

# Using Multimedia to Teach Conflict-Resolution Skills to Young Adolescents

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SMART Talk is a multimedia, computer-based violence-prevention intervention that employs games, simulations, graphics, cartoons, and interactive interviews to engage young adolescents in learning new skills to resolve conflicts without violence. Eight modules cover anger management, dispute resolution, and perspective taking. SMART Talk was pilot-tested in a small-city middle school during a three-week period. After the pilot testing, SMART Talk was implemented in a middle school (sixth, seventh, and eighth grades) with a diverse socioeconomic population, located within 10 miles of a major Midwestern metropolis. The 16-week intervention began in January. Students had access to SMART Talk during the school day and could use the computer alone or with a partner. Subjects for whom parental permission ( $n = 558$ ) was granted were given a preintervention and postintervention survey. The survey measured demographic, psychosocial, and environmental factors as well as aggressive and other violence-related behaviors. After the pretest, two teams from each grade were randomly assigned to the intervention group and one team to the control group. Only students in the intervention group had access to SMART Talk during the 16-week intervention period. After the posttest, control subjects had access to SMART Talk. Additional data for

the evaluation were collected through archival records of grades and school disciplinary actions. All variables indicated comparability between intervention and control groups. As a population, 84% of the students were Caucasian and 9% were African American. Psychosocial variables indicated 30-day frequently angry (64%), 30-day depression (15%), and impulsivity (28%). Environmental variables indicated that 68% reported they could get a gun easily, 59% feel unsafe in their neighborhood, and 24% were personally affected by violence. Violence-related variables indicated 30-day threatened to hit (45%), 30-day hit someone (56%), bullying behavior (29%), and fighting (38%). Overall, a significant percentage of the sixth-, seventh-, and eighth-graders in this study have engaged in aggressive or risky behaviors such as fighting and bullying other students. Because many of these students frequently are angry, feel unsafe in their neighborhood, and have been personally affected by violence, violence-prevention programs are warranted in this school. SMART Talk gave the students an avenue to explore anger-management strategies and conflict-resolution and perspective-taking skills. Medical Subject Headings (MeSH): violence, adolescents, multimedia, computer graphics, prevention, intervention studies, conflict. [Am J Prev Med 1996;12(Suppl 2):65-74]

Violence in the adolescent population is a serious public health concern.<sup>1,2</sup> All adolescents are at an increasing risk for exposure either as a victim, witness, or perpetrator.<sup>1</sup> Schools and other youth agencies have begun implementing programs aimed at the prevention of violence in adolescents.<sup>4-7</sup> Until recently, most

efforts to reduce violence in schools and among students involved stronger and more strictly enforced disciplinary actions and traditional didactic approaches such as curricula, assemblies, or videos. Alternative approaches that focus on prevention strategies such as teaching interpersonal skills recently have been explored.<sup>8</sup>

We describe a multimedia violence-prevention intervention for young adolescents called SMART Talk (Students Managing Anger Resolution Together). SMART Talk was designed to help middle-school students practice social skills (anger management, perspective taking, and mediation) that would decrease the number and intensity of violent incidents.

SMART Talk was an outgrowth of the principal investigator's work in using multimedia to present prevention information on other areas such as alcohol and other drugs, sexuality, HIV/AIDS, smoking, diet and exercise, and stress management.<sup>9</sup> The development drew heavily on violence-prevention programs

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designed to be used in small groups, such as Anger Replacement Therapy (ART), and in classrooms, such as conflict-resolution curricula.

The intervention is targeted to sixth-, seventh-, and eighth-grade students in a middle school. The school is contiguous to a major metropolitan area in the Midwest and includes minority students bused from the city as part of a desegregation plan and poor, rural Caucasian students living in the school district. About 30% of the population qualifies for free or reduced-price lunch.

### Theory

Many strategies are needed when developing a comprehensive approach to a complex social issue such as violence prevention. In schools, three approaches are most frequently found: curricula for the general population, mediation for specific incidents, and skills training for students with persistent problems.<sup>7</sup>

Curricula expose everyone in a class to social skills aimed at controlling anger and resolving conflicts. But because the timing and delivery are controlled by teacher need rather than student need, the lessons may not be timely or allow students sufficient time for practice and coaching. For those students who are actively engaged in a conflict with another student, peer mediation programs<sup>8,10</sup> can help them learn how to deal with the immediate situation as well as learn skills that will be valuable in later conflicts. However, only those students who are trained or who participate in mediation receive the benefits. The more intensive skill-building programs, such as ART,<sup>11</sup> are usually offered only to the most aggressive teens. Thus, the common approaches provide little flexibility for the student or reach only limited students, or both.

