

Violence Perpetration Among Urban American Indian Youth

Can Protection Offset Risk?

Linda H. Bearinger, MS, PhD; Sandra Pettingell, PhD; Michael D. Resnick, PhD; Carol L. Skay, PhD; Sandra J. Pothoff, PhD; John Eichhorn, BA

Objective: To predict the likelihood of violence perpetration given various combinations of the most statistically salient risk and protective factors related to violence perpetration.

Design: Urban Indian Youth Health Survey, conducted from October 9, 1995, to March 30, 1998, consisting of 200 forced-choice items exploring values, cultural identity, relationships, decision-making skills, and health and well-being.

Setting: Urban schools and an after-school youth development program at an urban American Indian center.

Participants: Five hundred sixty-nine urban American Indian youth enrolled in grades 3 through 12.

Main Outcome Measures: Violence perpetration dichotomized in 2 ways: (1) level of violence perpetration (ie, hitting someone 1-2 times in the past year vs picking fights, hitting repeatedly, participating in group fights, or shooting or stabbing someone in the past year) and (2) having shot and/or stabbed someone during the past year.

Results: In the final multivariate models with age as a covariate, most protective against violence perpetration were connections to school (odds ratio [OR], 0.17), positive affect (OR, 0.29), and peer prosocial behavior norms against violence (OR, 0.35). School connectedness (OR, 0.01) and positive affect (OR, 0.46) were also protective against shooting and/or stabbing someone, as was parental prosocial behavior norms against violence (OR, 0.23). The strongest risk factors for violence perpetration were substance use (OR, 2.60) and suicidal thoughts/behaviors (OR, 2.71); for shooting and/or stabbing, it was substance use (OR, 5.26). The likelihood of violence perpetration increased markedly (from 10% to 85%) as the exposure to risk factors increased and protective factors decreased. For shooting or stabbing someone, the probabilities ranged from 3% (0 risks and 3 protective factors) to 64% (1 risk and 0 protective factors).

Conclusion: The dramatic reduction in the likelihood of violence involvement when risk was offset with protective factors in the probability profiles suggests the utility of a dual strategy of reducing risk while boosting protection.

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Author Affiliations: Center for Adolescent Nursing, School of Nursing (Drs Bearinger, Pettingell, and Skay and Mr Eichhorn), Department of Pediatrics, Medical School (Drs Bearinger and Resnick), and Carlson School of Management (Dr Pothoff), University of Minnesota, Minneapolis.

GROWING ATTENTION HAS been focused on violence involvement among American Indian youth.¹⁻³ Recent statistics indicate the average annual violent crime rate for American Indians older than 12 years to be approximately 2.5 times the national rate.⁴ Whereas the National American Indian Adolescent Health Survey provided new information on the levels of interpersonal and self-directed violence among the rural reservation-based youth population,^{1,5} far less is known about violence involvement for American Indian youth living in urban settings. Preliminary analyses of data from the Urban Indian Youth Health Survey showed a profile of children and adolescents living in

settings with high levels of violence and substance use.⁶ Data revealed prevalence rates for interpersonal violence and risk of injury from firearms that exceeded levels documented in either the National American Indian Adolescent Health Survey¹ or the 1990 comparative urban youth health study by Blum et al.⁷

An in-depth examination of violence involvement among urban American Indian youth is needed. By using a resiliency paradigm, this study sought to identify the most salient risk and protective factors for violence perpetration and, specifically, shooting or stabbing someone such that we, then, could predict the likelihood of violence perpetration given various combinations of the risk and protective factors.

