

# Behavioral sciences concepts in research on the prevention of violence<sup>1</sup>

Alfred L. McAlister<sup>2</sup> and Luis F. Vélez<sup>3</sup>

Violence prevention is a growing priority in the field of public health. Public health is a hybrid enterprise, and scholarship in this field lies at the intersection of diverse scientific disciplines. Traditionally, violence research has attracted experts in such areas as sociology, criminology, and psychology (1–13). This confluence of specialties has yielded numerous empirical studies documenting individual and cultural risk factors and a moderate number of studies on prevention, mostly involving secondary prevention at the individual level (14, 15). However, since the costs of violence are largely medical—including mental health—it is natural that the problem of violence has also come to the attention of specialists in preventive medicine and public health (16–18).

Public health scientists and activists are interested in the causes and effects of social and environmental problems that influence the health of whole populations. Epidemiological research methods are used to precisely measure the incidence and prevalence of events and conditions, and comparative studies are conducted on the environmental, cultural, and behavioral risk factors that underlie variations in rates of disease and injury. After risk factors are identified, interventions can be tested and put into practice. Public health studies of violence have documented the scale of the problem and begun to identify environmental factors that are now legitimate targets for public health policy advocacy, such as unauthorized handgun possession (19, 20). Cultural factors underlying variations in violence rates are not yet well understood, and further research is needed on the role of attitudes and social norms in promoting or restraining aggressive behaviors in diverse populations.

Concha, Carrion, and Cobo (1) recently edited an important publication examining violence in Latin America from an interdisciplinary, public health perspective. Various sociological and anthropological studies have provided great insight into different manifestations of violence. However, there has been little direct linkage between social science and epidemiological research approaches and almost no formal comparative studies of cultural and social variables in different regions or nations. When viewed from the public health perspective, sociological and psychological studies of the suspected causes of violence can be interpreted as a form of behavioral epidemiology and a source of hypotheses about causes of violence. In a similar

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<sup>2</sup> University of Texas-Houston, School of Public Health. Mailing address for correspondence: University of Texas-Houston, School of Public Health, P.O. Box 20186, Houston TX 77225; phone: (713) 500-8501; e-mail address: amcalister@mail.utexas.edu

<sup>3</sup> Centro de Investigaciones de Salud y Violencia, Cali, Colombia.

way, studies of the cause of adolescent smoking increased the understanding of the origins and prevention of lung cancer (21). To understand the origin of a disease, it has often been helpful to conduct comparative studies of culture in different national populations with diverse rates of that disease. For example, a set of seven country studies of cardiovascular diseases combined surveys of nutrition practices and serum cholesterol levels with data on national rates of heart disease (22). The studies elucidated the role of unsaturated fats and the value of the so-called "Mediterranean diet" in preventing cardiovascular disease (23).

Epidemiologists and social scientists have also begun to investigate international differences and trends in mortality from violent causes (12, 24, 25) and have found large differences in the rates of violent mortality among and within nations of the Americas. The situation in Colombia has been thoroughly analyzed, revealing large disparities between different cities (26). In the United States of America, rates also vary by region. Studies conducted within the United States have shown that specific norms and attitudes connected with herding cultures are involved in the etiology of violent mortality (27, 28). Different cultural norms and skills for conflict resolution among different groups involved in the drug trade may underlie regional variations in homicide rates within Colombia. Differences in cultural attitudes may also bring about variations in family violence, political violence, and other forms of violence in the different nations of the Americas. To help understand the factors that lead to varying rates of violence, further studies are needed to describe and analyze the differences in skills, attitudes, and cultural beliefs between and within countries. Through this type of research, it may be possible to identify the specific beliefs and other factors that are most important in the social etiology of violence.

Concepts from the behavioral sciences can be used to develop techniques to prevent cancer, cardiovascular disease, HIV infection, and other illnesses (29). This is termed "health promotion," as health education moves beyond just information transmission and expands to include skills training, persuasion, incentives, and facilitative environmental change (30). This type of behavioral sciences analysis and application has evolved over the past twenty years in the areas of chronic and infectious diseases, and it is well suited for the issue of violence. Such concepts as behavioral self-reports, knowledge and awareness, perceived norms, evaluative attitudes, skills and self-efficacy, social support, and the availability and quality of products and services can be measured and, theoretically, they can be modified to stem the growing epidemic of violence in the Americas (16, 31, 32).

