

# CHAPTER 9

## UNDERSTANDING THE RELATIONSHIP BETWEEN CARRYING WEAPONS TO SCHOOL AND FIGHTING\*

*Stephen M. Cox, Timothy S. Bynum, and William S. Davidson*

*Abstract: The study explored the individual characteristics of students who bring weapons to school (number of previous fights, attitude toward fighting, self-efficacy, amount of observed delinquency, self-reported delinquency, attitude toward school, and perception of school safety). Survey responses were obtained from 944 middle school students from a large Midwestern school district. The study found that students who sporadically bring weapons to school are aggressors (males, believe in using violence, often participate in delinquent acts, and have been victimized) while students who frequently carry weapons to school do so for protection. The conclusions center on the importance on relying less on increased school security (metal detectors, armed security guards, and random locker sweeps) and more on school environment improvement programs.*

### INTRODUCTION

In-school violence continues to receive a significant amount of attention in the media and from policymakers. While many trends in school crime and violence have decreased since the early 1990s, the occurrence of serious incidents and the high fear of violence among students and teachers remains a concern (U.S. Department of Education, 1999). Many of the problems associated with school violence center on the prevalence of students carrying weapons to school and fights among students (Kenney & Watson, 1998).

During the 1996–1997 school year, 10 percent of all public schools called for police intervention as a result of a serious violent crime (e.g., murder, rape, suicide, fight with a weapon, robbery) (U.S. Department of Education, 2001). Twelve percent of public middle schools and 13% of public high schools

\*Please address correspondence to Stephen M. Cox, Department of Criminology and Criminal Justice, Central Connecticut State University, 615 Stanley Ave., New Britain, CT 06050, e-mail: coxs@ccsu.edu

reported at least one physical attack or a fight with a weapon needing police attention. These percentages were much higher for physical attacks or fights not involving weapons (51% of middle schools and 55% of high schools)(U.S. Department of Education, 2001). Furthermore, 18 percent of middle school principals and 37 percent of high school principals reported that their school had at least one serious discipline issue (U.S. Department of Education, 1997).

The number of school-associated deaths increased in the latter half of the 1990s. From 1992 to 1994, there were 105 school-associated deaths (Kachur et al., 1996). Eighty-one percent of these deaths (85) occurred as a result of an interpersonal dispute and 94 percent involved a gun or a knife. During the 1997-1998 school year, there were 58 school-associated deaths (U.S. Department of Education, 1999). Forty-six were homicides (80 percent) and eleven were suicides (one student was killed by a police officer at school). There were five multiple victim homicides during the 1997-1998 school year, the highest number for one school year in the 1990s.

Although the number of deaths in school and the number of multiple victim homicides are relatively low, violent incidents and fear of violence can have a profound effect on the educational process. Schools with high rates of crime and violence are less effective in educating students. These schools have lower levels of student achievement, higher rates of absenteeism, and more dropouts (Binns & Markow, 1999; Christie & Toomey, 1990; Hazler, 2000; Lawrence, 1998; Lowry et al., 1995). Even in schools having a low percentage of students being victimized, a few violent acts can have far reaching detrimental effects for a large number of students. Fear of victimization has been found to inhibit students' educational and psychological development (Assmussen, 1992; Christie & Toomey, 1990).

School-related violence has been attributed to interpersonal fighting among students and weapons being brought to school. A national survey of elementary and secondary school principals revealed that 21 percent of all principals believed that physical fighting was a serious or moderate problem (U.S. Department of Education, 1998a). The Centers for Disease Control (CDC) (1998) found that 37 percent of all students in the ninth through the twelfth grades had been in at least one physical fight in a twelve-month period. Overall, the CDC estimated that approximately 115 physical fights occurred per 100 students.

While students bringing weapons to school is not a new phenomenon, it happens at an alarming rate (Gaustad, 1991; National Center for School Safety, 1993; U.S. Department of Education, 1998). For instance, 35 percent of sixth-through eighth-grade students and 48 percent of ninth- through twelfth-grade students reported they had seen students bring weapons to school (Office of Juvenile Justice and Delinquency Prevention [OJJDP], 1996). Almost one-half of eighth-grade students surveyed had seen a weapon (44 percent), while 38 percent of the seventh graders and 24 percent of the sixth-grade students had observed a student with a weapon. More recently, the Centers for Disease Control reported that 18 percent of students nationwide had carried a weapon to school at least once in the month prior to their survey, and an estimated 74 incidents of weapon carrying took place per 100 students over the same period (Centers for Disease Control, 1998).

