

Saturday Night's Alright for Fighting: Antisocial Traits, Fighting, and Weapons Carrying in a Large Sample of Youth

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Abstract The current study examines risk and protective factors for youth antisocial personality and behavior from a multivariate format. It is hoped that this research will elucidate those risk and protective factors most important for focus of future prevention and intervention efforts. The current study examines multiple factors associated with youth antisocial traits and behavior in a sample of 8,256 youth (mean age 14), with the goal of identifying the strongest and most consistent risk or protective factors. Data was collected from the Ohio version of the Youth Risk Behavior Surveillance System's (YRBSS) school-based Youth Risk Behavior Survey (YRBS) developed by the Centers for Disease Control (CDC). Hierarchical multiple regression analyses identified peer delinquency, drug use and negative community influences as predictive of antisocial traits. Schools and families functioned as protective factors. Youth who fought frequently tended to be male, antisocial, drug using, depressed, and associated with delinquent peers. Weapons carrying was most common among drug using, antisocial males. Television and video game use were not predictive of antisocial, fighting or weapons carrying outcomes. Developmental patterns across age ranges regarding the relative importance of specific risk factors were also examined. Strategies for intervention and prevention of youth violence that focus on peers, neighborhoods, depression, and families may be particularly likely to bear fruit.

Keywords Violence · Aggressive behavior · Adolescence · Mass media · Family environment · Peer delinquency

During the decade between 1983 and 1993, a surge in arrests of adolescents and young adults for violent crimes marked an alarming rise in youth violence in the United States [1, 2], highlighted by the media's coverage of school shootings across the country. Since

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1993, young people's involvement in serious violent criminal activity, such as homicide, rape, and robbery has declined according to both arrest and victimization data in the U.S. and other countries [3–5]. Based on prevalence data from the 2007 National Survey on Drug Use and Health report [6], 18% of high school adolescents reported carrying a weapon such as a gun, knife, or club during the previous month, 35.5% reported that they had been involved in a physical fight at least once in the last year, and 4.2% reported that they had been injured seriously enough during the fight to need medical attention. Although violence among youth is down worldwide, the persistence of violent behaviors among some young people has led to continued research examining the risk and protective factors associated with violent tendencies.

Researchers examining youth violence have identified individual, familial, school, and peer risk factors that increase the likelihood of adolescent engagement in violence [1, 2, 7]. Among the individual factors associated with violent behavior in young people are favorable attitudes toward violence, use of illicit substances, male gender, previous aggressive behavior, alienation/rebelliousness, previous history of criminal offenses, low intelligence levels, and antisocial behaviors/attitudes/beliefs. Risk factors within the family environment include a history of familial violence, conflict among family members, poverty or poor socioeconomic conditions, parents with antisocial traits, poor relationships among parents and children, punitive disciplinary practices, parental separation, and abusive conditions within the home environment. Among the school risk factors are poor attitude toward school attendance/participation, low academic performance/academic failure, and lack of commitment to school. Socializing with antisocial peers has been identified as a peer group risk factor for youth violent behavior [8].

Protective factors, which decrease the probability of violence among youth, have also been identified with the individual, family, school, and peer domains [1, 2, 7, 9, 10]. Protective factors within the individual domain include high levels of intelligence, female gender, mastery of social skills, outgoing personality traits, high levels of self-esteem, positive coping strategies, an attitude of intolerance toward violent behavior, and an expectation of punishment for engaging antisocial behaviors. Protective factors within the familial environment include relationships with parents/adults that are warm and supportive, parental approval/support of their child(ren)'s peer group, and parental monitoring of their child(ren)'s behavior. Positive feelings about and connection to their school, involvement in extracurricular activities, and recognition for involvement in those activities are the school-based factors that protect youth from engaging in violence. Among their peer group, protective factors include having friends who engage in pro-social, acceptable behaviors and receiving social support from their friends.

The trends in youth violence led the Centers for Disease Control (CDC) to develop the Youth Risk Behavior Surveillance System (YRBSS) to monitor risky behaviors among youth in grades 9–12 [11]. The surveillance system monitors risky behaviors such as youth engagement in activities that lead to injuries and youth violence. In addition, the system tracks adolescents' experiences among a variety of individual, family, and social areas that can exacerbate or hinder involvement in violence. The YRBSS includes a school-based Youth Risk Behavior Survey (YRBS) [12] that can be used by states to amass data regarding the risk behavior prevalence rates among school-aged adolescents.

The current study examines data collected from two counties that used the 2007 Ohio version of the YRBS survey. The survey included items that evaluated the youths' behaviors that lead to injuries or violence, such as possession of weapons, fighting, and assaults. In addition, the 2007 Ohio version of the YRBS included items assessing individual/intra-personal, familial/home environment, and community-based risk and protective factors.