Table 1. Independent Variables

Variable	Description	No. of Items	α Value
Protective Factors			
Connectedness to others	Feeling other adults care about you, have other adults outside your family that you can talk to, your friends care, you can make friends, and you have friends you can talk to and/or go to for safety if needed	6	.57
Family caring	Feeling that your mom, dad, and others in your family care about you and your feelings, praise you, understand and pay attention to you, and talk with you about your future goals, and you and your family eat meals together and have fun with each other	10	.78
Parental prosocial behavior norms	Perception of your parents' approval or disapproval of antisocial behavior: getting arrested, beating someone up, carrying a gun or knife, getting (someone) pregnant, dropping out of school, drinking alcohol, and smoking marijuana	8	.77
Peer prosocial behavior norms	Perception of your peers' approval or disapproval of antisocial behavior: getting arrested, beating someone up, carrying a gun or knife, getting (someone) pregnant, dropping out of school, drinking alcohol, and smoking marijuana	8	.91
Perceived self-image	General health and healthiness compared with peers, life satisfaction and liking yourself, perceived weight (underweight, overweight, or about right), and weight satisfaction	6	.50
Positive affect	Positive feelings about yourself with respect to mood and/or mental status (eg, bored, sad, stressed, or tired)	5	.64
School connectedness	Perceptions of your relationships with teachers and other school staff (care about you, know you well, expect you to do well, and you get along with them) and importance of school attendance and doing well in school	6	.73
Risk Factors			
Substance use	Number of days in the past month in which you used alcohol, marijuana, and cigarettes	3	.83
Suicidal thoughts/behaviors	Worry about killing yourself, thoughts about killing yourself in the past month, and ever tried to kill yourself	3	.49

METHODS

PARTICIPANTS

Data were collected over 3 years (October 9, 1995-March 30, 1998) from 577 urban American Indian young people. All were enrolled in either a Minneapolis public school (grades 3-12) with many American Indian students or a culturally based youth development program that required school enrollment for all participants.

INSTRUMENT

The Urban Indian Youth Health Survey is a self-report survey examining health-compromising behaviors and protective factors along with social, contextual, and demographic information. It consists of 200 forced-choice items exploring values, cultural identity, relationships, decision-making skills, and specific aspects of health and well-being.⁸ The survey was developed through an extensive collaborative consensus-building process involving experts in adolescent health and representatives from the Minneapolis American Indian community. It was adapted from a national survey of reservation-based youth developed by the University of Minnesota in collaboration with the US Indian Health Service.^{1,9} All items, including those from the national survey, were modified following focus group feedback and pilot testing with American Indian young people (ages 9-16 years). Of greatest concern was adapting items so they would be appropriate for children with an elementary school reading level as low as second grade. Those young people need-

ing reading assistance completed the instrument as a survey administrator (J.E.) read aloud the items and responses from a separate survey copy (to maintain confidentiality). Eight surveys were unusable (ie, incorrectly completed), resulting in 569 usable surveys for this analysis.

DESIGN AND PROCEDURE

Survey administration occurred from October 9, 1995, to March 30, 1998, during school hours or regular program hours at the youth development program. Active parental consent and student assent were obtained before study participation. Of the 598 returned consent forms, the parent(s) of 577 study participants consented to their child's participation; study participants also signed a form indicating their assent. Identification numbers assured respondent confidentiality. The University of Minnesota Institutional Review Board and the Minneapolis schools approved all study protocols.

VARIABLES

Items expected to function as either risk or protective factors for violence perpetration were selected from the Urban Indian Youth Health Survey.¹⁰ Factor analyses determined which subfactors existed within the broad domains of individual, family, and community factors, and subsequently assured unidimensionality of each construct. Scales were created for each subfactor, and the Cronbach α for internal consistency verified that items measured facets of the same construct.

Violence perpetration was operationalized as the average score for a 6-item scale: (a) When you have a problem, what do you do to feel better? Response used in scale=pick a fight. (b) What do you do when you are angry? Response used in scale=hit someone. (c) In the past year, how often have you hit or beat up another person? (d) In the past year, have you been in a fight where a group of your friends fought another group? (e) In the past year, did you shoot at someone with a gun? (f) In the past year, did you cut or stab someone? The scale was dichotomized, with 0 reflecting no or a low level of violence perpetration (eg, hitting someone once or twice in the past year) and 1 reflecting greater violence involvement (eg, picking fights or hitting someone repeatedly, involvement in group fights, or shooting or stabbing someone ≥ 1 time in the past year). The second perpetration measure was a dichotomous score reflecting whether the subject had shot and/or stabbed someone during the past year.