The increase in physical fighting and weapon carrying has commonly been explained by social learning theory. Social learning theorists suggest that violent behavior begins with the perception of a disagreement and is followed

Under

STUDEN

Re  
ly  
hi  
lo  
ov  
co  
bu  
vic  
  
lyj  
inu  
ag  
wa  
siv  
we  
  
zle  
bec  
the  
dif  
gu  
den

1 needing police attacks or fights at schools)(U.S. Dept. of Education, 1997). In the latter half of the 1990s (Kachur et al., 1997), a result of an increase in knife attacks (U.S. Department of Education, 1997). There is a trend at school, the

of multiple victims of violence can be seen with high rates of violence at these schools have increased, and more so (Hazler, 2000; Hazler, 2000; a low percentage of students reaching detritization has been observed (As-

l fighting among elementary school principals believe (U.S. Department of Education) (1998) found that 6th grades had been the highest, the CDC estimates that 10% of students

phenomenon, it is a major concern for School Safety, 10 percent of sixth-grade students at a twelfth-grade school (Office of Education) (1996). Almost one-third (33 percent), while 10th-grade students at the Centers for Disease Control carried a weapon at an estimated 74 percent during the same period

; has commonly been reported. Studies suggest that this trend is followed

by a learned response (Bandura, 1973; Goldstein, 1988; Okey, 1992; Pallone & Hennessy, 1992). That is, youth perceive that they have been wronged in some way by another youth and will seek retribution in order to right the wrong. These youth will resort to violence rather than other alternatives because this has become the learned (and often accepted) response to resolving conflicts.

Based on the social learning perspective, physical fighting is a precursor to bringing a weapon to school. Students learn to deal with conflict by using violent methods of resolution. When the conflicts escalate, students continue to use more violent methods of dealing with them, ultimately leading students to carry weapons to resolve the problems. School-based violence intervention programs have been developed and instituted based on the social learning theory that students who bring weapons to school will be the students who are involved in a lot of fights. Therefore, the best way to decrease the number of students carrying weapons is to stop students from fighting. These programs teach students nonviolent ways to deal with interpersonal conflict, most commonly through conflict resolution skills and peer mediation.

While much attention has been dedicated to the level of school violence and characteristics associated with violent acts (e.g., number of incidents, perpetrator-victim relationships, structural characteristics of the school), little research has looked at individual characteristics of those students who bring weapons to school (e.g., gender, grade in school, attitude toward fighting, self-efficacy, amount of observed delinquency, self-reported delinquency, attitude toward school, and perception of school safety) even though many school violence programs target individual characteristics.

## STUDENTS AND WEAPON CARRYING

Research suggests that students bring weapons to school for two reasons: bullying and protection (Arnette & Walsleben, 1998; Hazler, 2000). Bullies are highly aggressive children who seek out conflict situations (Besag, 1989; Furlong & Morrison, 1994). They have a need to exercise or confirm their power over others. Usually, bullies are physically stronger and have more energy and confidence than other students (Besag, 1989). Carrying a weapon is a form of bullying. Bullies who carry weapons do so to assure dominance over their victims.

Cotten and colleagues (1994) studied characteristics associated with bullying. They examined the relationship between aggression, fighting behavior, individuals, and family factors. They found that predictors of aggression were age (older students were more aggressive than younger students), attitude toward violence (a positive attitude toward violence was predictive of aggressiveness), and weapon carrying (students reporting ever carrying a weapon were more aggressive than non-weapon-carrying students).

The other reason students bring weapons to school is for protection (Hazler, 2000; National Center for School Safety, 1993). These students have either been victimized or have a fear of being victimized and feel that the only way they can avoid this is to carry a weapon. In addition, as more schools resort to different types of increased security (e.g., metal detectors, armed security guards, random locker searches, police officers stationed in the school), students' fears of being victimized have been increased to where many students

feel that they are unsafe without carrying a weapon (Asmussen, 1992; National Center for School Safety, 1993).

Several studies have explored different types of predictors of weapon carrying. These studies have found that weapon carrying is associated with fighting (Lowry et al., 1998), alcohol and drug use (Kingery et al., 1999; Lowry & Cohen, 1999; McKeganey & Norrie, 2000; Valois & McKewon, 1998), having a friend or relative victimized (Vaughan et al., 1996), sexual intercourse (Valois & McKewon, 1996), being a victim or witness of extreme violence (Kingery et al., 1999), positive attitudes toward aggression (Cornell & Loper, 1998), and poor parental relationships (Orpinas & Murray, 1999).

While fighting is believed to be associated with weapon carrying, few studies have tested this relationship. Lowry and colleagues (1998) reanalyzed 1992 data from the Youth Risk Behavior Survey and found that weapon carrying and fighting were common among the 12- to 21-year-olds in the sample. They also found that youth who carried weapons were more likely to have been in a fight than those who did not carry a weapon. However, they were unable to establish a causal relationship between the two.

One study that investigated weapon carrying among middle school students was interested in whether weapon carrying was more of a defensive or an aggressive behavior. Webster and colleagues (1993) attempted to identify several personal factors associated with weapon carrying in two Washington, D.C., middle schools. Their primary hypothesis was that weapon carrying was a function of seven factors: (1) direct and indirect exposure to violence, (2) delinquency, (3) positive attitude about hitting other people under certain conditions, (4) positive attitude about shooting someone under certain conditions, (5) peer support of violence, (6) patterns of aggressive behavior, and (7) belief that having a weapon can provide protection from physical attacks.

