

Assessing an Educational Intervention to Improve Physician Violence Screening Skills

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ABSTRACT. *Objectives.* Health professionals play an integral role in assessing the risk of violence in their patients. However, there have been few evaluations of violence prevention education programs for health care personnel. The objective of this study was to evaluate the effects of a violence-screening education program on pediatric residents' and medical students' comfort level and skills in the identification and management of violence risks.

Setting. Adolescent clinic of a tertiary care pediatric hospital.

Participants. Fifty-six second-year residents and third-year medical students assigned to a 4-week adolescent clinic rotation.

Design. Randomized, controlled comparison study conducted over a 1-year period.

Intervention. On alternate months, medical students and residents in the intervention group participated in a 3-hour workshop on violence prevention. The workshop included a didactic session with an overview of firearm, media, and sexual violence; a discussion of risk factors for adolescent violence; and training on the approach to the adolescent interview. Participants also discussed violence risks in the community with a panel of teen health educators, engaged in one-on-one role play with the youth educators, and received feedback on their violence screening skills. The control group received the standard ambulatory clinic manual with articles on violence prevention.

Evaluation Methods. All participants completed prerotation and postrotation questionnaires assessing their self-reported screening practices, as well as perceived importance and confidence in violence screening. Participants also interviewed and examined an adolescent standardized patient (SP) in the clinic. SPs completed evaluations on the content of the residents' and students' screening, their interpersonal skills, and their skill in the identification and management of the violence-related problem.

Results. Over 12 months, 30 control and 26 intervention participants were recruited. There were no differences in prerotation questionnaire scores for intervention and control groups in screening practices, perceived importance and confidence in violence screening. Postrotation

intervention participants reported more screening compared with controls on violence in school/neighborhood and fighting history. There was also greater perceived importance in asking about access/use of weapons and violence in school/neighborhood. Intervention participants also had improved performance compared with controls on SP evaluations of screening for violence, identification and management of the violence-related scenario, and interpersonal skills.

Conclusion. A violence prevention education program with teen health educators improved participants' self-reported violence questioning, as well as increased perceived comfort and importance in violence screening. Participants in the program also improved their identification and management of a standardized violence-related scenario presented in an adolescent clinic setting. *Pediatrics* 2001;107(5). URL: <http://www.pediatrics.org/cgi/content/full/107/5/e68>; adolescent violence, physician education, violence risk screening.

ABBREVIATIONS. AAP, American Academy of Pediatrics; SP, standardized patient; HEADS, Home, Education, Activities, Drugs/Alcohol, and Sexuality; FISTS, Fights, Injuries, Sexual Violence, Threats, and Self-Defense Strategies; TASA, Teens Against the Spread of AIDS.

Violence involving youth is a major public health issue. Homicide is the leading cause of death among black youth ages 15 to 34 years and is the second leading cause of death for American youth ages 15 to 19 years.¹⁻³ The US homicide rate for young adults 15 to 24 years old is quadruple the rate for the other 20 Western nations combined.⁴ The underlying causes of violence are complex and diverse including: poverty; substance abuse; and exposure to household violence, media violence, and firearm access.

Young people in high-risk environments need targeted violence prevention counseling. Health professionals serving youth play an integral role in assessing the risk of violence in their patients, identifying resources, and providing support. Health professionals have the opportunity to address violence through various means such as: teaching parents about decreased exposure to violence at home and on television; assessing youth for violence exposure, alcohol/drug use, and weapon carrying; and working directly with youth on conflict resolution and anger management.⁵ Health professionals can also attempt to prevent violence risks by collaborating with schools and community organizations.

According to the American Academy of Pediatrics

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(AAP), establishing a violence prevention education program is a key step to involving practitioners in efforts against violence.⁶ Health professionals need specific education in identification and management of violence-related issues. The AAP and other medical organizations strongly advocate the incorporation of violence prevention into general medical education.⁷ Pediatric residents and medical students are the ideal candidates for violence prevention education because they are the future primary care physicians for children and teens. Moreover, residents already function as primary care physicians for many families in their continuity clinics. Unfortunately, most pediatric residents and medical students do not receive formal training in violence prevention.⁶ There are few scientific evaluations of violence education programs for health professionals.

