literature, we found that adolescent girls and younger adolescents are more likely to be very afraid than adolescent boys and older adolescents. Despite the fact that both females and younger children are less likely to be victimized than older adolescents and males, it is likely that females and younger children have a greater perceived vulnerability thus are more fearful about the possibility of victimization. Youth with higher income are less likely to be very afraid in their neighborhood even after controlling for neighborhood cluster socioeconomic status. Adolescents who do not expect to attain more than a high school diploma are also more plagued by fear. The mechanism through which these covariates work is not clearly understood however they are indicators that should be examined more carefully in future

research. Perhaps higher income makes adolescents feel more secure at home, which could translate to feeling more secure outside the home. Perhaps educational expectation is just a proxy for self-efficacy and those who expect that they can achieve more academically may just feel more competent than those who do not expect higher educational attainments, which could also translate into feeling safer because they feel more confident in their ability to deal with adversity. These topics should be examined in future research.

Prior victimization is significantly associated with experiencing some neighborhood fear. Witnessing violence and experiencing violence have equally large and significant effects; both are significantly associated with a lower likelihood of feeling no fear and increased probability of feeling a little fear, although in the case of experiencing violence, the association with feeling a little fear was only marginally significant, perhaps due to small numbers and low power.

A less consistent finding relates to caretaker marital status. Adolescents whose caretakers are married or living with partners were less likely to feel unafraid and more likely to experience a little fear. One hypothesis is that for those who live in families with partners who are violent, that living environment could lead to more fear both inside and outside of the home, which would negate the usual assumption of security in a household with more than one caretaker. However, this result warrants further examination in future research.

Two neighborhood characteristics -- social disorder (e.g., visible prostitution, drug sales) and police visibility -- were associated with neighborhood fear. The strongest associations were seen with police visibility, which was significantly associated with an increased probability of feeling unafraid and a decreased probability of feeling very afraid. We found fewer strong associations between neighborhood predictors and fear than earlier studies based on adults, which could be because neighborhood factors affect adolescents differently than they affect adults. Previous research examined physical disorder among adults [8]; [33]. Perhaps adolescents are not affected in the same way by occurrences of graffiti or litter. It is possible that adolescents who have never known anything except their current neighborhood conditions are not as bothered by incivilities as adults who have some degree of familiarity with areas that have fewer incivilities. It is also possible that relative lack of variance among neighborhood-level characteristics in this dataset make it difficult to find even a strong relationship. Finally, earlier studies relied on self-reported neighborhood conditions rather than objective assessments, which could have led to bias (overstating the associations with fear of violent crime) if subjects who were afraid were more likely to describe their neighborhood in negative terms.

Several limitations must be mentioned. The results may not be generalizable nationally, as these data come from one urban city. Fear of violent crime among adolescents in Chicago may be different from other cities and are almost certainly different from non-urban areas. In addition, while the PHDCN is a rich data source with an enormous amount of information, some variables may not be well measured. While the data come from a longitudinal dataset, these data could not be analyzed longitudinally due to the nature of which variables were collected at each time point.

In the past two decades, while crime has decreased, fear of crime has increased (13)— levels of fear and actual crime rates are often quite disparate ([37];[17]). This is why fear could affect more people than policies aimed at reducing actual crime, as fear of violent crime is more

widespread than actual victimization. Reducing fear could also change behavior in ways that reduced actual crime. Fear reduction should be addressed in addition to crime prevention and not just treated as a positive externality of crime prevention efforts.

Fear reduction strategies could target those who are most at risk of becoming fearful. Our results lend support for the fact that not only violent victimization but witnessing violence has an effect on fear among adolescents. Fear reduction programs should be developed not only for adolescents who have been victimized, but those exposed to violence.

Community policing could address fear reduction. Police visibility appears to be protective against neighborhood fear and could be a component in a comprehensive fear reduction strategy. Indeed, community policing has been found to be an effective method of fear reduction [38]. Specifically, two components of community policing have been shown to reduce fear among residents. First, in a quasi-experimental design using neighborhoods with the same demographic and criminality characteristics, community policing programs that employed foot patrols were effective in reducing fear among residents. In Houston and Newark, programs that increased police officer foot patrols in neighborhoods resulted in feeling safer ([14]; [39]). The other component is increasing interaction between residents and officers, accomplished in part through foot patrols. More generally, police interactions with residents in these quasi-experimental designs have shown that citizen contact patrol, community stations, and coordinated policing between police and residents have led to decreased fear by increasing communication between police and residents [38];[40]; [8].