Webster and colleagues (1993) found that students who carried knives and guns were more aggressive than students who did not carry weapons. Students who carried knives were more likely to be males and had been threatened or attacked with a knife. The authors speculated that these students were victims due to their propensity to get into a fight more than through random victimization. Gun-carrying students were more aggressive than knife carrying students. These students had been arrested for drug-related charges, had extreme attitudes regarding the use of violence, had a perception of peer support for violence, and had a tendency to start fights. Overall, their findings were not consistent with the belief that innocent victims carry weapons out of fear of being further victimized. Both gun and knife carrying was more of an aggressive than defensive behavior.

The primary drawback of these studies has been that weapon carrying was measured as a dichotomous variable (Cornell & Loper, 1998; Kingery et al., 1999; Lowry & Cohen, 1999; Lowry et al., 1998; McKeganey & Norrie, 2000; Rountree, 2000; Valois & McKewon, 1998; Vaughan et al., 1996; Webster et al., 1993). That is, these studies focused on whether students had ever carried a weapon. While researchers did ask for the frequency of weapon carrying over a specific time frame, they did not test for differences between students who carry weapons on occasion versus students who carry weapons on a daily basis. It is possible that the individual characteristics of students who occasionally carry weapons are different from students who frequently carry weapons. For instance, students may carry a weapon once or twice in order to

show it off or prove they have easy access as a way to gain status or enhance their bullying image (Greene, 1993). Students who regularly possess weapons may have other reasons such as protection from a reoccurring threat or constant fear of victimization. Haynie and colleagues (2001) and Cotten and colleagues (1994) found that aggressive students who carried weapons were also victimized. Hence, even aggressive students may carry weapons on a daily basis for protection rather than aggressive purposes.

The following study further investigates the relationship between fighting and carrying a weapon to school. Since a large portion of school violence programs are designed to decrease the use of violence as a way to resolve conflict, we will test the assumption that fighting is associated with carrying weapons while examining other individual characteristics as predictors of weapon carrying. The study also explores potential differences between students who occasionally and frequently carry weapons.

## METHODOLOGY

### Sample

Data for this study were collected from four middle schools in a large Midwestern city. The schools were in the same urban school district but located in different areas of the city. These four schools were selected by research staff and school officials based on their representativeness of middle schools in the school district. The schools were located in low-income residential areas of the city. The principals of these schools believed the area around their school was home to gangs and drug dealers.

Anonymous and confidential surveys were distributed and collected during homeroom periods in each school. The surveys were given to all sixth-, seventh-, and eighth-grade students in attendance. The sample consisted of 944 middle school students across the four schools. Slightly more than half (55 percent) were female and the mean age was 12.6 with a range of 9 to 15 years old. One-third of the students in the sample were sixth graders, 37 percent were seventh graders, and 30 percent were eighth graders.

### Measures

The student survey contained several items related to weapon carrying and physical fighting. The constructs contained in the survey were number of times students carried weapons to school and participated in fights at school, students' self-efficacy, attitude toward school, attitude toward fighting, perception of school safety, self-reported delinquency, the amount of delinquency witnessed at school, and victimization. All of these scales were created by summing the scale items and dividing the sum by the number of items with nonmissing responses. Several items were reverse coded to maintain consistency in the direction of the scale.

*Fighting and carrying a weapon.* The students were asked to report the number of times in the past two months that they had brought a gun or a knife to

school and had been involved in a fist fight at school. The possible responses to these questions were "zero," "one," "two," "three," and "four or more."

*Self-efficacy.* The scale that assessed students' self-efficacy was comprised of twenty items asking students how difficult it would be to use nonviolent methods to resolve potential conflicts. The responses were coded as "very hard," "hard," "easy," and "very easy." A high scale score indicated that a student felt it would not be difficult to avoid conflicts nonviolently while a low scale score indicated that a student did not feel confident that he or she could avoid a conflict situation by employing nonviolent methods. The scale reliability for self-efficacy was .80.

*Attitudes toward school.* The construct was based on a six-item scale measuring general attitudes toward school (Gold & Mann, 1984). Students were given statements regarding their feelings about teachers, principals, and the school in general and were asked if they "strongly agreed," "agreed," "neither agreed nor disagreed," "disagreed," or "strongly disagreed" with the statement. The scale measured the extent the students liked or disliked school. A high scale score represented a positive attitude toward school. The scale reliability was .75.

*Attitude toward fighting.* The attitude toward fighting scale measured students' belief that fighting was an appropriate way to handle problems. Students were given seven statements regarding the appropriateness of fighting and asked if they "strongly agreed," "agreed," "did not know," "disagreed," or "strongly disagreed" with each item. A high scale score signified a positive attitude regarding fighting and a low scale score meant the student did not believe that fighting was an acceptable or appropriate method of handling interpersonal conflicts. The scale reliability of this scale was .75.

