

Aggression and Fighting Behavior among African-American Adolescents: Individual and Family Factors

ABSTRACT

Objectives. This study examined the extent to which individual and family factors are associated with aggression and fighting behavior among African-American middle school adolescents.

Methods. Four hundred thirty-six African-American boys and girls from two middle schools in a predominantly low-income North Carolina school system were surveyed and their school records examined. Information was collected concerning students' aggression levels, school fighting behavior, school suspensions for fighting, attitudes toward violence, perceptions of their families' attitudes toward violence, weapon-carrying behavior, and sociodemographics. Multivariate analyses were employed to predict the students' aggression levels, fighting behavior, and school suspensions.

Results. Factors related to the individual adolescents, such as gender, age, weapon-carrying behavior, and attitudes toward violence, were associated with students' reports of aggression and fighting behavior. Factors related to family and school were associated with school suspension for fighting.

Conclusions. This study suggests that violence prevention programs set in our elementary and middle schools may reduce aggression and fighting among our youth. School teachers and public health practitioners are encouraged to work together in understanding and preventing adolescent violence. (*Am J Public Health.* 1994;84:618-622)

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Introduction

In the last decade, rates of violence-related child and adolescent fatalities have increased in the United States. Homicide, the third leading cause of death in adolescents 10 to 19 years of age,¹ accounted for 42% of the deaths among young African-American males during that period.² The homicide rate for African-American adolescents is six times that for White adolescents.³

Physical fighting is an antecedent behavior for many nonfatal and fatal intentional injuries.² Unfortunately, fighting appears to be common among adolescents. A recent survey found that 42% of adolescents reported fighting within the past year, and 26% had carried a weapon during the preceding month.²

Much of what is known about violence among African-American youth has been obtained from examining differences between this group and their White counterparts.^{4,5} Few studies have examined intragroup differences in aggression and fighting in African-American populations.⁶ Therefore, the question addressed in this paper is the extent to which individual characteristics of the adolescent (including gender, age, attitude toward violence, and weapon-carrying behavior) and family factors (including poverty status and students' perceptions of their families' views toward violence) predict aggression and fighting behavior among African-American adolescents.

Methods

Study Setting and Sample

Adolescents attending two middle schools in predominantly low-income African-American neighborhoods in a

small North Carolina city were studied. Although only approximately half of the city population is African-American,⁷ more than 90% of the children enrolled in the city school system are African-American.

A total of 744 students attended the two schools and therefore were eligible for the study. Ninety-seven percent of these students were African-American (53% male and 47% female). Four hundred forty-seven of these African-American students (60%) received parental consent for their participation in the study, were present in school on the day of the study assessment, and filled out the study questionnaires. Fifty-one percent of these 447 students were male, and 49% were female. Complete information on selected study variables was available for 436 students, of whom 222 (51%) were male and 214 (49%) were female. Therefore, this paper will focus on these 436 students.

Assessment

Student questionnaires. Self-administered questionnaires were given to the students during school, before the initiation of a violence prevention curriculum. Care was taken to establish rapport with

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This paper was accepted December 14, 1993.

the students prior to administration of the questionnaires to maximize the probability of honest responses to sensitive questions. The questionnaires were administered by African-American college students who had been well trained in the administration procedures. Students were assured that their responses would be confidential and that neither teachers nor parents would see their answers. The questionnaire gathered information concerning characteristics of the students (i.e., aggressiveness, fighting behavior, attitudes toward violence, weapon-carrying behavior, gender, and age) and characteristics of the students' families (i.e., students' perceptions of their families' views toward violence).

The questionnaire assessed the students' aggressiveness, using an aggression scale developed on the basis of previous reliable and valid instrumentation.⁸⁻¹⁰ The aggression scale listed 12 aggressive behaviors (e.g., threatening peers, destroying property) to which students responded by indicating whether each was never, sometimes, or often true of them. Item responses were summed to create an aggression score, with higher scores indicating more severe aggression (the lowest possible score was 0 and the highest possible score was 24). Internal consistency, as assessed by Cronbach's alpha, was .75, and test-retest reliability over a 3-month period was .60.

The questionnaire also contained a question adapted from the Youth Health Risk Behavior Survey¹¹ to ask about the students' participation in fights at school. Specifically, students were asked, "While you were at school, has anyone ever attacked or fought with you?"