Methods

Participants

Participants in the current study were 8,256 youth from two predominantly Caucasian, suburban/rural counties in Ohio. Participants were almost equally distributed in terms of sex (50.3% were female). Regarding race, the vast majority of youth were Caucasian (92.7%) with smaller amounts of African-American (2.4%), Native American (1.3%), or other groups (3.6%). In accordance with government parlance, Hispanic ethnicity was a separate category that could overlap with racial categories. In our sample, 3.7% of youth identified as Hispanic. The average age of our sample was 14 (range 11–18).

Materials

Data in the current study were drawn from the Ohio version of the Youth Risk Behavior Surveillance System's school-based Youth Risk Behavior Survey (YRBS). Description of the development and validation of the YRBS can be found from the CDC [11, 12]. This survey instrument included several scales of interest to the present study. Reported coefficient alphas are for the current sample. These included the following:

Risk/Protective Factor Variables

Family Involvement

This subscale consisted of nine items related to parental involvement in the lives of the participants. "In my family, there are clear rules about what I can and cannot do" is an example of an item from this subscale. Coefficient alpha was .73.

Depression

This scale consisted of five items related to depressive symptoms. "During the past 12 months, did you ever feel so sad or hopeless almost every day for 2 weeks or more in a row that you stopped doing some usual activities?" is an example item. Coefficient alpha was .63. Analyses revealed that this variable was non-normal in distribution and a square-root transformation was used to normalize the data.

Illegal Substance Use

This fifteen item scale measured the frequency of use of multiple forms of illegal drugs (from marijuana to "hard" drugs such as cocaine and heroin). Coefficient alpha was .82.

Media Usage

Two items measured frequency of television and video game screen time. "On an average school day, how many hours do you watch TV" is an example item. These were summed together to form a measure of total media viewing time.

Peer Delinquency

Eleven items examined peer involvement in illegal or rule-breaking activities. “In the past year how many of your best friends have carried a handgun” is an example item. Coefficient alpha was .79.

Negative Community

Thirteen items assessed the degree to which negative community influences predominated in the youths’ neighborhoods. An example item is “In your neighborhood, if you wanted to get a handgun, how easy would it be to get one?” Coefficient alpha was .72.

Positive School

Seven items examined the potential positive influence of youths’ schools. An example item is “There are lots of opportunities in our school to talk to a teacher one-on-one.” Coefficient alpha was .64.

Outcome Variables

Antisocial Personality Traits

This subscale consisted of six items related to acceptance of rule-breaking and antisocial behavior. “How wrong do you think it is to attack someone with the idea of seriously hurting them” is an example item from this subscale. Coefficient alpha was .79. Analyses revealed that this variable was non-normal in distribution and a square-root transformation was used to normalize the data.

At-Risk Aggressive Behavior

Two separate individual items assessed the frequency of physical fights over the past 12 months and the frequency of carrying a weapon to school over the past 30 days. These questions are similar to those used in the National Survey on Drug Use and Health report [6].

Procedure

Two counties (Warren and Clinton) in Ohio were invited by the State of Ohio to participate in the 2007 administration of the YRBS. Passive parental consent was used for all youth in grades 6 through 12, and children assented to the procedure. In most cases, participation was computer-based, with survey responses entered through a Smartrack web system in the school computer labs. Teachers proctored but remained at a distance to assure survey responses were anonymous. In two schools, scantron pencil/paper responses were used and entered into the database. All procedures were designed to meet federal standards for ethical research with human participants.

Results

As a note, because of the large sample size for the current study, the risk of effects of small size achieving “statistical significance” despite limited practical significance is an important issue to consider. Past research has indicated that results with such small effect sizes tend to be unreliable and prone to Type I error [13]. In order to guard against this possibility with our current data set, we have selected to use more stringent criteria for statistical significance. First, we have adopted the lower $P = .01$ alpha level as indicative of statistical significance. Second, we have used a cut-off effect size of $r = .10$ as indicative of practical significance [14]. The more conservative $r = .20$ was employed to indicate results of particular practical merit [15].

Descriptive Results

Consistent with past research, in the current sample, 30.9% of youth reported being in a physical fight during the past 12 months. Regarding carrying a weapon, 14.1% reported carrying a gun, knife, club, or similar weapon on their person in the past 30 days. Not surprisingly, males were more likely to report being in a physical fight ($t = 15.33$, $P < .001$, $r = .19$) and carrying a weapon ($t = 22.00$, $P < .001$, $r = .28$) compared to females.