Despite the substantial public health implications resulting from fear of violent crime, this issue has been mostly ignored by the public health community. In this study we find high levels of fear among Chicago adolescents. Fear among these youth is especially likely for the younger teens, among girls, and for both victims and witnesses of violence. These results suggest that police visibility can substantially reduce the level of fear and suggests much more research that should be done in this understudied area in public health.

Works Cited

1. Skogan WG, Maxfield MG. Coping with crime: Individual and neighborhood reactions. Beverly Hills: Sage Publications, 1981.
2. Garofalo J. The fear of crime: Causes and consequences. J Crim Law Criminol 1981;72:839-857.
3. DuBow F, McCabe E, and Kaplan G. Reactions to crime: A critical review of the literature. US Government Printing Office, 1979.
4. Stafford M, Chandola T, Marmot M. Association between fear of crime and mental health and physical functioning. Am J Pub Health 2007;97:2076-2081.
5. Chandola T. The fear of crime and area differences in health. Health Place 2001;7:105-116.
6. Jackson J, Stafford M. Public health and fear of crime: A prospective cohort study. Br J Criminol 2009;49:832-847.
7. Whitley R, Prince M. Fear of crime, mobility, and mental health in inner-city London, UK. Soc Sci Med 2005;61:1678-1688.
8. Skogan W. Disorder and decline: Crime and the spiral of decay in American neighborhoods. New York: Free Press, 1990.
9. Aneshensel C, Sucoff C. The neighborhood context of adolescent health. J Health Soc Behav 1996;37:293-310.
10. Ferraro K. Fear of crime: Interpreting victimization risk. Albany, NY: State University of New York Press, 1995.
11. Liska AE, Sanchirico A, Reed MD. Fear of crime and constrained behavior: Specifying and estimating a reciprocal effects model. Soc Forces 1988;66:827-837.
12. Duncan DF. Growing up under the gun: Children and adolescents coping with violent neighborhoods. J Prim Prev 1996;16:343-356.
13. Conklin JE. The impact of crime. New York,: Macmillan, 1975.
14. Warr M. Fear of crime in the United States: Avenues for policy and research. Measurement and Analysis of Crime and Justice 2000;4:451-489.
15. Cutts BB, Darby KJ, Boone CG, Brewis A. City structure, obesity, and environmental justice: An integrated analysis of physical and social barriers to walkable streets and park access. Soc Sci Med 2009;69(9):1314-1322.
16. Heath GW, Parra DC, Sarmiento OL, et al. Evidence-based intervention in physical activity: lessons from around the world. Lancet 2012;380(9838):272-281.
17. Stafford M, Galle O. Victimization rates, exposure to risk, and fear of crime. Criminology 1984;22:173-185.
18. Lewis DA, Maxfield MG. Fear in the Neighborhoods: an Investigation of the Impact of Crime. J Res Crime Delinq 1980;17:160-189.
19. Skogan W. Fear of crime and neighborhood change. Crime and Justice 1986;8:203-229.
20. Hale C. Fear of crime: A review of the literature. Int Rev Vict 1996;4:19-150.
21. Baumer T. Testing a general model of fear of crime: Data from a national sample. J Res Crime Delinq 1985;22:239-255.
22. Biderman A, Johnson L. Report on a Pilot Study in the District of Columbia on victimization and attitudes towards law enforcement. Washington, D.C.: U.S.: U.S. Government Printing Office, 1967.