The students' attitudes toward interpersonal peer violence were assessed with a scale adapted from one developed by the Education and Development Center Inc of Massachusetts. This scale listed 15 statements that expressed either a nonviolent or a violent orientation. Students responded to each item on a 4-point scale, with 1 indicating "disagree a lot" and 4 indicating "agree a lot." Endorsed responses were summed to create a student attitude scale score, with low scores indicating a nonviolent orientation (the lowest possible score being 15) and high scores indicating a violent orientation (the highest possible score being 60). Internal consistency, as assessed by Cronbach's alpha, was .73,

TABLE 1—Description of the Students

	Female (n = 214)	Male (n = 222)	Total (n = 436)
School, no. (%)			
A	95 (44)	88 (40)	183 (42)
B	119 (56)	134 (60)	253 (58)
Grade, no. (%)			
6	83 (39)	89 (40)	172 (40)
7	53 (25)	70 (32)	123 (28)
8	78 (36)	63 (28)	141 (32)
Poverty, no. (%)			
Yes	106 (50)	118 (53)	224 (51)
No	108 (50)	104 (47)	212 (49)
Fighting at school, no. (%)			
Yes	56 (26)	104 (47)	160 (37)
No	158 (74)	118 (53)	276 (63)
Suspension for fighting, no. (%)			
Yes	31 (14)	46 (21)	77 (18)
No	183 (86)	176 (79)	359 (82)
Carrying weapon to school, no. (%)			
Yes	34 (16)	49 (22)	83 (19)
No	180 (84)	173 (78)	353 (81)
Age, y, mean (SD)	12.5 (1.0)	12.5 (1.0)	12.5 (1.0)
Aggression score, mean (SD)	6.1 (3.5)	6.7 (4.2)	6.4 (3.9)
Student attitude toward violence score, mean (SD)	29.9 (6.5)	32.6 (7.7)	31.3 (7.2)
Perception of family attitude toward violence score, mean (SD)	12.0 (3.4)	12.3 (3.2)	12.2 (5.3)

and test-retest reliability over a 3-month period was .59.

Student weapon-carrying behavior was assessed with an item from the Youth Health Risk Behavior Survey. Students were asked whether they had ever brought a weapon (e.g., gun, knife, club) to school to protect themselves.

The students' perceptions of their families' views toward violence were assessed on a five-item instrument. Students responded to each item on a 4-point scale, with 1 representing "disagree a lot" and 4 representing "agree a lot." Endorsed responses to items were summed, with low scores indicating that the students believed that the family disapproved of interpersonal student violence (the lowest possible score being 5) and high scores indicating that the students believed that the family condoned interpersonal student violence (the highest possible score being 20). Internal consistency, as assessed by Cronbach's alpha, was .55, and test-retest reliability over a 3-month period was .54.

School record reviews. School records were searched to determine whether the students had been sus-

pending from school for physical fighting, including hitting, biting, and kicking, within the past year.

Families of students were classified as living in poverty if school records showed that students were enrolled in the school free lunch program, indicating that a family of four must have had a monthly income of less than \$1452.

Analysis

Multiple linear regression procedures¹² were used to model the students' scores on the aggression scale as a function of school, gender, age, student attitude toward violence scores, student weapon-carrying behavior, students' perceptions of their families' attitudes toward violence scores, and poverty. Regression coefficients and 95% confidence intervals (CIs) were used to measure effect sizes for the predictor variables.

Logistic regression procedures¹³ were used to model the students' reports of their school fighting behavior as a function of the predictor variables used in the previously described multiple linear regression model. Odds ratios (ORs) and corresponding 95% confidence intervals were computed. The

TABLE 2—Results of Linear Regression Analysis of Student Aggression Scale Scores

	Regression Coefficient	95% CI
School	-0.27	-0.92, 0.39
Gender	-0.01	-0.67, 0.64
Age	0.50*	0.18, 0.81
Student attitude	0.19*	0.14, 0.24
Weapon carrying	1.10*	0.25, 1.95
Perception of family attitude toward violence	0.07	-0.04, 0.18
Poverty	0.44	-0.21, 1.09

Note. The following variable coding scheme was used in the multiple linear regression model of student report of aggression: aggression (score on aggression scale), school (0 = school A, 1 = school B), gender (0 = male, 1 = female), age (in years), student attitude (score on student attitude toward violence scale), weapon carrying (0 = no, 1 = yes), perception of family attitude toward violence (score on students' perceptions of their families' attitudes toward violence scale), and poverty (0 = no, 1 = yes). CI = confidence interval.