*Perception of school safety.* The perception of school safety scale contained five items measuring how safe students felt while they were at school (Clifford & Davis, 1991). For these items, students read a statement regarding a safety issue in their school and reported the extent to which they "strongly agreed," "agreed," "did not know," "disagreed," or "strongly disagreed" with the statement. A high score represented a perception that the school was a safe place while a low score represented a perception that the school was not safe. The scale reliability for perception of school safety was .59.

*Self-reported delinquency.* The self-reported delinquency scale consisted of six items that focused on school-related misbehavior and were adapted from Elliott and colleagues (1985). The items included in this scale pertained to school vandalism, being sent to the principal's office for misbehavior, skipping a class, skipping an entire school day, threatening other students, and being suspended. Students were asked to report how many times, "zero" through "four or more," in the past two months they had been involved in these activities. The scale reliability for self-reported delinquency was .82.

*Observed delinquency.* In measuring the amount of school-related violence students had witnessed in school, students were asked to report the number

ossible responses  
r or more."

as comprised of  
use nonviolent  
coded as "very  
cated that a stu-  
tly while a low  
he or she could  
The scale relia-

m scale measur-  
Students were  
ncipals, and the  
greed," "neither  
with the state-  
slied school. A  
The scale relia-

measured stu-  
problems. Stu-  
ness of fighting  
' "disagreed," or  
ed a positive at-  
dent did not be-  
od of handling  
5.

scale contained  
at school (Clif-  
ent regarding a  
1 they "strongly  
disagreed" with  
chool was a safe  
ool was not safe.

ale consisted of  
re adapted from  
ale pertained to  
sbehavior, skip-  
er students, and  
y times, "zero"  
een involved in  
ncy was .82.

related violence  
ort the number

of times in the past two months they had seen: (1) a fist fight between other students, (2) a student threaten a teacher, (3) a student destroy school property, (4) a weapon that was brought to school by another student, (5) the police remove a student from the school, and (6) students possessing drugs in school. Similar to the questions involving fighting and weapons, the possible responses to these items were "zero," "one," "two," "three," and "four or more." The scale reliability was .73 for observed delinquency.

*Victimization.* School victimization was measured using four self-report items. Students were asked how many times in the past two months they had been physically assaulted, had something physically taken from them, had something stolen from their school locker, and been threatened by another student. These items were also coded with the responses of "zero" through "four or more" times. The reliability for this scale was .67.

## RESULTS

The purpose of this study was to examine the relationship between fighting and weapon carrying in four urban middle schools and explore characteristics associated with students who had brought a weapon to school. The first step in the analysis was to compare students who had brought a gun or a knife to school with the number of fist fights in which they had participated. The second step in the analysis employed three multiple regression techniques to determine what individual characteristics were predictive of students carrying weapons to school.

Past literature and research has suggested that students most likely to bring weapons to school are those that are involved in fighting. Some of these students use weapons to intimidate or bully other students while other students carry weapons for protection. The belief is that both types of students will bring weapons to school only after several instances of fighting. We explored this assumption by examining students who had ever carried a weapon to school and the number of fights that these students had been involved (Table 9.1). The column percentages in Table 9.1 shows that the percentage of students who carried a weapon to school increased as the number of fights they have been in increased. For instance, only 8 percent of the students who had never been in a fight had carried a weapon to school, whereas 40 percent of the students who reported being in four or more fights reported carrying a weapon. This finding is consistent with literature on interpersonal violence that has suggested that fighting leads to carrying weapons.

Unfortunately, much of the literature focusing on youth violence and weapons has not extended analysis beyond this conclusion. Most school violence programs use conflict resolution strategies that are based on the belief that the best way to decrease the rate of weapons being brought to school is to decrease the number of fights between students. While it is not the intention of this study to argue that this conclusion is wrong, it is believed that there may be other characteristics explaining why students bring weapons to school than the number of fights. Referring back to Table 9.1, there were 162 students who reported being involved in four or more fights during the two month

**Table 9.1**

Crosstabulation of Students Carrying a Weapon at Least Once by Number of Reported Fist Fights

<i>Number of fist fights</i>	<i>Zero</i>	<i>Once</i>	<i>Twice</i>	<i>Three</i>	<i>Four or More</i>	<i>Totals</i>
Ever carried a weapon to school						
Yes	41 (8%)	26 (16%)	28 (28%)	19 (37%)	64 (40%)	178 (18%)
No	472 (92%)	142 (85%)	71 (72%)	33 (64%)	98 (61%)	816 (82%)
Totals*	513 (52%)	168 (17%)	99 (10%)	52 (5%)	162 (16%)	994

*Note:* All percentages are column percents except for "Totals,\*" which are row percentages.

period prior to the survey. However, 60 percent of these students had never brought a weapon to school. If fighting were the major cause of students carrying weapons, we believe this percentage should have been higher.<sup>1</sup>

