

## **Violence Exposure and Early Adolescent Alcohol Use: An Exploratory Study of Family Risk and Protective Factors**

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*In this short-term longitudinal exploratory interview study, the relations between exposure to community violence and subsequent alcohol use were examined, with a focus on caregiver and family variables as moderators. Maternal caregivers and their children (N =101 families; 98% African American; M child age = 11.2 yrs) were interviewed separately and completed measures of violence exposure, caregiver and child adjustment, including substance use, and family functioning. Family interaction was also videotaped and coded. Child alcohol use at Time 2 was positively associated with all forms of violence exposure, and was negatively related to felt acceptance from caregiver, but was not associated with caregiver-rated family competence, observer-rated family interaction, maternal problems with alcohol, or maternal psychopathology. Logistic regression analyses predicting child alcohol use at Time 2 indicated that exposure to community violence increased risk of alcohol use, and felt acceptance from the caregiver decreased the likelihood of alcohol use, but did not buffer the effects of violence exposure on alcohol use. Implications and future directions are discussed.*

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**KEY WORDS:** violence exposure; adolescents; alcohol use; family risk and protective factors.

Exposure to community violence among inner-city youth is associated with a host of adjustment difficulties (Lynch, 2003), including internalizing and externalizing behavior problems, post-traumatic stress disorder symptomatology, impairments in memory and cognition, and substance use and abuse.

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Links between exposure to community violence and adjustment difficulties are not surprising given the magnitude of exposure experienced by youth. For example, Richters and Martinez (1993) reported in their study of 6–10 year old African American youth that 61% of children in the first and 2nd grades and 72% of children in the 5th and 6th grades report witnessing shootings, stabbings, and even muggings. In two more recent studies, Campbell and Schwartz (1996) reported that 88% and Purgugganan, Stein, Silver, and Benenson (2000) reported that 79% of middle school students had witnessed a violent event such as shooting, stabbing, and mugging. Further, research by Farrell and Bruce (1997) found that 31% of 6th grade urban boys and 14% of girls reported that someone had threatened to kill them; 42% of boys and 30% of girls reported having seen someone shot; and 87–96% of both boys and girls report having seen someone beat up, heard gunfire, and had witnessed arrests.

Despite the number of studies examining exposure to community violence and adjustment in youth, relatively few researchers have examined links between exposure to community violence and substance use and abuse. Youth use of alcohol and other drugs, although it has declined in recent years, remains a problem for our society. The earlier a child initiates the use of alcohol or drugs, the greater is his or her risk of becoming involved in a wide range of problem outcomes, including aggression, school failure, delinquency, and especially later problem use and abuse of substances (Jackson, Henrickson, & Dickinson, 1999; Kaplan, Curran, Angold, & Costello, 2001; Simons-Morton, 2004). Early initiation of alcohol use also is related to poor adjustment in adulthood (Tubman, Vicary, von Eye, & Lerner, 1990), and initiation of other illicit substances (Yamaguchi & Kandel, 1985). Because early experimentation with substances appears to be a critical precursor of later substance abuse, determining which factors are most likely to contribute to youth's early initiation of substance use is important.

Much research on violence exposure and substance use has provided evidence for strong associations between victimization and youth substance use and abuse, but witnessing violence is also associated with increased risk of adolescent substance use and abuse. Many more adolescents witness versus experience violence, and therefore witnessing violence accounts for greater attributable risk (Rothman & Greenland, 1998) than experiencing violence. Recent work by Sullivan, Kung, and Farrell (2004), Kilpatrick et al. (2000), and Kliever et al. (2005) found significant associations between witnessing violence and substance use or abuse. The samples in these studies varied widely, suggesting the robustness of this finding.

One approach to the topic of violence exposure and substance use is to examine phenotypic, proximal environmental, or distal environmental influences (Wachs, 2000) that explain why some youth who are exposed to violence are more likely than others to use or abuse substances; that is, to test hypothesized

moderators of the associations between violence exposure and substance use and abuse in youth. Tests of moderator effects provide information about which youth may be most in need of intervention in the face of violence exposure. In the present exploratory study we build on the existing literature by examining links between exposure to community violence and alcohol use in youth, with a focus on qualities of the caregiver, the caregiver-child relationship and family environment as potential moderating factors.

Many of the protective factors examined in the context of community violence exposure reflect youths' relationships with their parents, or the broader family climate (Youngstrum, Weist, & Albus, 2003). Research examining the role that parent-child relations play in a child's adjustment suggests that positive parenting and close parent-child relations can improve the child's adjustment, alleviate the child's propensity to engage in harmful behaviors such as substance use, as well as buffer the negative consequences associated with community violence exposure (Ozer, Richards, & Kliewer, 2004). For example, in a prospective study of 1,400 rural 6th graders, Sullivan et al. (2004) found that family support and parental monitoring buffered the relation between witnessing community violence and alcohol and drug use. In the broader literature on adolescent substance use that is not specific to violence exposure, monitoring (Chilcoat & Anthony, 1996; Chilcoat & Breslau, 1999; Flannery, Williams, & Vazsonyi, 1999; Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Li, Stanton, & Feigelman, 2000; Mounts, 2001; Svensson, 2000), parental responsiveness (Bogenschneider, Wu, Raffaelli, & Tsay, 1998), mother-adolescent bonding or attachment to parents (Bahr, Maughan, Marcos, & Li, 1998; Brook et al., 2001; Corwyn & Benda, 2000), parental support (Corwyn & Benda, 2000; Marshall & Chassin, 2000; Piko, 2000; Sullivan et al., 2004), family cohesion (Dakof, 2000), and low or no family substance use (Brook et al., 2001) is linked to lower adolescent substance use.