## **Social and environmental factors related to violence**

Public health analysis can go beyond individual behaviors and examine social and environmental sources of both individual and collective violence. The mass media certainly influence social-cognitive processes related to violence. For a herd animal, there is obvious survival value in rapid attention to distress cries from others. This phenomenon probably underlies the tendency for acts of violence to command audiences in journalism and drama. Film and television producers competing for audiences may be harmfully distorting this healthy instinct. Displays of violence, even when intended to teach avoidance by potential victims, provide modeling of scripts and skills for potential perpetrators (3). The behavior and codes explicitly modeled in cowboy and western dramas resemble those that Nisbett and others (27, 28, 33) have found among more violence-prone Southerners from the United States, whose manhood is proven by violent responses to threats and insults. Violence is an honorable means to resolve conflicts, and the hero must often "shoot first and ask questions later." When transposed into modern settings, the cowboy/gunfighter script or code can even transmit its values to urban minorities (33, 34). In the United States, differences between states in consumption of certain gun and crime magazines were found to be partly related to homicide rates and to an overall index of legitimate violence, which included such factors as capital punishment rates, corporal punishment laws, and expenditures by the states on their National Guard military units (35).

All forms of violence are determined by both social-cognitive and environmental factors. The most important environmental factor is probably the availability of weapons. Numerous studies show an obvious relationship between the private possession of guns and the number of deaths from firearms (36). This relationship has led to hotly contested efforts to limit the number and type of weapons that are available in the United States. With respect to violence sponsored by organizations, the availability of military weapons must also be seen from the same perspective. Although every country desires to protect itself and some insist on maintaining forces deadly enough to deter almost any attack, the proliferation of ever more powerful mass or individual weapons is probably the greatest threat to world health. Governmental policies regarding production and sale of weapons, either for individual or mass killing, depend upon political processes and collective opinions that may be changed through public education. Opinions and attitudes about weapons and their use have been shown to vary considerably among cultures (27).

Another factor, which may be considered environmental, is urbanization and the structures that increase or limit individuals' exposure to potentially violent situations. Various types of security devices offer protection to some but are not available to everyone. Economic circumstances also influence rates of violence in several ways. In Latin America, economic development and urbanization have brought affluence to some parts of society but conditions among marginal groups have become increasingly dangerous (37). The unemployable, abandoned, urban youth are the most obvious manifestation of this problem (38). In their study of the United States, Baron and Straus (35) showed that poverty and economic inequality are directly related to both homicide rates and an index of legitimate violence. Another major factor may be the presence of covert economies ("black markets") for such widely demanded products as alcohol, tobacco, marijuana, and cocaine. The presence of black markets certainly partially explains the extraordinary levels of violence in Colombia (26).

Environmental factors also determine the extent of conflicts and the means that are available for resolving them. But attitudes, norms, and abilities influence individual and collective choices about how to interpret and respond to situations that may precipitate violence. These social-cognitive factors, learned at least in part from the mass media, may vary considerably between and within cultures. For example, in the more violent parts of the United States, relatively high proportions of the population endorse the right to kill to defend property or in revenge for the rape of a child (27). Differences in violence rates in different countries may also be at least partly determined by differences in attitudes about conflict and conflict resolution. More research is needed to measure attitudes and social norms in different populations and to determine how these social-cognitive factors influence different forms of violence.

### **A behavioral sciences framework for understanding violence**

In seeking a better understanding of violence, there is a well-established theoretical framework that can guide the use of social science interview methodologies to measure quantitative variables. The role of cognition and social learning in the development and display of aggression has been thoroughly presented by Albert Bandura (3, 4, 39), whose theory provides a framework to understand how beliefs and abilities determine many forms of human behavior. Specifically, two concepts are important to understand and evaluate the personal fac-

tors regulating aggression: 1) outcome expectations, which are expressed in the person's attitudes about the consequences and social acceptability of specific violent behaviors in specific conflict situations, and 2) the person's skills and perceived self-efficacy for resolving conflicts nonviolently. These concepts have been shown to be widely applicable to the diverse behavioral problems of public health (29).