Risk Factors for Antisocial Traits and Behavior

Table 1 presents the standardized regression coefficients for three hierarchical multiple regressions examining risk factors for antisocial personality traits, frequency of physical fights over the past 12 months, and weapons carrying over the past 30 days. All variables included met assumptions of normality (following square root transformations for

Table 1 Multiple regression results for antisocial outcomes

Predictor variable	Outcome variables		
	Antisocial personality	Physical fights	Weapons carrying
Male gender	.07	.15* (.13, .17)	.20** (.18, .22)
Depression	.05	.21** (.19, .23)	.07
Illegal substance use	.19* (.17, .21)	.19* (.17, .21)	.19* (.17, .21)
Antisocial personality	N/A	.15* (.13, .17)	.14* (.12, .16)
Family involvement	-.18* (-.16, -.20)	.05	-.01
Delinquent peers	.14* (.12, .16)	.03	-.02
Negative community	.23** (.21, .25)	.03	.07
Positive school	-.15* (-.17, -.13)	-.02	-.02
Media use	.04	.03	.00
R^2 model	.54**	.23**	.18**

Note: Reported values are standardized regression coefficients (i.e. Beta weights). Numbers inside parentheses denote 95% confidence interval

* Denotes significance at the $p = .01$ level, and meets minimum $r = .10$ for practical significance

** Denotes results that meet the $r = .20$ level for practical significance

depression and antisocial personality) and independence for use in multiple regressions. Multicollinearity was not a problem with all VIFs below 2.1 and all tolerances above .46.

Hierarchical regressions were used with sex entered on the first step; depression and illegal substance use (along with antisocial personality traits for the fighting and weapons carrying outcomes) entered on the second step; the influence of family, peers, neighborhood, and schools entered on the third step; and media use entered on the final step. This order was selected to represent intrapsychic/proximal variables entered sooner and more distal variables entered later in the analyses.

Results indicated that multiple risk and protective factors predicted the development of antisocial personality traits in youth. Association with delinquent peers, use of illegal drugs and living in a problem neighborhood were predictive of increased antisocial traits, whereas family involvement and positive school influences functioned as protective factors. Physical fighting was best predicted by male gender, depression, use of illegal drugs and antisocial personality traits. Weapons carrying was predicted only by male gender, illegal substance use and antisocial personality traits. Media use did not predict any outcome variables.

Structural equation modeling using the AMOS program was further used to test the efficacy of a model involving the significant risk factors identified in the regression equations as predictors of antisocial personality traits and aggressive behaviors (fights and weapons carrying). It should be noted that SEM, in this case, uses correlational data and should not be used to imply causality. However, this can be an important tool for testing the utility of competing models of behavior. Several indices of “good fit” such as the Normed Fit Index (NFI), Comparative Fit Index (CFI), or Root Mean Squared Error of Approximation (RMSEA) have been developed for testing SEM models. Theoretical models with NFI and CFI indices greater than .90 and RMSEA lower than .08 are considered good fits to the data. A composite aggressive behavior variable was computed from the fighting and weapons carrying variables. A model was constructed in which antisocial personality was viewed as a mediating variable between environmental risk factors (family, peers, drug use, neighborhood and schools) and aggressive behavior. This model was based on the results from the regression models. Male gender was also included in the model as a unique predictor of aggressive behavior. This provided an excellent fit to the data (NFI = .99; CFI = .99; RMSEA = .05). Parameter estimates for this model are presented in Fig. 1.

Developmental Trends

Because the current study included a relatively wide range of developmental ages, it is possible that a general analysis might mask specific age-related risks. To examine this possibility, participants were split into 2-year age blocks (11–12, 13–14, 15–16, 17–18). The regression analyses described earlier were rerun for these age blocks. These results are presented in Figs. 2, 3, and 4. Only statistically significant standardized regression coefficients are plotted and, for ease of communication the absolute value of effect sizes are plotted for comparison of relative effects. For antisocial traits as can be seen, the influence of drug use and peers tended to increase across the teen years, whereas the influence of families tended to decrease. These results are plotted in Fig. 2.

Results for fighting behaviors are plotted in Fig. 3. As can be seen, depression is the strongest risk factor for physical fighting among the youngest teens (11–12 years old) but is quickly replaced in importance by illegal substance use and antisocial personality traits in the later teen years.