In this study, we focus on both risk and protective factors that characterize caregivers, the caregiver-child relationship, and the family environment. Based on past research, we chose to examine felt acceptance from caregiver, observed caregiver-child interaction, and family competence as protective factors. Maternal psychopathology, problems with drugs and alcohol, and use of drugs and alcohol to cope were selected as family risk factors. We expected that exposure to community violence and maternal adjustment difficulties, problems with alcohol and drugs, and use of drugs and alcohol to cope would be associated with increased risk for alcohol use; felt acceptance from caregiver, high family competence, and a high observed quality of interaction with caregiver were expected to be associated with decreased risk of alcohol use. We also anticipated that a high quality caregiver-child relationship and high family competence would attenuate the links between exposure to violence and substance use, while maternal psychopathology, problems with alcohol, and use of substances to cope would exacerbate such risk.

## METHOD

### Participants

Participants included 101 African American 9 to 13 year olds (2% self-identified as biracial) (55% male;  $M$  age = 11.14 yrs,  $SD$  = 1.28, Range = 98–164 mths) and their maternal caregivers, most of whom (89%) were the child's biological mother. All participants lived in neighborhoods characterized by moderate to high violence in Richmond, Virginia, as indicated by police statistics. Two-thirds of the participants resided in public housing communities. During the course of data collection, for example, the six neighborhoods from which most participants were recruited had 32 homicides, 199 robberies, and 2,140 assaults. These six neighborhoods alone logged over 9,100 crimes of all types during the data collection period.

A range of family structures were represented in the sample, though most (52%) of the caregivers had never married. Twenty-one percent of caregivers were married or cohabitating at the time of the study, 15% were separated; 10% were divorced; and 1% were widowed. Marital status was unknown for two participants. Slightly over one-fourth of the caregivers (27%) had not completed high school, while 49% had finished high school or completed their G.E.D. Twenty-four percent of the caregivers had some training beyond high school, including 5% who had earned a bachelor's or master's degree. Weekly household income averaged \$101-200/week, with one-fifth (18%) of the families in the study earning less than \$100/week. Families were interviewed twice, 6 months apart. Seventy families returned for the Time 2 interview.

### Measures

#### *Violence Exposure*

*The Survey of Children's Exposure to Community Violence* (Richters & Saltzman, 1990) was used to assess the child's level of violence exposure. This measure assesses the frequency a child has been victimized by, witnessed, or heard about 20 different forms of violence and violence-related activities within their community. Respondents indicate how often (0 = never to 4 = almost every day) they had been victimized (10 items), witnessed violence (18 items), or heard about violence (12 items) in the past year as well as in their lifetime. A sample victimization item is "How many times have you been chased by gangs or older kids?" A sample witnessing item is "How many times have you seen someone attacked or stabbed with a knife?" A sample hearing about item is "How many times have you only heard about someone being shot in your community?" This measure has been used in many studies including the NIMH Community Violence Project

conducted by Richters and Martinez (1993). Past year frequency of experiencing, seeing, and hearing about violence assessed at Time 1 was used in the present study, with higher values reflecting more exposure.

### *Caregiver-Child Relationship Quality*

Quality of the caregiver-child relationship was assessed with the 20-item acceptance/rejection subscale from the Child Report of Parent Behavior Inventory (CRPBI; Schaefer, 1965). This measure was completed at Time 1. Using a 3-point Likert scale, children rated the extent to which they felt the statements were representative of their maternal caregiver from 1 (like my parent) to 3 (not like my parent). Sample items included “understands your problems and your worries” and “enjoys doing things with you.” Research by Kliever and Kung (1998) suggests that the CRPBI has good internal consistency (alphas > .90), and predicts children’s adjustment problems. In this study, Cronbach alpha reliability was .84. Higher scores indicate greater felt acceptance.

### *Family Competence*

The Self-Report of Family Inventory—competence subscale (SFI; Beavers & Hampson, 1990) was used to assess family competence. At Time 1, caregivers completed this 19-item subscale. Aspects of family competence assessed by the SFI include happiness, optimism, problem-solving and listening skills, family love, parent or adult coalitions without significant parent-child coalitions, allowance for individuality, and low blaming. Test-retest reliabilities across 1–3 month intervals were .80–.88. Cronbach alpha was .86 in the present study.