The relationship between fighting and weapon carrying was further tested using three different regression analyses. In each regression equation, the dependent variables were the number of times students reported carrying a weapon to school. The first regression equation was a linear multiple regression in which the dependent variable was the number of times in the past two months students carried a weapon to school. The dependent variable was coded 0 through 4, representing the response choices of "zero" through "four or more" times. The second regression equation was a logistic regression with the dependent variable, "how many times in the past two months have you carried a weapon to school," coded as a dichotomous variable (0 = never carried a weapon, 1 = carried a weapon). The equation sought to predict which students had ever carried a weapon to school. The third regression equation attempted to predict the characteristics associated with students who carried weapons to school on multiple occasions without being skewed by students who had never brought a weapon to school. The model was a linear regression using a truncated sample that contained only those students that reported carrying a weapon to school (178). The independent variables for all three of these regression equations were grade in school, gender, number of fights in school, self-efficacy, attitude toward school, attitude toward fighting, perception of school safety, self-reported delinquency, observed delinquency, and victimization.

Table 9.2 presents the *t*-values for the independent variables and the model  $R^2$  -values for the three regression equations. Similar results were obtained for the linear and the logistic regression equations. In these equations, the significant predictors were gender, attitude toward fighting, self-reported delinquency, and victimization. These results suggest that males, students who believe fighting is a positive way to resolve interpersonal problems, students who have a higher rate of delinquency, and students who are victimized





**Table 9.2**

T-Values for the Full Prediction Models of Carrying a Weapon to School

Variable	Linear Regression	Logistic Regression	Selected Sample
Grade	.14	.29	.31
Gender*	-2.13**	-2.07**	-1.13
Number of fights	.16	.09	.31
Self-efficacy	-1.00	-1.60	-.54
School attitude	-1.23	.05	-1.64
Attitude toward fighting	2.68**	2.98**	1.11
Perception of school safety	.54	.46	-.35
Delinquency	11.82**	12.05**	1.71
Observed delinquency	1.85	.77	2.57**
Victimization	4.45**	4.86**	1.43
N	994	994	178
R <sup>2</sup>	.32	.31	.19

\*Gender was coded as males = 1 and females = 2.

\*\*  $p < .05$ .

are most likely to carry weapons to school. In these regressions, the number of fights was not a significant predictor of carrying a weapon.

The results were different for the selected sample regression equation. The only significant predictor of students' carrying weapons to school on multiple occasions was the amount of observed delinquency. Students who observed a high amount of delinquency committed by other students were more likely to bring a weapon to school on multiple occasions. This finding was interesting given that none of the significant predictors from the linear or the logistic regression were statistically significant in this equation.

The finding that observed delinquency predicted frequent carrying of weapons led to an additional analysis of the selected sample model. The analysis was conducted using the individual items from the observed delinquency scale as the independent variables (Table 9.3). The significant predictors from this equation were the amount of observed fights, the number of observed threats on other students, and the number of times the students saw other students with drugs.

## DISCUSSION

The analyses produced three distinct findings. First, this study compared the relationship between number of fights at school and carrying a weapon to school based on the assumption that the more fights a student is involved in, the more likely he or she will carry a weapon to school. The cross-tabulation of

by Number

re Totals

178  
(18%)  
816  
(82%)  
994

are row

nts had never  
f students car-  
gher.<sup>1</sup>

is further tested  
ation, the de-  
ted carrying a  
multiple regres-  
n the past two  
variable was  
through "four  
egression with  
nths have you  
(0 = never car-  
predict which  
ssion equation  
ts who carried  
ed by students  
linear regres-  
s that reported  
for all three of  
er of fights in  
ghting, percep-  
linquency, and

ables and the  
results were ob-  
ese equations,  
g, self-reported  
nales, students  
problems, stu-  
are victimized

**Table 9.3**

Selected Sample Model Predicting Carrying a Weapon to School with the Individual Scale Items from the Observed Delinquency Scale as Independent Variables

<i>Item</i>	<i>Selected Sample</i>
Observed fights between students	2.35*
Observed threats to other students	2.38*
Observed school vandalism	1.78
Observed students with weapons	1.14
Observed the police at school	1.06
Observed students with drugs	2.10*
<i>N</i>	178
<i>R</i> <sup>2</sup>	.24

\* $p < .05$ .

these variables demonstrated that the likelihood a student will carry a weapon to school increases as the number of fights increases, thus supporting the use of social learning antiviolence programs (conflict resolution, peer mediation, etc.) that assume that decreasing the number of fights will decrease the prevalence of weapons in the schools.

However, the strength of the relationship between fighting and weapon carrying was tested against other variables believed to be associated with fighting and weapon carrying. Using three regression equations, we attempted to predict the number of times students' brought weapons to school (linear equation), those students who had ever brought a weapon to school (logistic equation), and of those students who reported carrying a weapon, which students repeatedly carried weapons (selected sample). The number of fights in which the students were involved was not a significant predictor in any of the regression equations. While a relationship exists between fighting and weapon carrying, it appears to be small and does not significantly predict weapon carrying when compared to other individual characteristics.