The purpose of our study was to evaluate the impact of a violence prevention program on the self-efficacy, comfort, and practice of pediatric residents and medical students in identifying violence risks and making appropriate interventions. Two objectives guided our study. The first was to develop an educational program that taught violence prevention to pediatric residents and medical students using teen peer educators. The second objective was to explore the effect of such a program on actual practice by using an adolescent standardized patient (SP) presenting with a violence-related scenario. SPs (mock patients) have been widely used to assess educational interventions.^{8,9} SP interviews establish an absolute standard of performance based on direct observation.¹⁰ Adolescent SPs, in particular, have been shown to be a reliable means of assessing the clinical and interpersonal skills of physicians.¹¹

METHODS

On alternate months, a 3-hour violence prevention workshop was provided to third-year medical students and second-year pediatric residents assigned to a 4-week rotation in the hospital's ambulatory adolescent clinic. Trainees receiving the workshop were categorized as the intervention group. Those medical students and residents that did not receive the workshop were classified as the control group and were provided with the standard ambulatory clinic manual containing articles on violence screening. The evaluation of the workshop included a prerotation and postrotation questionnaire and an SP evaluation (Fig 1). Informed consent was obtained from the participating medical students and residents. The study was approved by the institutional review board at Children's National Medical Center.

Workshop

The workshop was given at the beginning of the rotation and included a didactic lecture, teen panel, role playing with teen health educators, and a feedback session. The workshop was incorporated into a scheduled monthly academic session for the trainees and could be replicated easily in other programs. We will briefly describe the educational component of the workshop; a more detailed outline is available on request.

Lecture

The hour-long didactic session provided an overview of media, firearm, interpersonal, and sexual violence among teens. Risk factors for teen violence, such as drug use, media influences, peer group, and poor self-esteem, were reviewed. The approach to the adolescent interview was also outlined. Participants were instructed to establish confidentiality, use plain language, ask open-ended questions, and remain nonjudgmental in their interview.

The workshop stressed the Home, Education, Activities, Drugs/Alcohol, and Sexuality (HEADS)¹² approach to the adolescent psychosocial history. Trainees were taught to ask about HEADS. In addition to the HEADS approach, participants were instructed to use Fights, Injuries, Sexual Violence, Threats, and Self-Defense Strategies (FISTS)¹³ violence-screening questions (Table 1). Management strategies were discussed, including targeted counseling, clinic follow-up, or additional referral to other health care providers or community services. Community and hospital resources for management and support of violence issues were

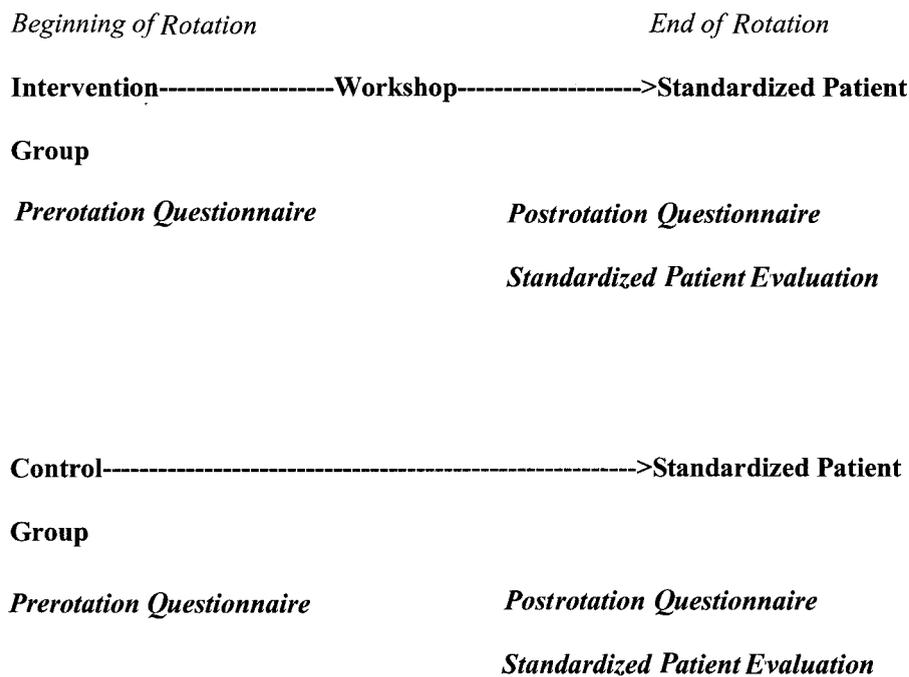


Fig 1. Study design.