As seen in **Table 1**, 7 scales were developed to represent the following protective factors: connectedness to others (including peers, adults, and other adult family members), family caring, parent prosocial behavior norms, peer prosocial behavior norms, perceived self-image, positive affect, and school connectedness. Two scales were created to measure the following risk factors: substance use and suicidal thoughts/behaviors. With the goal of examining protective and risk factors amenable to intervention, a reported history of violence victimization was not entered into the bivariate or subsequent multivariate models. Scale scores were computed for individuals with a minimum of 75% of completed items per scale and were standardized to range from 0 to 1.

DATA ANALYSIS

Bivariate relationships between violence perpetration and the risk and protective factors were examined using Wald χ^2 tests derived from logistic regression. Variables representing a risk or protective factor that achieved a statistical significance level of $P \leq .05$ and had an odds ratio (OR) of less than 0.50 for a protective factor and greater than 2.00 for a risk factor (ie, thinking that doubling the likelihood of the occurrence of an outcome has practical and clinical meaning) were considered for entry into multivariate logistic regression models. All bivariate and multivariate analyses included age as a covariate.

The 2 strongest risk factors and 3 strongest protective factors that explained violence perpetration were entered into a multivariate logistic regression model that provided the β weights needed to form probability profiles.¹¹ Multivariate logistic regression allowed various factors to be controlled while measuring the unique effect of each factor on violence perpetration. Logistic models also provided the probability of violence perpetration for a youth as the number of risk and protective factors was manipulated. In this analysis, the estimated likelihood of violence perpetration was computed, where combinations of 0, 1, 2, or 3 protective and/or 0, 1, or 2 risk factors were present. Parallel analyses were conducted for the shooting and/or stabbing outcome variable.

RESULTS

DESCRIPTIVE FINDINGS

All 569 participants were American Indian, primarily Ojibwa/Chippewa/Anishinabe (66.1%), Lakota/Dakota/Sioux (22.9%), and Winnebago (1.6%); 17.2% either belonged to another tribe or were unsure of their tribal heritage (the total percentage exceeds 100 because some

identified >1 tribal affiliation). The sample was nearly equally divided by sex (female, 51.7%; and male, 48.3%). The age range was 9 to 15 years (mean, 11.9 years).

Many young people in this study reported indicators of limited economic resources and the presence of violence in their lives. More than 1 in 7 (14.8%) reported that their home had no working telephone; nearly 3 of 4 (72.7%) received free school lunches. Some had moved at least once in the previous year (18.6%), and an additional 19.7% had moved 3 or more times in the past 12 months. More than half (56.5%) reported having family or friends in gangs, and 19.1% knew where to locate 1 or more guns in their homes. Two thirds (65.5%) reported having had a family member shot or stabbed. One fifth (20.6%) had had a family member or friend attempt to kill themselves at some time. Also by respondent self-report, more than 1 in 10 reported histories of sexual (10.2%) or physical (12.3%) abuse. Nearly 1 in 5 (19.0%) had witnessed on 3 or more occasions someone being stabbed or getting shot (not on television). One fourth of the youth (24.4%) had carried a weapon, with 17.8% having been in a gang at some point in their lives. Overall, 37.8% had perpetrated violence against another person(s), meaning that they had stabbed, shot, or repeatedly hit someone, with 27.8% having threatened to shoot or stab someone and 8.6% having actually fired a gun at someone and just more than 10.9% having stabbed someone; of these youth, 3.7% had done both. In addition to violence involvement, 22.3% of the adolescents acknowledged use of cigarettes, alcohol, marijuana, or a combination of these substances. Almost 1 in 6 (15.8%) reported a history of sexual intercourse.

Violence perpetration was the highest among 11- to 14-year-old subjects. For example, among 9-year-old subjects, there was 8.8% violence perpetration compared with 21.4% among 12-year-old subjects, decreasing to 10.2% by the age of 15 years. Likewise, 7.8% and 8.9% of 9- and 10-year-old subjects, respectively, reported having shot or stabbed someone, whereas 17.8% of 11- and 12-year-old subjects each reported the same, with a peak of more than one fifth (21.1%) of 13-year-old subjects acknowledging having stabbed or shot someone. For both outcome variables, the reported violence involvement declined slightly by the ages of 14 and 15 years.