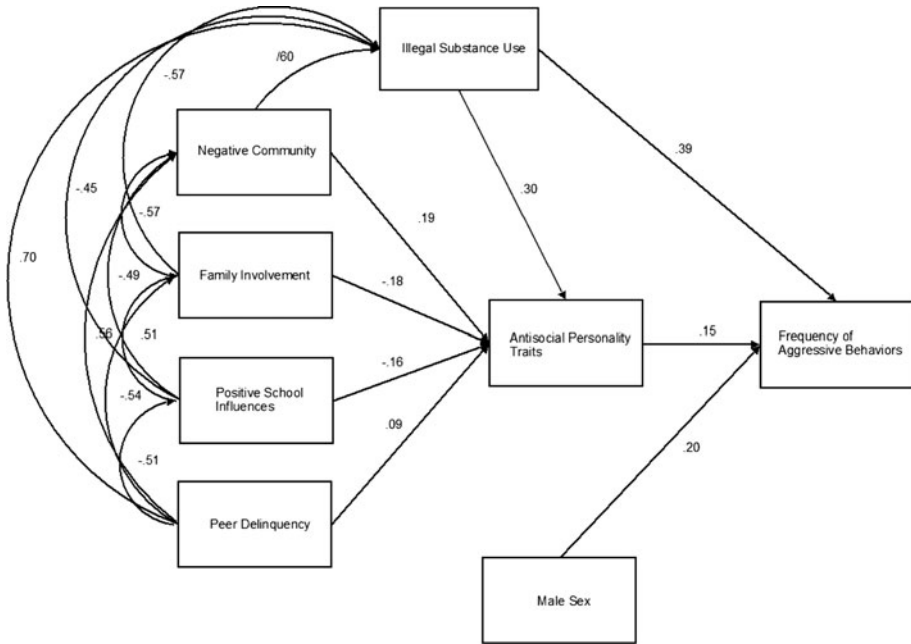


Fig. 1 Structural equation model path estimates

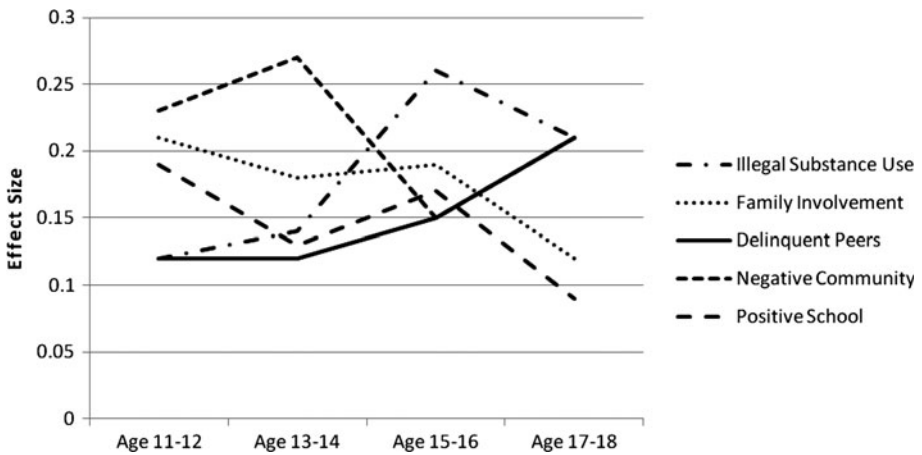


Fig. 2 Age-related trends in antisocial personality traits

Results for weapons carrying are plotted in Fig. 4. There were fewer clear trends with this data, with gender and substance use variables generally holding steady patterns over time. The one clear exception was for antisocial personality traits which increased in importance over age ranges.