Computer-based interactive interventions (multimedia) can provide accessibility and flexibility to all students. Multimedia has been successful in teaching other complex interpersonal and prevention skills and strategies.<sup>9,12,13</sup> This success may be due to several aspects of multimedia that overcome some of the barriers to learning inherent in more traditional methods.

Programming techniques, such as branching the flow of the program based on user responses, have the potential to provide considerable personalization and flexibility. Another benefit from using multimedia is that the computer is a tireless teacher. Users can repeat a simulation or interview as many times as they wish without embarrassment or judgment of others. The one-to-one interaction between the user and the computer permits students to receive the information when it is most useful to them, not when the teacher or the curriculum determines the need for conflict-management lessons or when the mediators are available. Students' control over the choice of information and sequencing of materials empowers them and allows the material to be adapted to individual learning styles.<sup>14</sup>

Querying the computer preserves the anonymity that can be critical in dealing with sensitive interpersonal skills. Anonymity also allows the student to experiment with alternative roles or situations, a feature that is not possible with most other interventions. The lure of the interactive and graphic interface on the system creates a game-like atmosphere and attracts students, particularly boys, who might normally shun traditional conflict-management programs.<sup>15,16</sup> The multimedia technology maximizes the use of graphics, scanned photos to create "slide shows" and computer interviews, use of video, or teacher-led

activities in conjunction with the module to strengthen its potential to engage adolescents.<sup>17</sup> Students are not only attracted to this intervention; they seek out relevant information, selecting parts of the programs (sex, alcohol and other drugs, smoking, diet, etc.) relevant to the risk-taking behavior in which they have already engaged.<sup>9</sup>

The design of SMART Talk is grounded in three theoretical approaches: stages of development from novice to expert, social learning theory, and the ART model.<sup>11</sup> Dreyfus and Dreyfus<sup>18</sup> have developed a five-stage model based on their studies of the progression from novice to expert. SMART Talk begins with clear instructions, or rules, about how to accomplish a skill, then uses a series of games and simulations to guide students through subsequent stages in the model (Appendix 1).

Bandura's social learning theory<sup>19</sup> has been effective in changing complex behaviors. According to social learning theory, people learn a variety of social skills by observing and interacting with parents, other significant adults, peers, and others in the environment, including media role models.

Knapczyk<sup>20</sup> found that by using role models based on social learning theory, he was able to reduce incidence of aggression in boys referred to a social skills program because of their aggressive behavior. The role models used in the study had characteristics similar to those of the viewer. They displayed competence, but not necessarily perfection in the skills modeled, and had perceived status to the student. SMART Talk employs computer characters as role models to provide teens with conflict-resolution and mediation-management strategies.

ART was developed to deal with violent and delinquent adolescents. The theory is based on the assumption that these young people are deficient in prosocial behaviors such as negotiating differences; responding effectively to teasing, mistakes, rejection, or anger; and helping others. ART combines a psycho-educational intervention with anger-control training and moral education. Research indicates that ART is a useful intervention for aggressive or assaultive youth.<sup>11</sup>

### Intervention Plan

SMART Talk runs on a computer and employs multimedia features such as games, simulations, graphics, cartoons, animation, and interactive interviews to engage young adolescents in learning new skills to resolve conflicts without violence. Eight modules have been developed in three areas: anger management, dispute resolution, and perspective taking (Appendix 2). Modules can be used sequentially, but all are designed as individual programs and can be used in any order without losing continuity or potential impact.

Since anger, for adolescents, is a major precipitator of fighting or violence, four modules focus on anger management and control (What's Anger?, Triggers and Fuses, Anger Busters, and Channel Surfin') and are based on the ART model.<sup>21,22</sup> In What's Anger?, students learn didactically about the anger model presented in ART. In Triggers and Fuses, students have the opportunity to identify situations and events most likely to trigger anger in them. In Anger Busters, students learn the general guidelines for confronting an angry person or an angry situation and find specific strategies that are effective when the student is angry. These components of the ART model are combined and implemented in the Channel Surfin' module, which employs game-like features (e.g., timer, scoring, random events)

that provide students with practice of the model in authentic situations.

The dispute-resolution area consists of two modules, Talking It Out and Teen Talk. Talking It Out uses the branching and interactive interview capabilities of the computer to walk two adolescents in conflict through a problem-solving process. This process is based on existing peer mediation programs from The San Francisco Community Boards, Resolving Conflict Creatively, and Peaceworks. After reaching consensus on a solution, a contract for each student is printed. Talking It Out can be accessed by either two students who are in a dispute or a single user who has come to the system to learn about this process. When a single user accesses the program, the student is given a didactic presentation of the mediation process and an interactive example.