RISK AND PROTECTIVE FACTORS ASSOCIATED WITH VIOLENCE PERPETRATION AND SHOOTING/STABBING

The bivariate relationships in **Table 2** identify individual, family, peer, and community characteristics related to perpetration of violence and having shot and/or stabbed someone. Sample sizes for the bivariate logistic regression analyses ranged from 431 to 528.

As seen in Table 2, for violence perpetration, the strongest protective factors (ie, associated with an absence or low levels of perpetrating violence) included family caring, parental and peer prosocial behavior norms against violence, positive affect, and school connectedness. The strongest risk factors for violence perpetration (ie, those positively related to the perpetration of violence) were substance use and suicidal thoughts/behaviors.

Narrowing the focus to the most violent behaviors (ie, shooting or stabbing another person), similar bivariate patterns of protection and risk emerged. Protective against shooting and/or stabbing someone were connectedness to others outside the family, family caring, parental and peer prosocial behavior norms against violence, positive affect, and school connectedness. Again, risk factors for shooting and/or stabbing were substance use and report of suicidal thoughts/behaviors.

The final multivariate model, presented in **Table 3**, was constructed from the initial multivariate analysis using variables significant in bivariate and initial multivariate analyses. Significance was defined at $P \leq .05$, with an OR of less than 0.50 for a protective factor and greater than 2.00 for a risk factor (ie, thinking that doubling the likelihood of the occurrence of an outcome has practical and clinical meaning).

In the final multivariate model for violence perpetration (Table 3), the only protective factor achieving statistical significance was peer prosocial behavior norms. Although not statistically significant in the final multivariate model, the ORs for school connectedness and positive affect suggested a substantial protective effect for violence perpetration. As found in the bivariate and initial multivariate analyses, substance use and suicidal behavior continued to be significantly associated with violence perpetration.

Risk and protective factors for shooting/stabbing were comparable to those significant for violence perpetration, with 2 differences. For shooting/stabbing, peer prosocial behavior norms did not play a significant role; rather, parental prosocial behavior norms had an OR and P value that met the criteria for inclusion in the probability profiles. Likewise, substance use was a significant risk factor while suicidal behaviors was not a risk factor for shooting/stabbing. Only substance use was retained for probability profiling, because its OR was greater than 2.00.

PROBABILITY PROFILES

By using age as a covariate, the predicted probabilities of violence perpetration and shooting and/or stabbing someone were computed using scale scores reflecting the 10th and 90th percentiles for each scale.^{5,11} The profiles are depicted in **Figure 1** and **Figure 2**.

Violence Perpetration

Among adolescents characterized by the 3 protective factors of peer prosocial behavior norms, positive affect, and school connectedness and neither risk factor (ie, substance use and suicidal thoughts/behaviors), approximately 10% would be expected to perpetrate violence. An increase in the likelihood of violence perpetration was evident as each of the 2 risks was added individually to the profile while retaining the 3 protective factors. With the 2 risk factors present along with the 3 protective factors, the probability of violence perpetration increased more than 3-fold (from 10% to 36%).

As the number of protective factors was reduced to 2, the probability of violence perpetration increased by

Table 2. Bivariate Logistic Regression Analyses: Protective and Risk Factors for Violence Indicators, With Age as a Covariate*

Variable	Violence Perpetration	Shooting and/or Stabbing
Protective Factors		
Connectedness to other adults	0.60 (0.25-1.44)	0.14 (0.04-0.42)
Family caring	0.22 (0.08-0.58)	0.12 (0.04-0.38)
Parental prosocial behavior norms	0.14 (0.06-0.31)	0.08 (0.03-0.20)
Peer prosocial behavior norms	0.20 (0.12-0.35)	0.20 (0.09-0.44)
Perceived self-image	1.10 (0.43-2.84)	0.55 (0.61-1.87)
Positive affect	0.11 (0.04-0.30)	0.15 (0.04-0.53)
School connectedness	0.01 (0.002-0.05)	0.003 (0.00-0.02)
Risk Factors		
Substance use	7.81 (3.80-16.03)	9.65 (4.01-23.20)
Suicidal thoughts/behaviors	4.50 (2.17-9.31)	4.90 (2.06-11.67)

*Data are given as odds ratio (95% confidence interval). Violence perpetration was dichotomized as follows: 0, no or a low level of violence perpetration; and 1, greater violence involvement (for shooting and/or stabbing, 1 indicates having shot and/or stabbed someone in the past year).