A useful method for measuring the influence of attitudes and perceived skills has been developed by Fishbein and colleagues studying HIV prevention behaviors at the U.S. Centers for Disease Control and Prevention (40). In this model, respondents are asked to state whether they approve of behaviors and to categorize them according to social desirability using evaluative adjective pairs. Skills are measured indirectly, by assessment of perceived behavioral control and self-efficacy expectations for being able to perform the behaviors in specific situations. Respondents are asked if they are able to perform a behavior or if they know how to do it. These concepts are assumed to influence intentions to perform behaviors. If intention is defined as a person's prediction of his or her own probable behavior, specific variables can be shown to influence behavior through their impact on intention. When measuring attitudinal or skill-related predictors of behavior, a researcher must choose which components to measure. By simply measuring intention (i.e., prediction) for behavior in different situations, the researcher can obtain an indirect, global estimate of attitudes and skills.

By measuring all of the appropriate attitude components, it is theoretically possible to quantify all influences on behavior and to test hypotheses about their effect on intention and behavior. However, due to the practical limitations of research, it is impossible to measure every element or process. Particular concepts to be measured must be selected strategically. They should include social approval, evaluative attitudes, and, for some concepts, perceived norms and intentions related to different forms of violence. Attitudes toward some nonviolent alternatives should also be measured. Particular skills and the related self-efficacy (ability) expectations should also be assessed, including interpretations of conflicts and provocative events, self-control, and ability to use nonviolent methods to resolve social conflict. Intergroup hostilities and related attitudes should also be evaluated because they affect how people interpret situations and resolve conflicts.

### **Measurement of violence through survey research**

As public health leaders have begun to envision a public health approach to violence control for

the Region of the Americas (16, 31), they have developed a key research objective: measuring, analyzing, and comparing cultural attitudes and norms associated with levels of violence in different countries. To help meet this objective, the Pan American Health Organization organized the ACTIVA project (41), a multinational, cooperative research program to measure victimization and aggressive behaviors and to identify attitudes that are associated with different public and private acts of violence, in populations of the Region of the Americas. As shown in the other articles in this publication, the participating investigators analyzed differences between cities and established similar and dissimilar cultural norms that may be related to indices of violence in those urban areas. The ACTIVA project assessed the approval of situationally specific violent behaviors, as well as attitudes toward and skills for nonviolent alternatives for conflict resolution. The social measurement of factors related to violence included self-reported aggressive behaviors and personal experiences of victimization across different types of violence. The ACTIVA project also measured potential contributing factors, such as substance abuse, relative value placed on human rights, and other social attitudes and values. Data on demographic and socioeconomic factors were also assessed to better understand the relationship between structural factors within societies and violent or nonviolent behaviors.

Nevertheless, survey research such as that done in the ACTIVA project has important limitations that should be taken into consideration. Sampling may be inaccurate, and individuals most prone to violence may be the least likely to respond to surveys. While attitudes can be measured quantitatively, persons may not answer sensitive questions accurately, and numerical scores may fail to represent important qualitative aspects of some concepts. Despite these problems, survey research may help illuminate the social-cognitive factors that influence violence in different populations.

### **Implications for prevention**

The ACTIVA research reported in the other articles in this publication has identified many social factors that are associated with violence. For domestic violence and violence among unrelated persons, various analyses of the ACTIVA data have shown that reported aggression is predicted by attitudes and skills for conflict resolution. Structural and environmental factors may determine the extent of conflict and the availability or efficiency of institutions for conflict resolution, but attitudes and skills influence how individuals and groups respond to their environment. While political and govern-

mental actions seek to improve environments and institutions, efforts to change attitudes and improve skills may also help achieve lower levels of violence in different cities of the Americas.

Public health communication methods, which have been used to influence such behaviors as cigarette smoking or condom use, may also be used to shape attitudes and skills related to violence. In Finland's North Karelia Project to reduce the prevalence of cardiovascular risk factors (42), education, persuasion, and skills training were provided through the mass media and through community networking, and people were organized to promote behavior change within their own peer groups. In HIV prevention campaigns in the United States, newsletters with role models for condom use were distributed through peer networks to influence behavior change among diverse groups at risk of sexually transmitted diseases (40). Given the evidence that violent media representations promote violent behaviors, it is reasonable to expect that nonviolent role models can promote nonviolent behaviors by demonstrating appropriate attitude change and skill acquisition.