The second principal finding was that predictors of weapon carrying was higher among students who were male, had a positive attitude toward fighting, high self-reported delinquency, and high victimization. The similar results produced by the linear and logistic regression was likely attributable to the number of students who reported never carrying a weapon to school (82 percent) compared to students who did (18 percent).

The findings from the linear and logistic regression equations reflect earlier beliefs about school violence (Cotten et al., 1994; Haynie et al., 2001; Webster et al., 1993). The students more likely to carry weapons appear to be bullies. These are students who believe fighting is a positive way to resolve conflicts, are involved in a large amount of other delinquent behaviors, and have been victimized. These students are aggressive but need to have a weapon because they have also been victimized, most likely as a result of their own aggressive behavior.

on  
Observed

Sample

- .35\*
- .38\*
- .78
- .14
- .06
- .10\*
- 3
- .24

ll carry a weapon  
upporting the use  
, peer mediation,  
increase the preva-

ting and weapon  
e associated with  
ons, we attempted  
to school (linear  
to school (logistic  
eapon, which stu-  
mber of fights in  
ictor in any of the  
een fighting and  
gnificantly predict  
eristics.

apon carrying was  
ude toward fight-  
n. The similar re-  
ely attributable to  
apon to school (82

uations reflect ear-  
aynie et al., 2001;  
apons appear to be  
ive way to resolve  
ent behaviors, and  
it need to have a  
7 as a result of their

The third principal finding was the differences between the selected sample model and the other two regression models. These differences suggest that students who bring weapons to school are different from students who repeatedly carry weapons. The selected sample model suggests that students who frequently carry weapons do so for the purpose of protection from random victimization. These students were not involved in more aggressive behaviors, nor have they been victimized significantly more than other students. The analysis using the individual observed delinquency items as independent variables provided a more detailed explanation of this initial finding. The students who often carry weapons were more likely to report witnessing fights between other students, students getting physically threatened, and students with drugs. In other words, students who frequently carry weapons appear to have a high fear of school violence, regardless of whether they have been victimized.

CONCLUSIONS

Although this study does support prior research that has found that students carry weapons to school for bullying and for protection, it also found that fighting is not the best predictor of weapon carrying. Bullies appear to carry weapons occasionally, but students who witness violence-related activities in school carry weapons frequently.

School administrators have adapted two strategies for dealing with the increase in student fighting and the prevalence of weapons being brought into the schools. One strategy has targeted the weapons and the other has focused on the students. The first approach has been to take extreme safety measures by placing metal detectors at school entrances, hiring full-time armed security guards, having on-duty police officers stationed inside of the school during school hours, conducting random locker searches, and enforcing stiffer penalties (Gaustad, 1991; Kenney & Watson, 1998). The purpose behind this strategy is to create deterrents that would disallow and prevent weapons from ever entering the school.

The findings from the selected sample model suggest that these types of measures may not serve as a deterrent but as a reason why some students carry weapons to school on a daily basis. Walking past metal detectors and armed security guards may only serve to frighten students to the point they believe they need a weapon for protection. Researchers have questioned the ability of these types of security measures to create a safe school environment (Collins et al., 1992; Noguera, 1995).

The second strategy attempts to deal with the problem of fights between students in a less formal manner. Antiviolence programs have become popular in many urban, suburban, and rural school districts. These programs are grounded in social learning theory and attempt to teach students nonviolent methods to resolve interpersonal conflicts. Social learning-based programs typically consist of teaching students conflict resolution skills, promoting peer mediation to resolving interpersonal conflicts, and impressing on all students the problems associated with using violence. While this approach may be successful in keeping students from fighting, and perhaps keep some students from ever carrying a weapon to school, it does not address those students who bring weapons to school on a regular basis.

The findings of this study suggest that schoolwide violence intervention programs may be more effective in decreasing weapon carrying than individual-level approaches. Conflict resolution programs often target the individual as the level of intervention (Tolan & Guerra, 1994) while schoolwide programs target multiple facets of violence (Commission on Violence and Youth, 1993). G. Gottfredson (1987) pointed out that implementation of programs in schools with a high number of problems is difficult unless the intervention is also aimed at improving the school as a whole. Research on school environment programs is limited (D. Gottfredson, 1987; Lane & Murakami, 1987), but it has indicated that school improvement programs have been moderately successful in improving the school environment, decreasing the number of suspensions, and decreasing the number of delinquent and drug-related activities in school (G. Gottfredson, 1987). Therefore, a school environmental approach appears to be best suited to decrease the fear of school violence for those students who frequently carry weapons.