Table 3. Final Multivariate Logistic Regression Analysis: Protective and Risk Factors for Violence Indicators, With Age as a Covariate*

Variable	Violence Perpetration (n = 363)	Shooting and/or Stabbing (n = 413)
Protective Factors		
Parental prosocial behavior norms	NA	0.23 (0.06-0.90)
Peer prosocial behavior norms	0.35 (0.18-0.70)	NA
Positive affect	0.29 (0.07-1.20)	0.46 (0.09-2.47)
School connectedness	0.17 (0.02-1.29)	0.01 (0.001-0.20)
Risk Factors		
Substance use	2.60 (1.14-5.97)	5.26 (2.01-13.76)
Suicidal thoughts/behaviors	2.71 (1.04-7.04)	NA

Abbreviation: NA, data not applicable.

*Data are given as odds ratio (95% confidence interval).

nearly half regardless of the number of risk factors present. For instance, 3 protective factors and both risk factors produced a likelihood of violence perpetration of 36%, while any combination of 2 protective factors and both risk factors produced probabilities ranging from 51% to 62%. A similar pattern was evident with any of the single protective factors as well. As the number of protective factors was reduced to 1, the probability of violence perpetration increased by more than one fifth regardless of the number of risk factors present. For the individual characterized by none of the protective factors and none of the risks, there was still a 52% chance this person would be involved in perpetrating violence. This probability is 5 times greater than the individual who had neither of the risks but had 3 protective factors. And, the adolescent who had no protective factors and both risk factors had an 85% chance of perpetrating violence.

Overall, the likelihood of violence perpetration increased as the exposure to risk factors increased and the