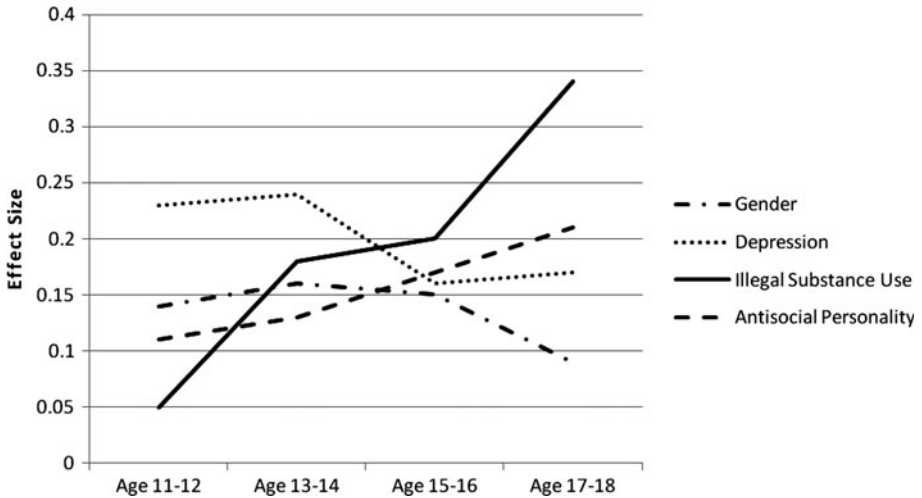


Fig. 3 Age-related trends in physical fighting

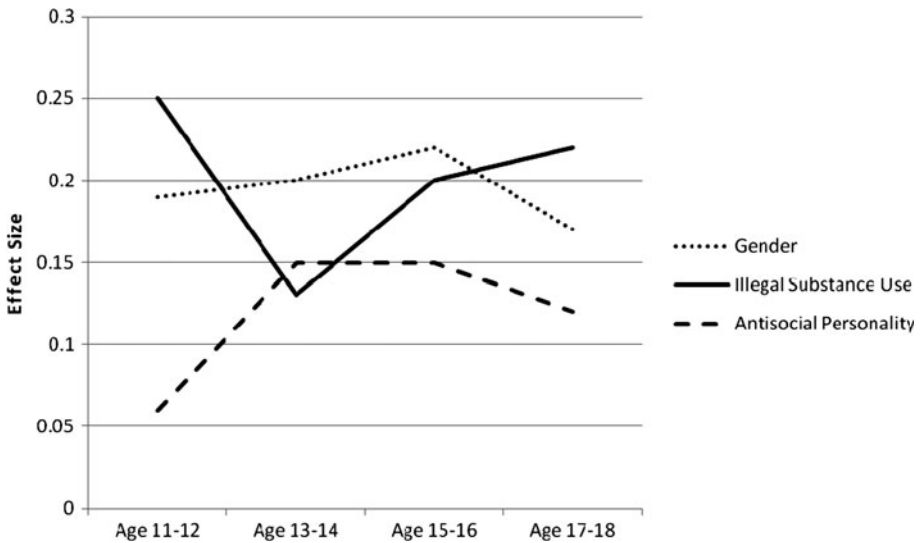


Fig. 4 Age-related trends in weapons carrying

Discussion

The current study examined the influence of multiple risk and protective factors for youth antisocial traits and aggressive behaviors, namely physical fights and weapons carrying. Results for antisocial personality traits indicated that multiple risk and protective factors influence the development of antisocial personality traits in youth. Delinquent peers, illegal substance use and negative communities increase risk, whereas family involvement and positive school experiences function as protective factors. For fighting behaviors, male gender, depressed mood, drug use, and antisocial personality were predictive of frequency

of physical fights in the past 12 months. As such, the picture emerges of an at-risk youth who is typically male, aggressive in disposition, substance abusing, and depressed. For weapons carrying, a similar pattern emerged. Weapons carrying was more common among males with a history of drug use and antisocial personality traits.

An examination of the relative importance of specific risk factors over time reveals several important points. First, as one might expect, risk factors for antisocial outcomes do vary with age. Generally speaking, the importance of drug use as a risk factor for antisocial outcomes tends to increase across teenage years. Similarly antisocial personality traits and peer influences tend to increase in influence across age categories. By contrast, the influence of depression on fighting behaviors and family environment on antisocial traits tends to decrease across age categories. Knowledge of the relative importance of these risk factors at specific age ranges may help target specific intervention and prevention efforts to specific cohort ages. To our knowledge, few studies have examined developmental patterns in a similar manner.

Media use was not associated with any antisocial outcomes. Although media use and media violence exposure continues to be an area that is subject to intense debate, our results are consistent with those of others that have questioned the utility of media violence as a predictor of youth antisocial behaviors [8, 16–20]. It may be simply that any correlation between media use and antisocial behavior is explained by third variables such as family, peers, and personality. However it should be noted that in this study only frequency of general media use was assessed, not consumption of specific types of media (i.e. violent media). As such, conclusions in this area must be tempered in the current study.

The current study is not without limitations. First the sample, although large, is Caucasian majority, limiting generalization to other ethnic groups. Second, as the study includes only adolescents enrolled in school, it is possible that more severely antisocial adolescents may have been excluded from these analyses (i.e. expelled, suspended, drop-out). Third, as the data are cross-sectional, no causal inferences can be attributed.

The current study was designed to examine the interactions between multiple risk and protective factors in predicting youth outcomes related to youth antisocial traits and behaviors. Our results suggest that peers, substance abuse, families, and communities may be particularly fruitful targets for preventative efforts. For physical fighting specifically, substance abuse and problems with depression may be particularly useful targets for prevention, consistent with previous research [1, 2, 7, 8]. We hope that our results will be helpful in guiding future prevention and intervention efforts for youth at-risk for antisocial behavior problems.

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