It is important that school administrators consider all possible effects as they explore different strategies to stop the increase in weapons being brought into their schools. Placing metal detectors at the entrances, posting armed security guards in the hallways, and conducting locker searches may deter some students from carrying weapons, but it appears that these measures may cause other students to feel they need to have a weapon for protection. In addition, while conflict resolution, peer mediation programs, and antibullying programs are able to decrease the instances of students fighting, schoolwide programs that target the overall school environment appear to have more potential for decreasing weapon-related school violence. This study has extended prior research in demonstrating that individual differences exist between students who sporadically and regularly carry weapons. More in-depth research is needed that further examines why students feel they need to carry weapons to school and what measures school administrators can institute that will alleviate these feelings of dismay.

## REFERENCES

- Arnette, J. L., and M. C. Walsleben. (1998). *Combating Fear and Restoring Safety in Schools*. Washington, DC: U.S. Department of Justice.
- Asmussen. (1992). "Weapon Possession in Public High Schools." *School Safety, Fall*, pp. 28-30.
- Bandura, A. (1973). *Aggression: A Social Learning Analysis*. Englewood Cliffs, NJ: Prentice Hall.
- Besag, V. E. (1989). *Bullies and Victims in Schools*. Philadelphia: Open University Press.
- Binns, K., and D. Markow. (1999). *The Metropolitan Life Survey of the American Teacher: Violence in America's Public Schools—Five Years Later*. New York: The Metropolitan Life Insurance Company.
- Centers for Disease Control. (1998). *Youth Risk Behavior Surveillance—United States, 1997*. Atlanta, GA: Centers for Disease Control.
- Christie, D. J., & B. G. Toomey. (1990). The Stress of Violence: School, Community, and World. In L.E. Arnold (Ed.), *Childhood Stress* (pp. 297-323). New York: John Wiley & Sons.
- Clifford, M. A., & M. Davis. (1991). *Evaluation Tests for Student Assistance Programs*. Boulder, CO: National Organization of Student Assistance Programs and Professionals.

- Collins, J. J., P. Messerschmidt, & C. Ringwalt. (1992). *The Relationship between School Disruption and School Social Control Activities*. Research Triangle Park, NC: Center for Social Research and Policy Analysis.
- Commission on Violence and Youth. (1993). *Violence & Youth: Psychology's Response. Volume I: Summary Report*. Washington, DC: American Psychological Association.
- Cornell, D. G., & A. B. Loper. (1998). "Assessment of Violence and Other High-Risk Behaviors with a School Survey." *School Psychology Review*, 27: 317-330.
- Cotten, N. U., J. Resnick, D. C. Browne, S. L. Martin, D. R. McCarraher, & J. Woods. (1994). "Aggression and Fighting Behavior among African-American Adolescents: Individual and Family Factors." *American Journal of Public Health*, 84(4): 618-622.
- Furlong, M. J., & G. M. Morrison. (1994). "Introduction to Miniseries: School Violence and Safety in Perspective." *School Psychology Review*, 23: 139-150.
- Elliott, D. S., D. Huizinga, & S. S. Ageton. (1985). *Explaining Delinquency and Drug Use*. Beverly Hills, CA: Sage.
- Gaustad, J. (1991). "Schools Attack the Roots of Violence." *ERIC Digest*, 63, 1-2.
- Gold, M., & D. W. Mann. (1984). *Expelled to a Friendlier Place: A Study of Alternative Schools*. Ann Arbor, MI: University of Michigan Press.
- Goldstein, A. P. (1988). "New Directions in Aggression Reduction." *International Journal of Group Tensions*, 18(4): 286-313.
- Gottfredson, D. C. (1987). "An Evaluation of an Organizational Development Approach to Reducing School Disorder." *Evaluation Review*, 11(6): 739-763.
- Gottfredson, G. D. (1987). *American Education—American Delinquency* (Report No. 23). Baltimore: Center for Research on Elementary and Middle Schools.
- Greene, M. B. (1993). "Chronic Exposure to Violence and Poverty: Interventions that Work for Youth." *Crime and Delinquency*, 39(1): 106-124.
- Haynie, D. L., T. Nansel, P. Eitel, A. D. Crump, K. Saylor, K. Yu, & B. Simons-Morton. (2001). "Bullies, Victims, and Bully/Victims: Distinct Groups of At-Risk Youth." *Journal of Early Adolescence*, 21: 29-49.
- Hazler, R. (2000). "When Victims Turn Aggressors: Factors in the Development of Deadly School Violence." *Professional School Counseling*, 4(2): 105-112.
- Kachur, S. P., G. M. Stennies, K. E. Powell, W. Modzeleski, R. Stephens, R. Murphy, M. Kresnow, D. Sleet, & R. Lowry. (1996). "School-Associated Deaths in the United States, 1992-1994." *Journal of the American Medical Association*, 275(22): 1729-1733.
- Kenney, D. J., & T. S. Watson. (1998). *Crime in the Schools: Reducing Fear and Disorder with Student Problem Solving*. Alexandria, VA: Police Executive Research Forum.
- Kingery, P. M., M. B. Coggeshall, and A. A. Alford. (1999). "Weapon Carrying by Youth." *Education and Urban Society*, 31: 309-333.
- Lane, T. W., & J. Murakami. (1987). School Programs for Delinquency Prevention and Intervention. In E. K. Morris & C.J. Braukmann (Eds.), *Behavioral Approaches to Crime and Delinquency* (pp. 305-327). New York: Plenum Press.
- Lawrence, R. (1998). *School Crime and Juvenile Justice*. New York: Oxford University Press.
- Lowry, R., & L. Cohen. (1999). "School Violence, Substance Use, and Availability of Illegal Drugs on School Property among U.S. High School Students." *Journal of School Health*, 69: 347-355.
- Lowry, R., K. E. Powell, L. Kann, J. L. Collins, and L. J. Kolbe. (1998). "Weapon-Carrying, Physical Fighting, and Fight-Related Injury among U.S. Adolescents." *American Journal of Preventative Medicine*, 14: 122-129.
- Lowry, R., D. Sleet, C. Duncan, K. Powell, & L. Kolbe. (1995). "Adolescents At Risk for Violence." *Educational Psychology Review*, 7(1): 7-39.
- McKeganey, N., & J. Norrie. (2000). "Association between Illegal Drugs and Weapons in Young People in Scotland: Schools' Survey." *British Medical Journal*, 320: 982-984.
- National Center for School Safety. (1993). *Weapons in Schools*. Malibu, CA: Pepperdine University.

