Implications of Direct Protective Factors for Public Health Research and Prevention Strategies to Reduce Youth Violence

Jeffrey E. Hall, PhD, MSPH, Thomas R. Simon, PhD, Rosalyn D. Lee, PhD, James A. Mercy, PhD

Abstract: The development of work on direct protective factors for youth violence has been delayed by conceptual and methodologic problems that have constrained the design, execution, and interpretation of prevention research. These problems are described in detail and actively addressed in review and analytic papers developed by the CDC's Expert Panel on Protective Factors for youth violence. The present paper synthesizes findings from these papers, specifies their implications for public health research and prevention strategies to reduce youth violence, and suggests directions for future research.

(Am J Prev Med 2012;43(2S1):S76–S83) Published by Elsevier Inc. on behalf of American Journal of Preventive Medicine

Introduction

The work presented in this supplement to the *American Journal of Preventive Medicine* is a coordinated attempt to examine and advance the state of science on factors that directly reduce the likelihood of youth violence (i.e., direct protective factors).[1–7] It not only provides an update on the status of research on this topic but also assesses the collective import of findings from novel, collaborative analyses of diverse youth violence–related data. This work is important to developing studies that are conceptually precise and incorporate ideas and practices that have been empirically supported as well as theoretically justified. Moreover, it demonstrates an approach for examining etiologic factors that may help clarify the influences that exhibit independent risk and direct protective effects. This paper examines the implications of the findings in this supplement for public health research and strategies addressing factors that promote reductions in youth violence.

Issues

The papers by Lösel and Farrington[2] and Loeber and Farrington[3] indicate that the generation and application of knowledge regarding direct protective and buffering protective factors for youth violence has been impeded by key conceptual problems. Major problems in past research involved (1) overemphasis on risk factors compared with direct protective variables; (2) the assumption that most predictor–outcome relationships are either linear or multiplicative; and (3) failure to consider that variables may exhibit risk effects, or direct protective or buffering protective effects depending on the specific developmental period and particular violence outcome measured. Such conceptual problems have in many instances constrained the design, implementation, and interpretation of prevention research. They inadvertently also have promoted the use of study designs (e.g., correlational or cross-sectional research designs; measurement of constructs that may not be relevant for youth in specific stages of development) and analyses not optimally structured to detect, distinguish, and exploit the effects of interest (e.g., analyzing cross-sectional data on youth of various ages to determine if differences in variable effects emerge across ages; use of statistical tests that may fail to detect or underestimate the strength of predictor–outcome associations).

In addition, the importance of two other defining features of the field must be explained. First, studies to understand direct protective and buffering protective factors for youth violence are substantially fewer in number than those focused on antisocial behavior and similar global constructs. Studies of antisocial behavior (e.g., actions that violate formal and informal social conventions, such as delinquency, criminality, and behaviors covered under clinical diagnostic categories such as "conduct disorder" and psychometrically defined behavioral syndromes) may suggest possible direct protective and buff-

From the Division of Violence Prevention, National Center for Injury Prevention and Control, CDC, Atlanta, Georgia

Address correspondence to: Jeffrey E. Hall, PhD, MSPH, CDC, 4770 Buford Highway NE, Mailstop F63, Atlanta GA 30341-3724. E-mail: JHall2@cdc.gov.

0749-3797/$36.00

http://dx.doi.org/10.1016/j.amepre.2012.04.019

ering protective factors for youth violence, but the extent to which such findings will be reproduced when focusing on a narrower set of behaviors is unclear. Prior research has shown that youth violence shares some risk and direct protective/buffering protective factors with other antisocial behaviors, but it also suggests that the likelihood of perpetration may be influenced by unique factors and that an array of effects associated with shared risk factors may vary according to the specific type of antisocial behavior examined.[8]

Second, the extensive conceptual and methodologic diversities present in the "few" existing studies of direct protective and buffering protective factors for youth violence make it difficult to draw definite conclusions about the effects of specific factors. Heavy differentiations in the number, type, and makeup of the variable domains investigated, in the strategies for measuring these variables, and in the makeup of statistical models including them, may obscure effects of interest and make it difficult to compare the effects of specific direct protective and buffering protective factors across studies. These differentiations also make it challenging to determine the relevance and explanatory power of particular etiologic theories and measurement paradigms.

Evidence

While the limitations are notable, the field does contain advances and does exhibit the use of approaches and attitudes that may generate stronger evidence about variables that reduce the likelihood of youth violence.[2] Favorable advances include (1) a "small" but growing emphasis on distinguishing direct protective and buffering protective factors conceptually, conversationally, and analytically and (2) greater acknowledgement of the need to examine whether it is possible to replicate effects observed in single studies, to examine the persistence of effects across periods of development, and to examine the specificity of effects across violence trajectories. In addition, the repeated appearance of similar findings on specific positive influences in different studies will, despite study differences, increase confidence about the robustness and possible external validity of findings.

Methods

The effort in this series of papers to replicate analyses of risk and direct protective factors across four diverse youth violence data sets was informed by considerations of the field's areas of limitation and growth. Each study examined the same variable domains, used identical definitions to conceptually distinguish direct protective, risk, and mixed effects and employed similar strategies for variable coding and analysis. These actions reduced some between-study differences, as differentiated tests of ideas about the form and nature of the relationships between youth violence and the candidate variables were conducted. They also allowed control over a number of conditions that might influence findings from studies that were developed using related yet distinct theoretic and methodologic orientations.

Results

The overall effort extends earlier, broader work on delinquency, which has studied the nonlinearity of associations and whether risk or direct protective effects prevail for specific variables.[8–10] In particular, the current work provides additional data regarding the extent to which etiologic variables exhibit independent risk and direct protective effects and do so specifically in relation to youth violence. Collectively, the bivariate analyses revealed that of 92 tests for associations with violence perpetration, 12% identified variables with only direct protective effects.

Variables with risk and direct protective effects (i.e., effects at both ends of the variable's distribution) were identified by 18% of the tests (variables with these "mixed effects" are those whose relationship with violence perpetration assumes a linear form. The existence of effects in both ends may be an expression of this form). Variables with only risk effects were identified in 23% of the tests. (Percentages of the 92 tests are based on analyses of variables that could be trichotomized to allow investigation of risk and promotive effects; variables that could not be trichotomized were considered risk factors or protective factors based on previous research. Table 1 shows a list of associations).

Thus, in this effort, it appears that direct protective effects were detected the least, and risk effects were slightly more likely to appear in isolation than to co-occur with direct protective effects. Of the variables commonly available across the data sets, there were no variables that displayed exclusively direct protective effects in more than one study. Variables exhibiting a mixture of effects in at least two samples included ADHD symptoms, depression, peer delinquency, and academic achievement/grade point average. The following variables exhibited risk effects in at least two studies: negative attitude toward school, low school connectedness/commitment, and truancy. (Variables capturing truancy could not be trichotomized in either the Herrenkohl et al.[5] or the Henry et al.[7] study. The risk-only effect of this variable reflects this fact and should not be considered indicative of a nonlinear relationship.)

Multivariable analyses of the common core variables revealed variables whose effects persisted even after accounting for other variables (Table 2). School attachment was the sole variable that displayed only a direct protective effect in a multivariate context. Peer delinquency and academic achievement exhibited direct protective as well as risk effects in relation to youth violence at one measurement point, at least, whereas the availability of marijuana in one's neighborhood, the number of neighbor-