In the Teen Talk module, teen role models provide a discussion about conflict-resolution and mediation strategies, as well as their own personal experiences as mediators. The module is in an interview format in which the user selects a question and then is able to view the teen's actual response. Questions include items such as, "What's the best way to work out a problem?" and "How do you stay out of trouble?"

The last set of modules (Celebrity Interviews, What's on THEIR Minds?) involve perspective taking. The role models in Celebrity Interviews are a popular recording artist, a football player, a comic book artist, and a columnist for a popular teenage magazine. Students have the opportunity to ask them questions and hear their responses on how they handle anger and conflict as well as what were some of the experiences they had when they were early adolescents. Also included in this section is a program to help young adolescents understand other students' perspectives on situations. In What's on THEIR Minds?, students are presented with conflict situations and must determine as many reasons as possible why these situations have occurred.

**Program development.** SMART Talk was developed using standard instructional design strategies<sup>22,24</sup> emphasizing input and feedback from three groups of adolescents. A 10-member Teen Advisory Panel met with the researchers biweekly to review concepts, scripts, graphics, and, finally, the modules. One of the panel's recommendations identified older teens and celebrities as important role models. Project staff interviewed these suggested role models and integrated their opinions, experiences, and advice throughout the program.

Early in the development process we interviewed nine teens who had been trained as peer mediators in an urban high school. Their advice appears regularly throughout the program. For example, in the program that teaches alternative activities to fighting, arguing, or hitting, teen role models give examples of using a particular strategy or elaborate on the effectiveness of that strategy.

Finally, the modules included the most common types of conflict mentioned by 200 rural and urban middle-school students who were asked to describe situations in which they felt anger or conflict.

**Pilot testing.** SMART Talk was pilot-tested with seventh-grade students in a small-city middle school with a population similar to that of the evaluation site. During the three weeks SMART Talk was available, 97% (or 106) of the students used it and provided written and oral feedback.

**Implementation and training.** SMART Talk was fully implemented and evaluated in a middle school with a diverse socioeco-

Computer group	O <sub>1</sub>	X <sub>1</sub>	O <sub>2</sub>	X <sub>2</sub>
Control group	O <sub>1</sub>		O <sub>2</sub>	X <sub>2</sub>
Where:				

O<sub>1</sub> represents baseline data in January 1995.

O<sub>2</sub> represents postintervention data in May 1995.

X<sub>1</sub> represents the implementation of SMART Talk.

X<sub>2</sub> represents the implementation of SMART Talk in fall 1995.

Figure 1. Overview of evaluation design.

nomic population, located fewer than 10 miles from the heart of a major Midwestern metropolis. The intervention began in January and lasted 16 weeks. Computer equipment was installed in meeting rooms close to classrooms. This gave students privacy when using SMART Talk and minimized time needed to get to the computer. Students had one class period (40 minutes) of training on both the content and the operation of the equipment. Students had access to SMART Talk during the school day. In most classes, students volunteered to use SMART Talk and then were assigned a class period when they could use the program. One staff person from the research project monitored the room several times a week (22-28 hours), providing consultation and immediate repair of software problems.

A representative group of teachers and administrators provided project staff with feedback on program content and assisted in designing the implementation process. Other administrators and faculty were introduced to SMART Talk at an hour-long faculty meeting. Students were also hired to turn on the equipment each morning and to monitor it on the days when project staff were not in the building.

#### Evaluation Design

The evaluation is based on a pretest-posttest design (Figure 1). At the intervention site students in each grade were randomly assigned to three teams for their academic classes at the beginning of each school year. For the evaluation of SMART Talk, two teams in each grade were randomly assigned to the intervention group and one team to the control group. Assignment was done at the team level rather than at the individual level to prevent contamination that would have resulted from both intervention and control subjects attending classes together. Only students in the intervention group had access to SMART Talk during the 16-week period.

Subjects who had parental permission were given a survey before and immediately after the intervention. The survey measured demographic, psychosocial, and environmental factors, as well as aggressive and other violence-related behaviors. Although most items were derived from previously published materials, some were developed by the project investigators based on results from focus groups.<sup>25</sup> Item/scale descriptions and reliability coefficients appear in Appendix 3.