23. McPherson M. Realities and perceptions of crime at the neighborhood level. Victimology 1978;3:319-328.
24. Taylor R, Schumaker, S and Gottfredson, S. Neighborhood-level linkages between physical features and local sentiments: deterioration, fear of crime, and confidence. J Archit Plann Res 1985:261-265.
25. Sampson RJ, Raudenbush SW. Seeing disorder: Neighborhood stigma and the social construction of "broken windows". Soc Psychol Q 1994;67:319-342.
26. Clemente F, Kleiman MB. Fear of crime in the United States: a multivariate analysis. Soc Forces 1977;56:519-531.
27. Hale C, Pack P, Salked J. The structural determinants of fear of crime: An analysis using census and crime survey data from England and Wales. Int Rev Vict 1994;3:211-233.
28. Fisher B, Nassar JL. Fear spots in relation to microlevel physical cues: Exploring the overlooked. J Res Crime Delinq 1995;32:214-239.
29. Schweitzer JH, Kim JW, Mackin JR. The impact of the built environment on crime and fear of crime in urban neighborhoods. Journal of Urban Technology 1999;6:59-73
30. Earls FJ, Brooks-Gunn J, Raudenbush SW, Sampson RJ. PROJECT ON HUMAN DEVELOPMENT IN CHICAGO NEIGHBORHOODS (PHDCN): Waves 2 and 3 [Computer File]. ICPSR. 2002.
31. Earls FJ, Buka SL. Project on Human Development in Chicago Neighborhoods. Washington, D.C.: National Institute of Justice; 1997.
32. Sampson RJ, Raudenbush SW. Systematic social observation of public spaces: A new look at disorder in urban neighborhoods. Am J Sociol 1999;105:603-651.
33. Sampson RJ, and Raudenbush SW. Seeing disorder: Neighborhood stigma and the social construction of "broken windows". Soc Psychol Q 1994;67:319-342.
34. Raudenbush SW, Sampson RJ. Ecometrics: Toward a science of assessing ecological settings, with application to the systematic social observation of neighborhoods. Sociol Methodol 1999;29:1-41.
35. Schafer JL. Multiple imputation: A primer. Statistical Methods in Medical Research 1999;8:3-15.
36. StataCorp. Stata Multiple Imputation Reference Manual Release 12. College Station, TX: Stata Press, 2011.
37. Warr M. Poll trends: Public Opinion on crime and punishment. Public Opinions Quarterly 1995;59:296-310.
38. Weisburd D, Eck JE. What can police do to reduce crime, disorder, and fear? Annals AAPPS 2004;593:42-65.
39. United States of America. The Newark foot patrol experiment. Washington, D.C.: Police Foundation, 1981.
40. Brown LP, Wycoff MA. Policing Houston: Reducing fear and improving service. Crime Delinq 1987;33:71-89.

Table 1. Sample characteristics (percentages or means/standard deviations) for all variables included in these analyses.*±

Variable	Percentage / Mean (SD) (Among Non-Missing)	Percent Missing
Dependent Variable		
Fear Violence in Neighborhood		
Not Afraid	.33	0
A Little Afraid	.44	
Very Afraid	.24	
Independent Variables (Individual Level)		
Violence Experience [Ever] (Subject)		.002
No Experience with Violence	.06	
Know of Violence Happening to Others	.03	
Saw Violence Happen to Others	.43	
Experienced Violence Personally	.48	
Age (Subject)		0
Cohort 6 and 9	10.9 (0.58)	
Cohort 12	14.2 (0.58)	
Cohort 15	17.2 (0.63)	
Female Sex (Subject)	50%	0
Race/Ethnicity (Subject)		.06
American Indian	.01	
Asian/Pacific Islander	.01	
Black	.31	
Hispanic	.43	
White	.14	
Other	.09	
Total Household Income Last Year		.08
< $10,000	.16	
$10,000 - $19,999	.16	
$20,000 - $39,999	.34	
$40,000 - $69,999	.23	
≥ $70,000	.11	
Subject Lives in Neighborhood Where At Least 70% of Residents Are the Same Race/Ethnicity	.36	.25
Years of Residence in Current Neighborhood	6.2 (10.8)	.02
Had a Chronic Condition [Ever]	.38	.003
Neighborhood Cluster SES		.23
Low	.36	
Medium	.39	
High	.25	
Caretaker Marital Status		.006
Single	.18	
Separated/Divorced/Widowed	.18	
Married/Living with Partner	.64	
Quality of Child's Education (Parental Report)		.04

Excellent/Very Good	.80	
Fair/Poor	.20	
Depression (Primary Caretaker)	.25	.08
How Far Subject Expects to Go in School		.03
Graduate High School or Less	.12	
Some College	.18	
Graduate College or More	.70	
Employed/In School (Caretaker)	.68	.03
Employed at All during Last Year (Subject)	.27	.003
Lacked Health Insurance at Any Time Between Interview Waves (Subject)	.21	.01
Independent Variables (Neighborhood Level)		
Physical Decay (range: 0-6)	0.63 (0.29)	.23
Physical Disorder (range: 0-10)	1.54 (0.35)	.23
Social Disorder (range: 0-7)	0.05 (0.06)	.23
Police Visibility (range: 0-1)	0.02 (0.04)	.26

* Characteristics in the table are calculated on those who had non-missing data for each variable.
± Variables are based on the conceptual model. Please see Web Appendix Figure 1.