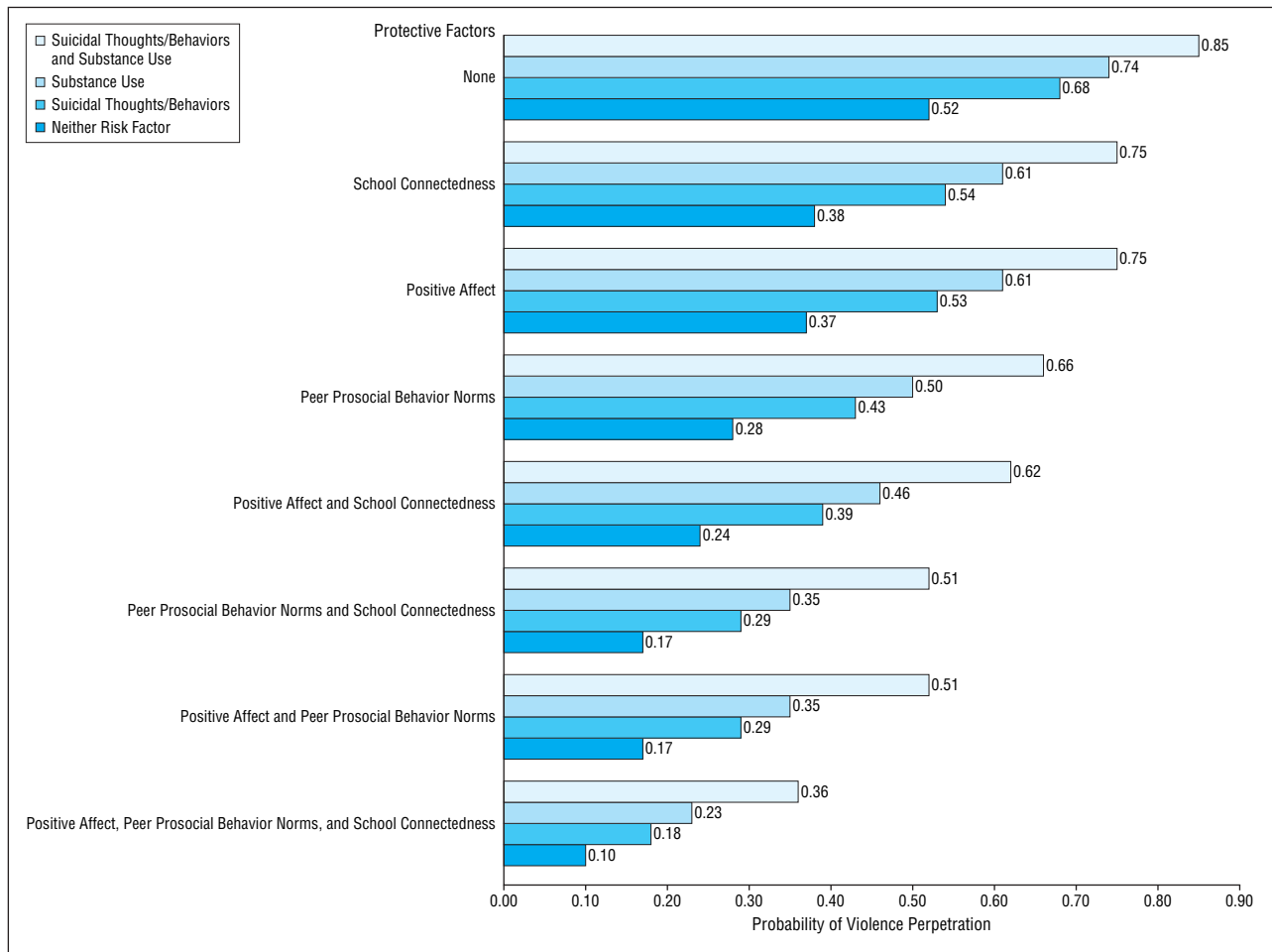


Figure 1. Probability profiles of violence perpetration.