Project staff administered the survey by project staff during an early morning free period followed by two make-up days. The cafeteria and large-group instruction room were used for the survey administration. To address varying degrees of reading ability, the survey was read to the students. Monitors were also on hand to answer questions and supervise the administration.

Additional data for the evaluation were collected through archival records of grades and school disciplinary actions. Infor-

Table 1. Distribution of participants, by grade

	n
Intervention group	
Sixth graders	117
Seventh graders	125
Eighth graders	103
Total intervention group	345
Control group	
Sixth graders	117
Seventh graders	44
Eighth graders	52
Total control group	213
Total sample	558

mation about the frequency and duration of computer use and choice of components will be assessed as well.

**Baseline Data**

Of the 1,361 students who were registered, 700 (51%) returned permission forms. Of these, 142 had been denied permission, thus leaving a sample of 558. Students returning permission forms were more likely to be female and in the sixth grade. No other significant differences were found between study participants and nonparticipants.

In comparing treatment to control groups, the distribution by grade of participants was different for intervention students than for control students. Intervention students were evenly distributed across the grades, whereas the control group had a disproportionate number of sixth-grade students ( $\chi^2[1] = 22.29, P < .01$ ) (Table 1). There were no significant differences in the gender

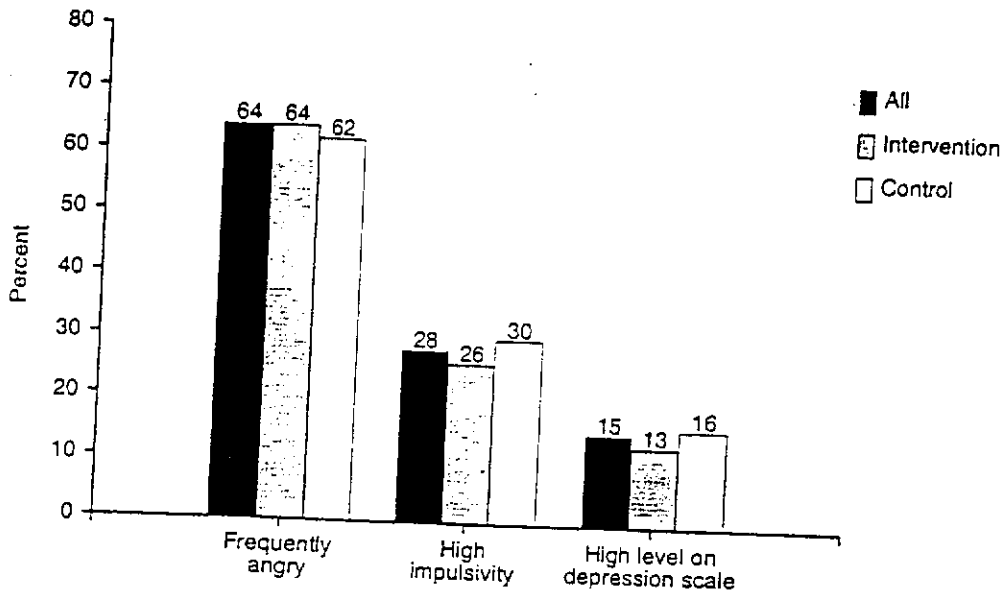


Figure 2. Baseline prevalence of psychosocial variables.