TABLE 1. FISTS Screening Questions¹³

Fights—When was your last fight? How many fights have you been in?
Injuries—Have you been injured in a fight recently?
Sexual violence—Has your boyfriend ever hit you?
Threats—Has anyone ever threatened you?
Self-defense strategies—How do you defend yourself?

discussed. A printed FISTS reference, summary of violence statistics, and list of community violence prevention resources were also distributed.

Panel Discussion

Residents and teen health educators from Teens Against the Spread of AIDS (TASA) engaged in a 1-hour panel discussion on violence. Members of this group are specially trained high school students who use drama techniques to teach peers and health professionals about high-risk behaviors and strategies to prevent them. During the panel presentation, the teen educators addressed safety in school, date rape, gangs, firearms, and other violence-related issues. After the presentation, residents and medical students had a panel discussion with the TASA members about demographic and causative factors involved in teen violence.

Role Play/Feedback Session

The residents practiced interviewing skills for adolescent violence risks through one-on-one role play with the teen health educators. The role play used standardized scenarios developed by TASA members (Table 2). Trainees were instructed to establish confidentiality, use FISTS questions, identify the violence-related issue, and make appropriate recommendations. After the role play, the approach and management of the trainees of the scenario were discussed. Trainees received feedback from the teen health educators on their screening skills, with particular emphasis on the use of FISTS questions.

Program Assessment

Trainee Questionnaire

Participants in the intervention and control groups received prerotation and postrotation questionnaires with items adapted from the AAP Ambulatory Care Quality Improvement Program survey¹⁴ and other surveys assessing physician behavior using a social learning framework.¹⁵ The 50-item questionnaire asked about training status, history of previous violence prevention education, and whether respondents routinely inquired about and counseled on a list of adolescent topics including violence.

Using social learning theory, participants were asked about

TABLE 2. Role Play Scenarios

16-Year-Old Male	17-Year-Old Female
Dilemma	
Patient is angry	Patient complains of difficulty sleeping at night
Was involved in fight	History of date rape
Wants to retaliate	Blames self
Has a previous history of fights and firearm use	
Unique aspect	
Let patient know that preventing violence is a legitimate medical concern	Let patient know somatic complaint may be associated with date rape/posttraumatic stress
Ask about	
FISTS questions with special emphasis on fights, injuries, and self-defense strategies	FISTS questions with focus on sexual violence, threats
Target advice	
Be objective	Explain to the patient that she is not the cause. Refer for ongoing counseling
Address retaliation	
Use role playing to show risks	
Refer or provide ongoing counseling	

their value of the particular issue (“How important are the following issues to adolescent health?”), their self-efficacy (“How confident do you feel in providing guidance on the following issues?”), and outcome expectations (“How much do you think a doctor can do to help in each of the following issues. . . ?”). Violence-related issues included fighting history, weapon access, and violence at school. Nonviolence health related topics included school performance, sexual history, and smoking. Questionnaires were anonymous; however, participants were asked to provide a personal identification number to link prerotation and postrotation questionnaires.

SP Evaluation

During the last week of the rotation, all participants saw 1 of 2 adolescent SPs complaining of a persistent headache. Participants did not know that they were seeing an SP at the time of the interview. Adolescent SPs were extensively trained and blinded to participant assignment group. Interrater reliability was assessed by taping select interviews and using an independent rater. The independent rater scores were compared with the SP scores on the same participant.

SPs completed a 14-item evaluation form assessing participant’s performance, including questions from the National Medical Board of Examiner’s Patient Perception Scale.¹⁶ This scale is a valid and accepted tool for evaluating physicians’ interpersonal skills. In addition, SP evaluations assessed identification and management of the violence-related problem and use of the FISTS screening questions. The SP evaluations used a Likert scale to rate the interpersonal skills of participants, and dichotomous response to assess the FISTS use, scenario identification, and management of participants.

Analysis

Data were collected from March 1997 to March 1998. Data were analyzed using SAS, Version 612 (SAS, Cary, NC). Type 1 error was set at 0.05. Because of the small sample size, analysis of prerotation and postrotation questionnaire scores was performed using Wilcoxon signed ranked test, a nonparametric test equivalent to a paired *t* test. Intervention and control questionnaires and SP evaluations were analyzed using the Mann-Whitney *U* test, a nonparametric equivalent for the Student’s *t* test.