intervention  
 ying than  
 get the in-  
 schoolwide  
 and Youth,  
 rograms in  
 rvention is  
 ol environ-  
 1987), but  
 rately suc-  
 ber of sus-  
 d activities  
 il approach  
 r those stu-

e effects as  
 ng brought  
 ; armed se-  
 deter some  
 ; may cause  
 n addition,  
 llying pro-  
 olwide pro-  
 have more  
 idy has ex-  
 s exist be-  
 re in-depth  
 eed to carry  
 nstitute that

ty in Schools.  
 ty, Fall, pp.  
 NJ: Prentice  
 sity Press.  
 1 Teacher: Vio-  
 litan Life  
 States, 1997.  
 nmunity,  
 ork: John  
 irams. Boul-  
 rofessionals.

- Noguera, P. A. (1995). "Preventing and Producing Violence: A Critical Analysis of Responses to School Violence." *Harvard Educational Review*, 65(2): 189-212.
- Office of Juvenile Justice and Delinquency Prevention. (1996). *Juvenile Offenders and Victims: 1996 Update on Violence*. Washington, DC: U.S. Department of Justice.
- Okey, J. L. (1992). "Human Aggression: The Etiology of Individual Differences." *Journal of Humanistic Psychology*, 32(1): 51-64.
- Orpinas, P., & N. Murray. (1999). "Parental Influences on Students' Aggressive Behaviors and Weapon Carrying." *Health Education and Behavior*, 26: 774-787.
- Rountree, P. W. (2000). "Weapons at School: Are the Predictors Generalizable across Context?" *Sociological Spectrum*, 20: 291-324.
- Pallone, N. J., & J. J. Hennessy. (1992). *Criminal Behavior: A Process Psychology Analysis*. New Brunswick, NJ: Transaction Publishers.
- Tolan, P., & N. Guerra. (1994). *What Works in Reducing Adolescent Violence: An Empirical Review of the Field*. Boulder, CO: Center for the Study and Prevention of Violence.
- U.S. Department of Education. (1997). *Principal/School Disciplinarian Survey on School Violence*. Washington, DC: U.S. Department of Education.
- U.S. Department of Education. (1998a). *Indicators of School Crime and Safety, 1998*. Washington, DC: U.S. Department of Education.
- U.S. Department of Education. (1998b). *Violence and Discipline Problems in the U.S. Public Schools: 1996-1997*. Washington, DC: U.S. Department of Education.
- U.S. Department of Education. (1999). *Annual Report on School Safety, 1999*. Washington, DC: U.S. Department of Education.
- U.S. Department of Education. (2001). *Annual Report on School Safety, 2000*. Washington, DC: U.S. Department of Education.
- Valois, R. F., & R. E. McKewon. (1998). "Frequency and Correlates of Fighting and Carrying Weapons among Public School Adolescents." *American Journal of Health and Behavior*, 22: 8-17.
- Vaughan, R. D., J. F. McCarthy, B. Armstrong, H. J. Walter, P. D. Waterman, & L. Tiezzi. (1996). "Carrying and Using Weapons: A Survey of Minority Junior High School Students in New York City." *American Journal of Public Health*, 86: 568-572.
- Webster, D. W., P. S. Gainer, & H. R. Champion. (1993). "Weapon Carrying among Inner-City Junior High School Students: Defensive Behavior vs. Aggressive Delinquency." *American Journal of Public Health*, 83(11): 1604-1608.

#### NOTE

1. In addition to the crosstabs presented in Table 9.1, the correlation between fighting and weapon carrying was .32. While this was a statistically significant correlation, we believe that the relationship should have been higher if fighting is the primary predictor of weapon carrying.