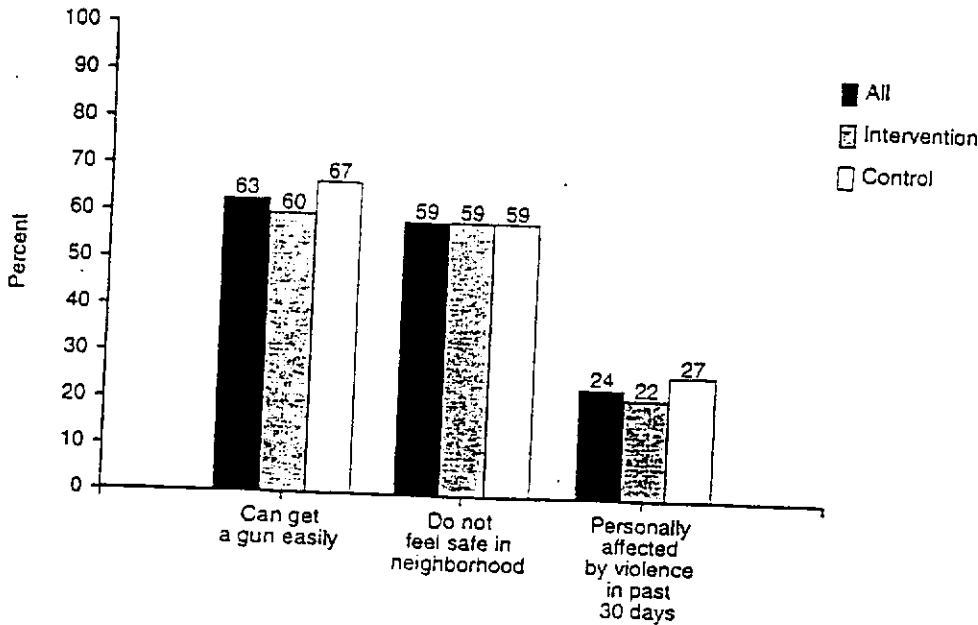


Figure 3. Baseline experiences related to violence.

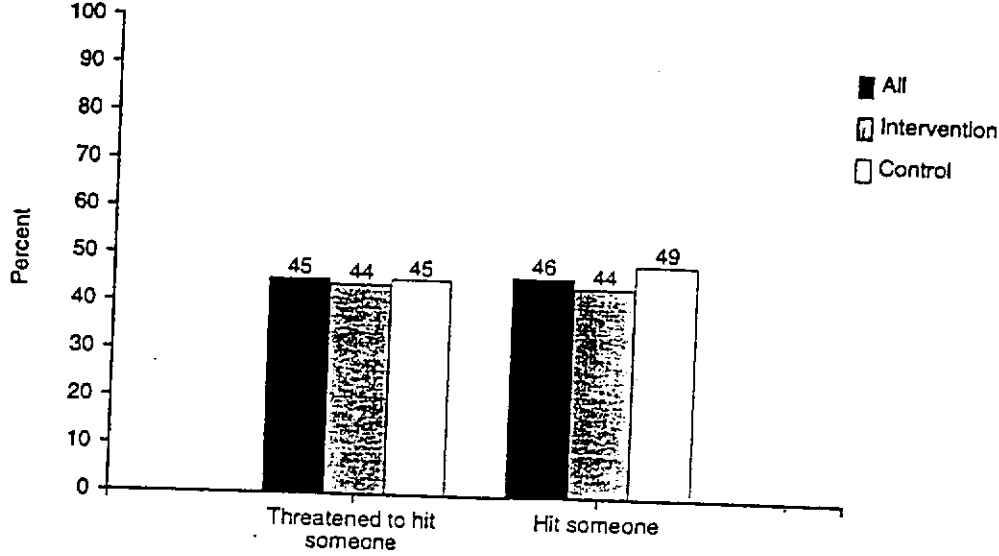


Figure 4. Baseline prevalence of risk behaviors in past 30 days.

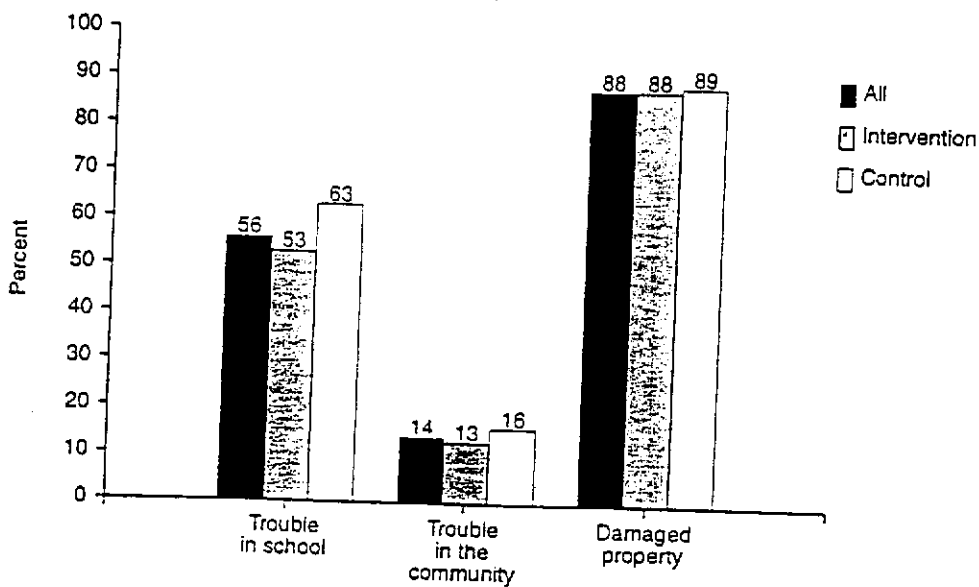


Figure 5. Baseline prevalence of other risk behaviors in past 30 days.

makeup between the intervention and control groups ( $\chi^2[1] = .0003, P > .05$ ). The ethnicity of students ( $\chi^2[1] = 2.04, P > .05$ ) (84% Caucasian, 9% African American, 3% biracial, 3% other), the percentage of students receiving free or reduced-price lunch ( $\chi^2[1] = 3.22, P > .05$ ) (28%), and the number of makeup survey takers ( $\chi^2[1] = .22, P > .05$ ) (8%) were equivalent between the intervention and control groups.