RESULTS

Over 12 months, 30 control and 26 intervention participants were recruited. None of the medical students or residents refused to participate in the study. There were no significant differences regarding previous violence-related training or training status (resident vs medical student) between intervention and control participants. Table 3 lists *P* values based on the median score of 4-level Likert response categories. Table 3 also lists frequencies (percentage responding often or not always) based on grouped outcome. Prerotation, there was no difference in questionnaire scores for intervention and control groups (Table 3). Postrotation, intervention participants had increased self-reported screening for violence at school/neighborhood and involvement in fights. Compared with controls, intervention participants reported greater screening, perceived importance, and confidence in counseling. There were no significant differences between the 2 groups in perceptions on the ability of health professionals to help patients with violence-related problems.

SP interrater reliability was established using a generalizability coefficient, which is similar to a Pearson correlation coefficient. Reliabilities of 0.8 or above are typically recommended for educational and psychological tests.¹⁶ On reviewing 5 of the interviews, SPs in this study had high interrater reli-

TABLE 3. Self-Report Questionnaire Responses Comparing Control and Intervention Groups

Preintervention			Postintervention		
Control %	Intervention %	P Value	Control %	Intervention %	P Value
1. "How often do you ask about the following issues during routine care visits?" (Percent responding often or always)‡					
Weapon access/use		—			—
70.8	52.3		83.3	85.7	
Violence at school/neighborhood		—			*
54.1	38.1		75.0	90.5	
Fighting history		—			†
29.2	38.1		41.7	85.7	
2. "How important are each of the following issues to adolescent health in your opinion?" (Percent responding very or extremely important)§					
Weapon access/use		—			*
95.8	95.3		100	100	
Violence at school/neighborhood		—			*
95.8	95.2		100	100	
Fighting history		—			—
91.7	85.7		87.5	100	
3. "How confident do you feel in providing guidance on each of the following issues?" (Percent responding very or extremely confident)§					
Weapon access/use		—			†
29.2	42.9		54.2	90.5	
Violence at school/neighborhood		—			†
25.0	28.6		45.9	85.7	
Fighting history		—			†
33.3	42.8		45.9	90.5	

— indicates not significant.

* Mann-Whitney *U* test, *P* < .01.

† *P* < .05.

‡ Likert response categories: never, occasionally, often, and always.

§ Likert response categories: none, somewhat, very, and extremely.

ability ($\kappa = 0.9$). Intervention participants had significantly higher scores on the SP encounter for interpersonal skills (establishing confidentiality, showing interest, and encouraging questions) compared with controls (*P* < .04; Fig 2). Residents and medical students receiving the training also had higher rates of FISTS use (*P* < .02). Finally, intervention participants correctly identified and managed violence-related scenario more often than did controls (*P* < .0004).

DISCUSSION

Teens lack specific counseling and support regarding the increased risks of violence-related injuries. The results of the AAP Ambulatory Care Quality Improvement Program showed that less than one quarter of the 1072 pediatricians surveyed have pro-

ocols for screening patients at high risk for community and domestic violence. One quarter of the respondents also stated that they rarely or occasionally ask about handguns in the home or access to guns and knives.¹⁴ However, previous investigations have shown that medical practitioners can comfortably ask about violence using standardized protocols.¹⁷

This study evaluated an intervention, which involved teaching residents and medical students to screen, identify, and manage violence risks among adolescents. In routine health visits, an important barrier to the discussion of violence is physician discomfort.¹⁸ To address this, the workshop focused on why violence among teens is important and why teens are at risk for violence. The workshop also provided concrete suggestions for setting the stage and asking teens about violence. Participants were

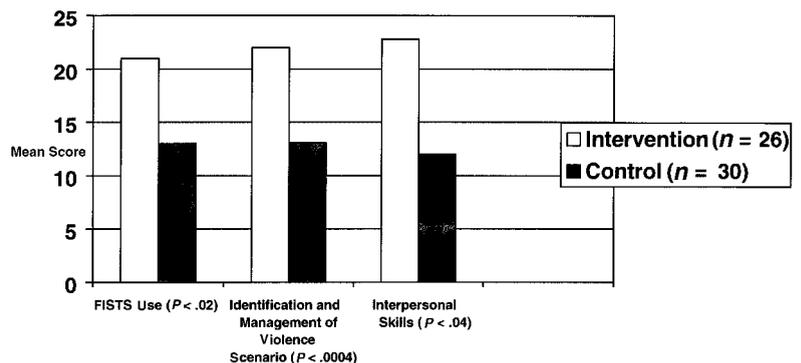


Fig 2. SP evaluation.