Table 2. Marginal effects of significant predictor variables on fear of crime among adolescents.[*±]

Predictor	Not Afraid (Unadjusted rate = 0.33)			A Little Afraid (Unadjusted rate = 0.44)			Very Afraid (Unadjusted rate = 0.24)		
	ME	**SE**	**p-value**	**ME**	**SE**	**p-value**	**ME**	**SE**	**p-value**
Individual Predictors:									
Violence									
No Violence (Reference)	--	--	--	--	--	--	--	--	--
Know of Violence	0.06	0.09	0.35	-0.02	0.07	0.82	-0.05	0.06	0.48
Saw Violence	**-0.09**	**0.03**	**0.003**	0.05	0.04	0.29	0.04	0.04	0.37
Experienced Violence	**-0.08**	**0.03**	**0.02**	0.04	0.04	0.33	0.03	0.05	0.49
Age									
Cohort 6&9 (~ 11 yrs old) (Reference)	--	--	--	--	--	--	--	--	--
Cohort 12 (~ 15 yrs old)	**0.18**	**0.03**	**<0.0001**	-0.04	0.03	0.16	**-0.15**	**0.01**	**<0.0001**
Cohort 15 (~ 17 yrs old)	**0.18**	**0.03**	**<0.0001**	-0.02	0.03	0.54	**-0.16**	**0.02**	**<0.0001**
Female	**-0.05**	**0.02**	**0.001**	**-0.05**	**0.02**	**0.03**	**0.10**	**0.02**	**<0.0001**
Race/Ethnicity (Subject)									
White (Reference)	--	--	--	--	--	--	--	--	--
Black	-0.03	0.03	0.27	-0.10	0.05	0.07	**0.13**	**0.05**	**0.02**
Hispanic	**-0.07**	**0.03**	**0.01**	**-0.15**	**0.05**	**0.004**	**0.21**	**0.05**	**<0.0001**
American Indian	-0.03	0.07	0.64	-0.05	0.10	0.62	0.09	0.10	0.39
Asian/Pacific Islander	-0.02	0.02	0.76	-0.01	0.12	0.92	0.04	0.12	0.78
Other	-0.02	0.02	0.68	-0.01	0.06	0.82	0.03	0.06	0.62
Total Household Income Last Year									
< $10,000 (Reference)	--	--	--	--	--	--	--	--	--
$10,000 - $19,999	-0.02	0.03	0.45	0.05	0.04	0.13	-0.03	0.03	0.32
$20,000 - $39,999	0.04	0.03	0.22	-0.02	0.03	0.61	-0.02	0.03	0.46
$40,000 - $69,999	**0.07**	**0.04**	**0.05**	0.01	0.04	0.73	**-0.08**	**0.03**	**0.002**
≥ $70,000	**0.16**	**0.05**	**0.001**	-0.01	0.05	0.80	**-0.15**	**0.03**	**<0.0001**
Employed at All during Last Year (Subject)	0.03	0.02	0.26	0.05	0.03	0.10	**-0.07**	**0.02**	**0.002**
How Far the Subject Expects to Go in School									
High School or Less (Reference)	--	--	--	--	--	--	--	--	--
Some College	**0.08**	**0.04**	**0.05**	-0.05	0.04	0.23	-0.03	0.03	0.39
Graduate College or More	**0.07**	**0.04**	**0.04**	-0.01	0.04	0.75	**-0.06**	**0.02**	**0.01**
Caretaker Marital Status									
Single (Reference)	--	--	--	--	--	--	--	--	--
Separated/Divorced/Widowed	-0.02	0.03	0.42	0.03	0.03	0.33	-0.01	0.03	0.73
Married/Living with Partner	**-0.05**	**0.02**	**0.03**	**0.07**	**0.03**	**0.03**	-0.02	0.03	0.59
Neighborhood Predictors:									
Social Disorder	**-0.44**	**0.20**	**0.03**	0.27	0.22	0.22	0.17	0.17	0.31
Police Visibility	**0.87**	**0.24**	**<0.0001**	-0.10	0.30	0.73	**-0.77**	**0.31**	**0.01**

* Other variables that were controlled for but were not significant include racial/ethnic concordance, average length of time at current address, chronic disease, neighborhood socioeconomic status, quality of subject education, caretaker depression, caretaker employment, lacking health insurance between interview waves, physical disorder, and physical decay.
± Marginal Effects translate into the percentage point change from the baseline prevalence.