Nearly two thirds (64%) of the sample reported they were frequently angry in the past 30 days, with no differences between the intervention and control group ( $\chi^2[1] = 2.28, P > .05$ ). Twenty-eight percent of students demonstrated high impulsivity scale scores and reported often or always that "they can't wait, they do things without thinking," or "they need a lot of self-control to stay out of trouble." On the depression scale, 15% of the students reported high levels of depression (Figure 2). Two separate one-way analyses of variance (ANOVAs) yielded no sig-

nificant differences between the intervention group and control group on both the impulsivity scale ( $F[1, 557] = .06, P > .05$ ) and the depression scale ( $F[1, 557] = .74, P > .05$ ).

Sixty-three percent of the sample reported that they could get a gun easily, and 59% of the students did not feel safe in their neighborhoods. Twenty-four percent of the sample had been personally affected by violence in the past 30 days (Figure 3). There were no significant differences between the intervention and the control groups ( $\chi^2 = 3.13, 3.29, .31$  respectively,  $P > .05$ , respectively).

Within the past 30 days, when in a conflict situation, 45% of the sample reported that they threatened to hit the other party and 46% reported that they hit someone (Figure 4). Fifty-six percent reported getting in trouble in school, 14% reported getting into trouble in the community, and 88% reported having damaged or destroyed property, all in the past 30 days (Figure 5). No

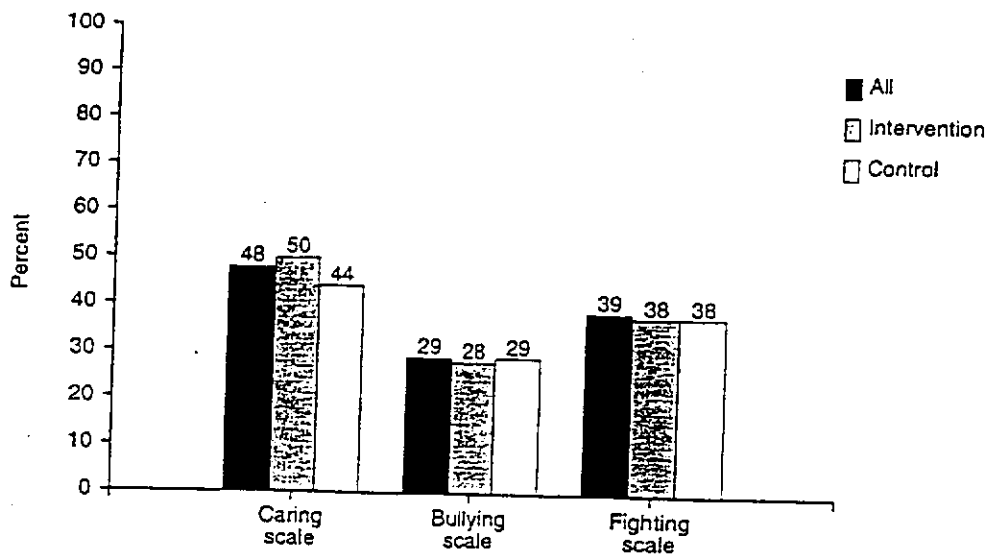


Figure 6. Baseline prevalence of individuals with high scale scores.

significant differences were found between the intervention and control groups ( $\chi^2 = .007, .13, 2.13, 1.58, .145$ , respectively,  $P > .05$ ).

Although bullying and fighting were common, nearly half of the sample (48%) had a high incidence of caring behaviors such as helping a student with school work or listening to someone who was upset. Twenty-nine percent of the students reported engaging in high amounts of bullying behavior, and 38% had high scores on the fighting scale (Figure 6). Three separate ANOVAs yielded no significant differences between the intervention group and control group on the caring scale ( $F[1, 557] = 1.70, P > .05$ ), the bullying scale ( $F[1, 557] = .05, P > .05$ ), and the fighting scale ( $F[1, 557] = .07, P > .05$ ).