* Wilcoxon-sign Test

able to practice screening and management techniques through role play with the teen health educators. They also received feedback about their skills from the health educators. The workshop taught that small steps have an impact on violence prevention and provided residents and medical students with skills to implement realistic change.¹⁹

An individual's subjective perception of their ability to perform a task is a good predictor of behavior. Individuals tend to do things that they feel comfortable doing and that lead to valued outcomes.²⁰ This study showed that intervention participants' perceived importance and comfort in screening for specific violence-related issues improved. The workshop also had an impact on actual behavior: the identification and management of a violence-related scenario. Compared with controls, intervention participants more frequently incorporated violence risk counseling in their patient encounter, as evidenced by the SP evaluations.

Of note, there was increased self-reported screening in both the control and intervention groups post-rotation on some issues, including violence. It is likely that both groups developed screening skills during their adolescent rotation. However, participants in the intervention group reported greater screening and counseling and more favorable attitudes toward violence screening. In addition, SPs blinded to participant study group consistently rated intervention participants higher in violence-screening skills compared with controls.

The use of violence-related role play with teen peer educators is a unique and innovative feature of this study. Youth health educators can be a valuable resource for teaching violence education. In this study, participants received direct feedback about their performance from the educators during the workshop. Kent et al²¹ showed that students tend to retain impressions and information obtained from patients (in this case, simulated ones) more vividly than theoretical classroom learning.

The use of SPs as both a teaching and evaluation tool has been documented.²² A previous study by Greenberg et al²³ showed that SPs could be used successfully to educate trainees in improving skills in conveying bad news. Trainees rated the SPs as a highly effective means of learning these skills. SPs also enable the learner to be evaluated in a controlled situation and allow for objective assessment of real practice. In fact, SPs have been shown to be just as accurate as physicians in evaluating and recording the clinical performance of participants on checklists.²⁴ One of the assumed disadvantages of SPs is that a long training time is required to produce a high-quality simulation.²⁵ In the study, SPs developed simulated scenarios within 2 to 3 hours. We encouraged the SPs in their simulated roles to express the sentiments and concerns experienced by an adolescent. Costs were minimal. We paid for the time of the SPs and the peer education group to develop and perform the scenarios.

There are some limitations to this study. Because of the small sample size, medical students and resident scores were combined for the questionnaires

and SP evaluations. Differences between medical student and resident responses were not analyzed. Cross-contamination may have occurred attributable to case discussion among participants receiving the SP scenario. Residents and medical students may have reviewed details of the case of the SPs with each other. Finally, long-term assessment was not performed because of the difficulty in tracking residents and medical students over time and in repeating questionnaires or SP scenarios in other rotations.

Longitudinal follow-up is necessary to determine whether short-term improvements lead to a permanent acquisition of skills. Usually, learned behavioral change is affected immediately but decreases in frequency without the benefit of a booster intervention.¹⁹ We were able to demonstrate a short-term beneficial effect in performance after the workshop. Repeated evaluations of skills over a longer period would be necessary to study the long-term benefits.

This study illustrates that a brief, directed violence education program could provide physicians with the motivation and skills essential to discuss violence prevention with their adolescent patients. An abbreviated form of this workshop is continuing on a regular basis. Sustained educational efforts are needed to increase skills and comfort with violence intervention so that it will be routine. Ongoing reinforcement by health professionals who model the screening in day-to-day practice with trainees can facilitate this effort.

Although the prevalence of violence in communities is alarming, practitioners must not accept this as inevitable. Those serving adolescents can incorporate violence screening into routine practice, monitor for behavioral symptoms, advocate nonviolent behavior, teach alternatives for handling anger, identify resources, refer at-risk youth for counseling and services, and get involved in community violence prevention efforts. "Health professionals can advocate in the present to make youth believe in the future."¹⁹

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