* $P < .05$.

school suspension records for fighting were modeled in a similar manner.

Results

Table 1 presents the characteristics of the sample stratified by gender. Boys constituted 51% of the students. Forty-two percent of the students were from school A, while the remainder were from school B. Forty percent of the students were in sixth grade, 28% were in seventh, and 32% were in eighth. The students ranged in age from 11 to 15 years (mean = 12.5 years). Fifty-one percent of the students' families lived in poverty.

One hundred sixty students (37%) reported that they had been involved in a physical fight at school (26% of the girls, 47% of the boys), and school records showed that 77 (18%) had been suspended from school for fighting (14% of the girls, 21% of the boys). Eighty-three students (19%) reported that they had carried a weapon to school (16% of the girls, 22% of the boys). Overall aggression scores of the students ranged

from 0 to 20 (mean 6.4, SD = 3.9), with the mean male scores being higher than the mean female scores. Scores on the student attitude toward violence scale ranged from 15 to 55 (mean = 31.3, SD = 7.2), with the mean male score being higher than the mean female score. The scores on the scale measuring students' perceptions of their families' attitudes toward violence ranged from 5 to 20 (mean = 12.2, SD = 3.3).

Significant positive correlations were found between the students' reports of aggression and (1) their attitudes toward violence ($r = .42$, $P = .0001$) and (2) their perceptions of their families' attitudes toward violence ($r = .22$, $P = .0001$). Students' attitude scores were significantly correlated with their perceptions of their families' attitude scores ($r = .39$, $P = .0001$).

Regression diagnostic procedures detected no collinearity problems among the predictor variables used in the linear regression analysis (tolerance estimates ranged from .79 to .98). The results of the linear regression procedures, presented in Table 2, show that three of the variables focusing on the individual adolescents were significant predictors of aggression. Age was significantly related to aggression; older students were more aggressive than younger students. Student attitude toward violence was also significant; students with violent attitudes reported more aggressive behavior. Finally, students who carried weapons to school scored significantly higher on the aggression scale than those who did not carry weapons to school. The family-related factors and the school factor were not significant predictors of student aggression.

Table 3 shows that when the students' reports of fighting in school were modeled by means of logistic regression procedures, three of the individual factors were significant predictors. Gender was predictive of fighting in school, with girls being less likely to fight than boys (OR = 0.44, 95% CI = 0.29, 0.68). Age was also predictive of student fighting, with older students reporting more fighting than younger students (OR = 1.28, 95% CI = 1.04, 1.57). Student attitude toward violence was predictive of student fighting, with students who had more violent attitudes being more likely to report fighting (OR = 1.06, 95% CI = 1.03, 1.09). The family-related factors and the school factor were not significant predictors of student fighting.

The findings of the logistic model of school records of suspension for fighting, presented in Table 3, show that individual, school, and family factors were all associated with school suspension. Age was related to school suspension; older students were more likely to have been suspended from school for fighting than were younger students (OR = 1.54, 95% CI = 1.19, 1.99). School was significantly related to suspension for fighting, with the students in school B being less likely to be suspended than the students in school A (OR = 0.42, 95% CI = 0.25, 0.70). The family variable of poverty showed a borderline relationship to school suspension, with students of impoverished families being more likely to receive suspensions for fighting in school than students whose families were not impoverished (OR = 1.69, 95% CI = 0.99, 2.85).

Discussion

This study found that individual characteristics of the students, including age, gender, weapon-carrying behavior, and attitude toward violence, were predictive of their reports of aggressive behavior and fighting at school. The findings that age (being an older adolescent) and gender (being male) were associated with student aggression and fighting are consistent with the staggering rates of intentional injury and homicide among African-American adolescent boys.³ Weapon-carrying behavior was also predictive of student aggression, suggesting that students may gain confidence and security from carrying a weapon and thus may perceive fewer risks to themselves in aggressive situations. Although student attitude toward violence was positively associated with aggression and fighting, students, on average, did not view violent behavior as the most appropriate response to conflict.

These findings suggest that violence prevention programs set in elementary and middle schools may be useful in the prevention of aggression and fighting among youth. Such programs should encourage nonviolent attitudes and teach nonaggressive conflict resolution strategies to give children the tools they need to reduce aggressive behavior. In addition, the findings stress the importance of ensuring that weapons are kept out of classrooms.