## CONCLUSIONS

Data from this diverse school population indicate a substantial amount of aggressive and violent behavior. Guns are easily accessible, and most students do not feel safe in their own neighborhoods. About a quarter of these young teens have been personally affected by violence. A significant percentage of the students have engaged in aggressive or risky behaviors such as damaging property or hitting when in a conflict. Such concerns warrant serious attention.

SMART Talk is designed to help teens resolve disputes by walking them through a dispute-resolution process and teaching anger-management strategies and perspective taking. This multi-

## LESSONS LEARNED

### Building Support and Developing Relationships

- Experienced people, including members of the target population, can provide helpful advice through all phases of development and implementation of the program.
- Viewing people at the sites as co-investigators and program staff as members of the school team promotes positive relationships.
- Keeping teachers and administrators informed about problems and successes enlists their help and cooperation in the ongoing project.

### Improving Intervention and Evaluation

- For a program of this magnitude and complexity, staff need extra time and effort to meet deadlines and project demands.
- Pilot-testing materials and processes improves the product and operation of both the development and evaluation of the program.
- Involving representatives of the target population in all phases of program development is critical to the develop-

ment of materials that are attractive and engaging to the target audience.

- Material that maximizes interaction and minimizes reading engages students. Rewarding correct answers also motivates them.
- The most effective strategy for enlisting parental permission for students to participate in the study was to provide incentives to teachers (basketball tickets) to secure parental permission.
- Thorough training and debriefing (including hands-on use of the materials) for survey administrators and site liaison personnel promote smoother operations.
- Reading the questions on the survey form to the age group involved in this project (sixth-eighth grade) facilitates comprehension and regulates the time needed to administer the survey.

### Underlying Principles

- To be successful, everyone involved in the program must take pride in its ownership and its outcomes.

media intervention with its combination of computer, graphics, cartoons, video, and animation is attractive to middle-school students and engages them in learning new skills.

The process of developing SMART Talk has led to several suggestions for future developers and evaluators (see the Lessons Learned box). Since we began this project with a strong background in prevention and instructional design, many of the processes and strategies we had learned on other projects were affirmed in this project and helped to strengthen it. The most important lesson is developing and maintaining positive relationships with key actors in a project. In our case, these included project staff, the administrators and faculty at the experimental schools, and the student users.

To keep improving the intervention and evaluation, feedback at each step, particularly from the target population, is also essential. In the evaluation process, securing parental permission became a potential roadblock. Motivated teachers were the best

allies. Many teachers and administrators were skeptical about the intervention until they were able to use the software themselves. Finally, an underlying principle for a project of this magnitude and complexity is that conditions must be created in which everyone involved feels ownership in the project and its outcomes.

SMART Talk has been designed to enhance an organization's conflict-management or violence-prevention program. This multimedia program is intended to provide an additional resource that is appealing to adolescents and meets their learning needs. It is not intended to replace classroom instruction or other human interventions. There is evidence to support the need for reaching a high percentage of youth with violence-prevention skills. Although many school programs and strategies may be available for a number of personnel and organizational reasons, students may not be receiving these. Therefore, SMART Talk is an attractive tool to meet students' needs for violence-prevention skills.

## APPENDIX I

### Adaptation of the Dreyfus and Dreyfus (1986) Skill Acquisition Model

Stage	Description
1. Novice	Explicit rule learning Focus on rules rather than contexts
2. Advanced beginner	Exploration of situations Application of rules and maxims based on situational aspects
3. Competence	Increased awareness of situational features and aspects resulting in a hierarchical approach to decision making starting with selecting a plan of action The entire situation is relevant rather than just features and aspects of the situation
4. Proficiency	Recognition of situations results in selecting a plan based on experience Conscious effort is not necessary for developing a sense of the situation but is necessary for determining how a plan will be carried out
5. Expertise	Conscious awareness is not necessary to understand the situation, select and carry out a plan, or learn from an experience

## APPENDIX 2

### SMART Talk Program Descriptions

Module	Description	Type of intervention*
<u>Anger management</u>		
What's Anger?	Didactic presentation of ART model	Cognitive-behavioral
Triggers and Fuses	Interactive interview: user identifies own triggers and fuses (assessment)	Cognitive-behavioral
Anger Busters	Presents general guidelines for dealing with an angry person or an anger-producing situation and gives specific strategies for de-escalating angry situations. Opportunities for practice included.	Social skills
Channel Surfin'	Capstone game in which all anger management skills are practiced in authentic situations, such as being pushed in the halls, hearing rumors about yourself, having something taken from your locker.	Cognitive-behavioral/social skills
<u>Dispute resolution</u>		
Talking it Out	Interactive interview walks two disputants through a mediation process. Contract of agreement is printed for users. Can be used by one or two students.	Mediation/conflict resolution