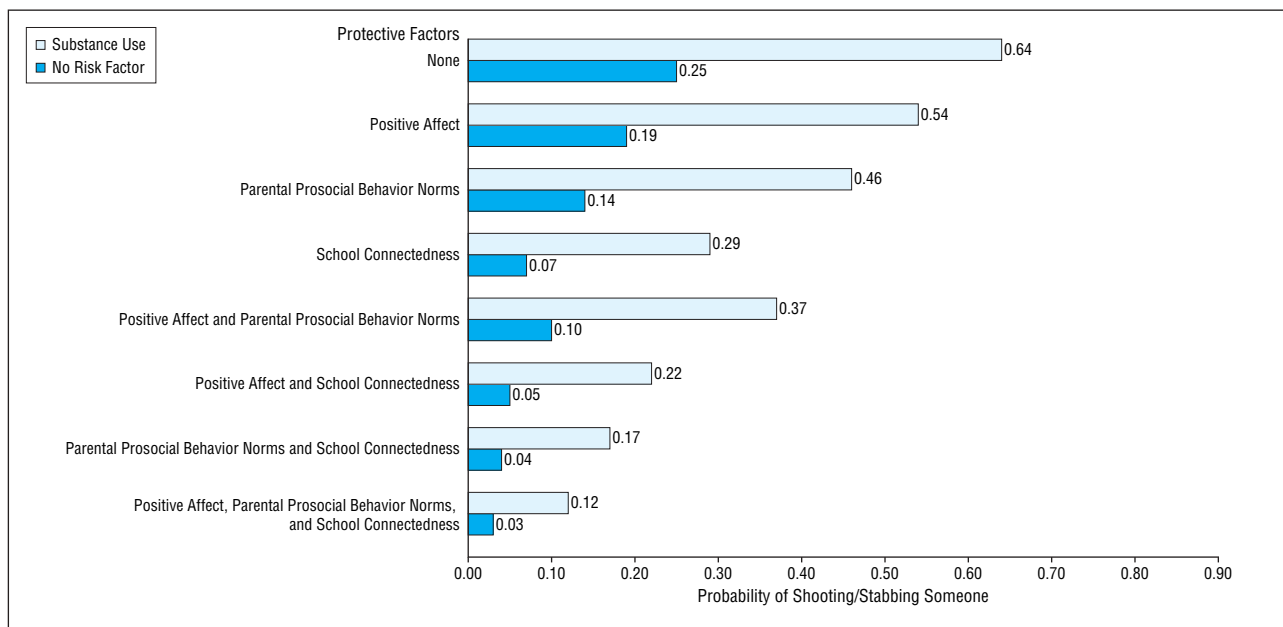


Figure 2. Probability profiles of shooting and/or stabbing someone.

number of protective factors decreased, from 10% in the best case scenario (0 risk factors and 3 protective fac-

tors) to 85% in the worst case scenario (2 risk factors and 0 protective factors).

Shooting/Stabbing

With 3 protective factors (parent prosocial behavior norms, positive affect, and school connectedness) and no risk factor (substance use), 3% of the youth would be expected to shoot/stab another person. Again, a 4-fold increase in the likelihood of shooting/stabbing was observed as the risk factor (substance use) was added individually to the profile with 3 protective factors still in the model.

As the number of protective factors decreased to 2, the probability of shooting/stabbing another person increased by more than one third regardless of the presence of the risk factor. For the individual characterized by none of the protective factors and without the risk factor, there was still a 25% likelihood this person had shot and/or stabbed another individual. That was more than 8 times greater than the individual who had no risk factor but had 3 protective factors. In other words, even without the most powerful risk factor, protective factors played a key role in lowering the likelihood of shooting or stabbing someone.

Thus, when comparing those most likely to be involved in shooting/stabbing someone with those least likely to be involved, the probabilities ranged from 64% (1 risk factor and 0 protective factors) to 3% (0 risk factors and 3 protective factors).

COMMENT

Consistent with a resilience paradigm, the present study showed that perpetration of violence among urban American Indian youth is associated with parental, school, and peer-related factors as well as personal or individual risk and protective factors.

In our study, peer and parental prosocial behavior norms, positive affect, and school connectedness were associated with a lower risk for violence perpetration among urban American Indian young people. As social learning theory suggests, behaviors and attitudes of significant others strongly influence individual behavior.¹² As in our findings, powerful role modeling of parents, in words and action, consistently influences the behavioral choices made by adolescents.^{13,14} Likewise, older siblings, extended family, other adults, and peers play a critical role in the socialization of youth.¹⁵ In addition, the protective nature of positive affect, as in our study, and emotional health and optimism are documented in other adolescent violence research.^{16,17} Departures from these positive feelings are common,¹⁸ but persistent emotional distress is a consistent underpinning to the acting out behaviors (such as violence perpetration) and the quietly disturbed behaviors (such as a suicide attempt).¹⁴ Finally, connectedness to school, which operates separately from academic performance, also seems to shield against various risk behaviors and conditions (emotional distress, suicide attempt, violence perpetration, substance use, pregnancy, and early age of sexual debut).^{9,14}

In contrast to these protective effects are the risks for violence perpetration posed by suicidal involvement and substance use, as our findings revealed. Previous inves-

tigators have distinguished between risk and protective factors related to self-directed vs interpersonal violence.¹⁴ However, improved modeling techniques, larger samples, and longitudinal designs have led to new perspectives about youth violence. Rather than representing 2 behavioral clusters (ie, risks associated with suicide vs violence perpetration), each with distinct causes, there is much commonality in terms of factors that predict participation in these 2 manifestations of violence. This goes so far as to include one form of violence predicting or explaining participation in the other (eg, violence perpetration predicting suicidal attempts/thoughts and vice versa).⁵ High-profile acts of adolescent violence ending in suicide of the perpetrator(s) (as with several school shootings in the past few years) have dramatically underscored the importance of interpreting one manifestation of violence as a risk factor for the other. Among American Indian youth, this dynamic may be of particular concern, because suicide is the second leading cause of death for American Indian-Alaska Native youth.⁵