Neither family factors nor the school that the students attended were related to student reports of aggression and

fighting. However, a family factor, namely poverty, and school were associated with students having a school suspension record for fighting. Therefore, the question arises as to why students' reports of aggression and fighting were associated with characteristics of the students, while school suspension records for fighting were primarily related to school and family factors.

Discussions with school officials indicated that the discipline policies of the two schools varied greatly, with school A being more likely to use suspension than school B. Therefore, although the students at the two schools did not evidence differential levels of aggressive behavior or fighting at school, differences in school discipline policies resulted in greater proportions of students at one school being suspended for fighting.

The association between poverty and school suspension may be a statistical artifact since the relationship between the two factors is not a strong one. However, if we assume, for the sake of discussion, that this is not the case, other possible explanations arise. One explanation may be that adolescents from impoverished families were more frequently suspended for fighting because, although they fought as often as other adolescents, they were involved in more severe fights that alerted school officials. Post hoc analyses suggested that this was not the case, since 6% of impoverished students who fought reported receiving medical treatment for resultant injuries, as did 6% of nonimpoverished students. An alternative explanation may be that the poorer students were less likely than other students to report aggressive behavior and fighting, thus explaining the discrepancy between self-reported fighting and suspensions for fighting. We do not believe that this is a strong explanation given the great care taken to establish rapport with all students and to assure them of the confidentiality of their answers. Finally, school officials may have been more likely to suspend students from impoverished families than to suspend other students. Future research aimed at providing a better understanding of this finding is encouraged.

Our findings must be viewed with caution given the study limitations. Most of the data were derived from students' self-reports and, therefore, are liable to all of the self-report biases. In addition, it must be stressed that the students'

TABLE 3—Results of Logistic Regression Analyses of Student Report of Fighting at School and School Suspension Records for Fighting

	Student Report of School Fighting Model		School Suspension for Fighting Model	
	OR	95% CI	OR	95% CI
School	0.76	0.50, 1.15	0.42*	0.25, 0.70
Gender	0.44*	0.29, 0.68	0.69	0.40, 1.18
Age	1.28*	1.04, 1.57	1.54*	1.19, 1.99
Student attitude	1.06*	1.03, 1.09	1.03	0.99, 1.07
Weapon carrying	1.55	0.92, 2.62	1.16	0.61, 2.19
Perception of family attitude toward violence	0.94	0.88, 1.01	0.93	0.85, 1.01
Poverty	0.76	0.50, 1.15	1.69**	0.99, 2.85

Note. The following variable coding scheme was used in the logistic regression model of student report of fighting at school: school fighting (0 = no, 1 = yes), school (0 = school A, 1 = school B), gender (0 = male, 1 = female), age (age in years), student attitude (score on student attitude toward violence scale), weapon carrying (0 = no, 1 = yes), perception of family attitude toward violence (score on students' perception of their families' attitudes toward violence scale), and poverty (0 = no, 1 = yes). The same variable coding was used in the logistic regression model of school suspension record for fighting; however, the outcome of school suspension was coded as 0 = no, 1 = yes. OR = odds ratio; CI = confidence interval.

* $P < .05$; ** $P = .05$.

perceptions of their families' attitudes toward violence may not reflect the views the families actually hold. Furthermore, we may not have accurately detected all of the students who were living in impoverished families because of our reliance on enrollment in the free school lunch program as the definition of poverty. Given the social stigma associated with participation in the free lunch program, students eligible for the program may not have enrolled. Therefore, while 51% of the students in this sample were classified as poor because of their free lunch status, the difference in the family financial status between the students whom we classified as impoverished and those we classified as nonimpoverished may not be great. Finally, it should be kept in mind that the analysis strategy that we chose to use (namely, forcing all of the predictor variables simultaneously into the models of the study outcomes) is just one of many approaches that could have been taken. Therefore, different analysis strategies may have led to somewhat different findings.

In conclusion, this study revealed fairly high rates of fighting behavior among African-American middle school students. School teachers and public health practitioners are encouraged to work together to address both the immediate and more subtle factors associated with adolescent violence in order

to stem the escalating acts of aggression seen in our schools today. □

Acknowledgments

This research was partially supported by the Chancellor's Office of the University of North Carolina at Chapel Hill, the Z. Smith Reynolds Foundation, and the University of North Carolina Injury Prevention Research Center.

We would like to thank Dr Betsy Lowman and Mr David Most for their help in data analysis.

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