(continued)

Module	Description	Type of intervention*
Teen Talk	Four high-school students relate their experiences as mediators.	Role modeling
<u>Perspective taking</u>		
Celebrity Interviews	Four celebrities describe how they resolve conflict and manage the stresses of interpersonal relationships.	Role modeling
What's on THEIR mind?	In game show format, users identify various reasons underlying an action to help them better understand other perspectives.	Cognitive-behavioral

\*Based on Tolan and Guerra.<sup>4</sup>

## APPENDIX 3

## Summary of Outcome Measures for Evaluating SMART Talk

Variable	Item/scale/instrument	Description
Demographics	Indiana University Teen Conflict Survey 1995	Grade, gender, race/ethnicity were taken from the survey. Free/reduced-price lunch data come from school records.
Environmental variables	Indiana University Teen Conflict Survey 1995	Neighborhood safety, personally affected by violence, and accessibility to guns were all measured with single items on the survey.
Anger	Indiana University Teen Conflict Survey 1995	In a single item, students were asked how often, in the past 30 days, they "frequently got angry." Response choices ranged from "Never" (1) to "5 or more times" (5).
Impulsivity	Indiana University Teen Conflict Survey 1995	Impulsivity was assessed by asking the students how often, in the past 30 days, they had a hard time sitting still, started things but had a hard time finishing them, did things without thinking, and needed to use a lot of self-control to keep out of trouble. The five response choices offered ranged from "Never" (1) to "Always" (5) (Cronbach's alpha = .62). A cutoff score of 14 (out of a possible 20) yielded the percentage of students who self-reported difficulty with impulse control.
Depression	Abbreviated UT-Health Science Center depression scale <sup>26</sup>	Self-reported depression was measured by an abbreviated version of the University of Texas depression scale composed of six items and responses ranging from Never (1) to Always (5). Students were asked how often, in the past 30 days, they felt very sad, grouchy or irritable; hopeless about the future; like not eating or eating more than usual; like sleeping more or less than usual; and unable to concentrate on schoolwork. For the present sample, Cronbach's alpha internal consistency was .74. To determine the percentage of students who demonstrated an elevated depression score, a cutoff score of 21 (out of a possible 30) was established and reflected those students who responded at least "often" to each question.
Fighting	Modified UT-Health Science Center Aggression Scale <sup>26</sup>	Self-reported aggressive behavior was measured by five items based on the University of Texas Aggression Scale, which asked students how often, in the past 30 days, they hit back when hit first; encouraged other students to fight; pushed, slapped, shoved, or kicked other students; got into a physical fight when angry; and walked away from a fight. Again, response choices included "No opportunity or never" (1) to "5 or more times" (4). A Cronbach alpha of .73 was demonstrated and a cutoff score of 14 (out of a possible 20)

(continued)



Variable	Item/scale/instrument	Description
Bullying	Modified UT-Health Science Center Aggression Scale <sup>26</sup>	included those students who reported frequencies of at least "3 or 4 times." Four items based on the University of Texas Aggression Scale served to assess the frequency of bullying behavior in the past 30 days. Response choices ranged from "No opportunity or Never" (1) to "5 or more times" (4) (Cronbach's alpha = .83). Students were asked how often they teased other students, called other students names, threatened to hit or hurt another student, and said things about students to make other students laugh. Those students with a score above 10 (out of a possible 16) were considered to have high frequency of bullying behavior.
Caring/cooperative behavior	Modified UT-Health Science Aggression Scale <sup>26</sup>	An eight-item scale based on items on the University of Texas Aggression Scale investigated the frequency of caring and cooperative behavior in the past 30 days. Responses ranged from "No opportunity or never" (1) to "5 or more times" (4) (Cronbach's alpha = .60). This scale included behaviors such as helping someone stay out of a fight, cooperated with others, gave someone a compliment, and helped someone solve a problem. A cutoff score of 20 (out of a possible 32) indicated a high frequency of caring and cooperative behavior.
Violent conflict resolution skills	Conflict Tactics Scale <sup>27</sup>	To assess the percentage of students who use violent strategies when faced with a conflict, two items from the Conflict Tactics Scale were analyzed. Students were asked how often they "threatened to hit" or "did hit" when in conflict with another student in the past 30 days. Those students who were not in a conflict in the past 30 days were not included in this analysis. The response choices ranged from "Never" to "5 or more times."

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