The Health and Violence Research Center of Cali, Colombia, is conducting a media and community networking campaign to influence the attitudes and skills that were measured in the ACTIVA study. Entitled "Let's Talk, Cali!" the program uses an approach known as "behavioral journalism" (43). As part of regular television, radio, and newspaper reports, stories are told in which young people and other residents of high-violence neighborhoods describe their decisions to reject violence and how they have learned skills to resolve conflicts. These persons also explicitly display "scripts" for talking to themselves and others that reject moral justifications and victim blaming and that emphasize the humanity of adversaries in conflict situations. The stories also model parenting skills and encourage nonpunitive ways to discipline children. These positive role models are promoted in newsletters that peer networks distribute in schools and elsewhere in the community. Other activities include "street radio," in which young people express their desires for peace and model strategies to resolve conflicts. The project is being evaluated using a community-level, quasi-experimental research design, in which indicators of attitudes, skills, behaviors, and violence are being followed in whole populations. Although the evaluation is not complete, the program has had at least one evident effect. Neighborhoods previously known mostly for murder and violent crime are now seen by their residents and other persons as communities in which many people avoid violence.

Campaigns like "Let's Talk, Cali!" may have an effect on violence if they are combined with

other prevention approaches, such as firearms control, improved quality of life and economic opportunity, effective and coordinated law enforcement and adjudication, family counseling and support, and school-based programs. In other areas of public health and preventive medicine, the best results have usually been obtained from community or population-level programs combining education, skills training, and attitude change with new policies and environmental changes promoting the desired behaviors (29). In the highly successful North Karelia Project, environmental changes and public communication campaigns have led to improvements in hypertension control and to behavior changes, such as smoking cessation and reduced fat consumption. In that project, it has taken 10 to 20 years for conclusive results to come from multifactor interventions, including new health services, regulation of tobacco sales and advertising, and extensive public education, persuasion, and skills training (42). Population-level prevention of violence may require similarly ambitious and long-term actions to change environments and influence behaviors through education, persuasion, and skills training. The ACTIVA project has helped to define and identify some of the attitudes and cultural norms that may need to be changed to lessen the burden of violence on future generations.

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#### SINOPSIS

### Conceptos de las ciencias conductuales en las investigaciones sobre la prevención de la violencia

*El propósito de este artículo es examinar los factores que pudieran explicar las variaciones de la violencia en el nivel poblacional e introducir conceptos de las ciencias conduc-*

*tuales en el campo de las investigaciones efectuadas por encuesta. La violencia y su prevención son temas que competen cada vez más a los especialistas de la salud pública. Conceptos propios de las ciencias del comportamiento se han aplicado al desarrollo de técnicas para prevenir diversas enfermedades mediante actividades de promoción de la salud, entre las cuales figuran el adiestramiento para la adquisición de destrezas, la persuasión, el uso de incentivos y los cambios ambientales de carácter facilitador. Este enfoque arraigado en la salud pública también puede aplicarse a la violencia. El análisis que parte de la salud pública puede ir más allá de las conductas individuales para enfocar las fuentes sociales y ambientales de la violencia individual y colectiva. Los factores ambientales pueden determinar la magnitud de los conflictos, así como los medios disponibles para resolverlos. Las actitudes, normas y habilidades pueden ejercer influencia en las decisiones individuales y colectivas sobre la manera de responder a situaciones capaces de suscitar violencia, y estos factores sociales y cognoscitivos pueden variar notablemente entre distintas culturas e incluso dentro de una misma. Si se desea llegar a un conocimiento más profundo de la violencia, las metodologías de entrevista propias de las ciencias sociales pueden aplicarse para medir variables cuantitativas, pero es necesario seleccionar estratégicamente los conceptos particulares que se han de evaluar. Estas variables pueden abarcar la aprobación de la sociedad, las actitudes valorativas, las normas e intenciones percibidas en relación con la violencia, las actitudes hacia opciones contrarias a la violencia, las habilidades y la autoeficacia que confieren, las interpretaciones de los conflictos y sucesos desencadenantes, el control de sí mismo y la capacidad para usar métodos no violentos para resolver los conflictos sociales. A fin de crear un enfoque de salud pública aplicable al control de la violencia en las Américas, la Organización Panamericana de la Salud organizó el proyecto ACTIVA, que es un programa multinacional de investigación colaborativa destinado a medir la victimización y los comportamientos agresivos y a identificar actitudes asociadas con los actos de violencia públicos y privados. Estos nuevos conocimientos podrían aplicarse a fin de aminorar la carga de violencia que enfrentarán las generaciones futuras en la Región de las Américas.*

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