Substance use has long been identified as having a potentiating effect on self-directed and interpersonal violence through the lowering of inhibitions and the release of aggression.¹⁹⁻²¹ Alcohol use can diminish self-restraint and increase impulsive behavior. Both of these conditions can precipitate violence perpetration against self or others, whether premeditated or spontaneous.^{22,23}

There were substantial effects of the key identified risk and protective factors on the probability of violence perpetration or shooting/stabbing another. Separately and in combination, these risk and protective factors either augmented or diminished the likelihood of violence involvement above and beyond an already high base rate of violence involvement. In the probability profiles with none of the risk or protective factors present, more than half (52%) of respondents had a predicted likelihood of perpetrating violence. If substance use and suicidal tendencies were factored in, this likelihood increased to 85%. Similarly, at baseline, one fourth (25%) of respondents were expected to shoot or stab another. This likelihood more than doubled (to 64%) with the risk factor present. Yet, the offsetting of these probabilities through the addition of protective factors to the profiles suggests the utility of a dual strategy of reducing risk while boosting protection. With both risk factors still present, there is more than a 2-fold decrease (from 85% to 36%) in the probability of violence perpetration with all 3 protective factors present. More dramatically, there is more than a 5-fold reduction (from 64% to 12%) in the probability of shooting or stabbing someone with the risk factor present when the 3 protective factors are added to the model.

LIMITATIONS

Several limitations should be given prudent consideration. First, all young people in the sample were in school; thus, this study does not address the nature of violence involvement among youths who have dropped out of school. Second, we were unable to capture the circumstances and/or motivations for acts of perpetration that

were reported by the young people in this study. Some of the acts may have been in response to situations of self-defense or situations with no intent to harm another. Third, a convenience sample does permit findings to be generalized to the broader populations of American Indian youths, urban or otherwise. Fourth, the risk and protective factors shown herein to increase or diminish the calculated likelihood of violence involvement among respondents represent group findings. Fifth, the risk and protective factors yielded in cross-sectional analyses do not lend themselves to the kinds of conclusions that can be derived from causal modeling of longitudinal data. Finally, some α values for the variable scales were lower than desired. The value of α depends on the average interitem correlation and the number of items in the scale²⁴; a few scales were composed of only 3 to 5 items, and many of their response options were also limited to 2 to 3 choices (for readability) rather than the ideal 5- to 7-point Likert scale. Furthermore, the α value provides a conservative estimate of reliability when items depart substantially from being parallel measurements.²⁵ In sum, given the few items, the limited response options, and the departure from parallel items in the scales, the resulting α values seem reasonable.

IMPLICATIONS

Identifying key risks and protections for violence perpetration that are amenable to change highlights priorities for interventions at individual and population-based levels. Our analysis also points to the merits of including protective factors in comprehensive assessments, particularly with highly vulnerable populations.

A critical question in health promotion with high-risk young people is the extent to which the transplanting of protective factors into the lives of those bereft of such nurturance can have a salutary effect.¹⁴ In clinical and programmatic contexts, it is well understood that risk factors cannot always be eliminated, as with a history of violence victimization or abuse.²⁶⁻²⁹ From this analysis, we would expect to see protective effects accruing from interventions involving parents and peers in the promotion of prosocial antiviolence norms in the conduct of everyday life. Likewise, the salience of school connectedness suggests the importance of involvement of teachers and other school personnel in helping to foster a sense of connection to school as a key social setting and developmental influence in the lives of young people.^{30,31} In addition, individual approaches to mental health promotion and reduction of substance use can be a promising complement to family, peer, and school, as a means of boosting protective factors.³² Critically important is a comprehensive multifaceted approach that includes the array of social sectors that influence the health and well-being of adolescents.³³

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Correspondence: Linda H. Bearinger, MS, PhD, Center for Adolescent Nursing, School of Nursing, University of Minnesota, 6101 Weaver-Densford Hall, 308 Harvard St SE, Minneapolis, MN 55455 (beari001@umn.edu).

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