### *Observed Family Interaction*

Observations of caregiver-child interaction were used to index relationship quality. At Time 1, caregivers and children were videotaped while making a building together with blocks. The instructions were to make a building together in 5 min using a certain number of each color of block. More blocks were put on the table than were called for in the instructions. The caregiver-child interaction coding system was developed by the second author, based on a review of existing family interaction coding systems (e.g., Beavers & Hampson, 1990). The coding system had 5 major categories of interaction (with 4 to 8 dimensions under each category) and one overall rating. The five dimensions were affect, structure, cooperation, verbal communication, and non-verbal communication. After being trained for reliability (pearson correlations ranged from .78 to .96), two-person teams coded

each tape in a randomly selected order. For the present study, the overall rating, ranging from 1 (the poorest interaction) to 5 (the best interaction) was used.

### *Maternal Problems with Alcohol*

Maternal problems with alcohol were assessed with a 9-item scale. Items were obtained from various measures of alcohol abuse problems including the AUDIT and the Michigan Alcohol Screening Test (MAST). Items included: want to stop or cut down on drinking, needed a drink before breakfast, failed to live up to responsibilities due to drinking, spent a lot of time over days drinking and recovering, had problems with family due to drinking. Alpha reliability for this scale was .88.

### *Maternal Use of Drugs to Cope*

At Time 1 the 4-item drug coping subscale of the COPE (Carver, Scheier, & Weintraub, 1989) was used to assess the extent to which caregivers endorsed using drugs or alcohol to cope with stress. The dispositional version of the measure was used in the present study, and the directions asked participants to “refer to coping with events beyond one’s control.” The COPE has excellent validity and reliability (Carver, Scheier, & Weintraub, 1989). Alpha reliability for this subscale was .64.

### *Maternal Psychological Adjustment*

The anxiety, depression, and hostility subscales of the Brief Symptom Index (BSI; Derogatis, 1992), a 53-item self-report inventory that assesses psychological symptom patterns in clinical and nonclinical samples, was used. Individuals rate on a 5-point scale how much each symptom has distressed them in the past week. The BSI has good reliability acceptable predictive validity with clinical and nonclinical samples (Derogatis, 1992). BSI responses were obtained at Time 1. Alpha reliabilities were .81 for anxiety .86 for depression, and .74 for hostility.

### *Alcohol Use*

Alcohol use in youth was measured by questions from the Monitoring the Future (Bachman, Johnston, & O’Malley, 1996) study. Youth were asked about lifetime, yearly, and monthly alcohol use during the Time 2 interview. Based on the low frequency of reports of alcohol use in the past 30 days or year, lifetime alcohol use was dichotomized and used as the outcome measure. Youth who reported lifetime alcohol use at Time 2 also self-reported more symptoms of depression and conduct problems, and had lower levels of self-esteem at Time 1,

relative to youth without a history of alcohol use, thus lending validity to the reporting.

### Procedure

Participants were recruited from moderate to high violence areas within the City of Richmond, Va. They were recruited through community agencies and events, and by canvassing qualifying neighborhoods via flyers posted door-to-door. To be eligible, participants had to have lived in their neighborhood for at least 6 months, be the legal guardian of at least one 9 to 13 year old child, and be willing to participate in both phases of the project, which included two interviews, 6 months apart. Eligible respondents were then scheduled for interviews, which were conducted in a lab at Virginia Commonwealth University. Transportation to the interview and child care were provided to minimize barriers to participation.

After participants arrived at the lab, a trained research assistant reviewed the consent form with the child and their maternal caregiver, and answered any questions. After providing written consent, the caregiver and child were taken to separate rooms where they were interviewed privately by research assistants (trained graduate and undergraduate students). Additional assent was provided by the child before initiating the interviews. Face-to-face interviews using visual aids were used to collect the data, and all questions were read aloud. Tests of interviewer effects revealed no meaningful differences across interviewer race or gender. Time 1 interviews lasted approximately 3 h; Time 2 interviews lasted about 2.5 h. Participants received \$40 at each wave of data collection, and were entered into two \$100 drawings.

## RESULTS

### Attrition Analyses

Seventy of the original 101 families returned for the Time 2 interview, however one child refused to participate yielding data on 69 families. Of the 31 families who did not return for their Time 2 interview, 2 were ill at the time of the interview; 6 could not be called back because we did not have Institutional Review Board approval when it was time for their follow-up interview (All research at VCU was closed for a period of time, and each study had to be re-reviewed); 10 we could not locate; 7 refused; and 6 were not called back due to CPS referral, high child depression score, or suspect data. Families where the child interviewed was male were less likely to return for the Time 2 interview than if the child participant was female,  $t(99) = 2.11, p < .05$ . Caregivers,  $t(98) = 1.78, p < .10$ , and children,  $t(99) = 1.72, p < .10$ , who were younger tended to be less likely to return. There

were no differences between families who did and who did not return for the Time 2 interview on caregiver education, household income, violence exposure, felt acceptance by caregiver, family cohesion, maternal alcohol and drug use, maternal hostility, depression, and anxiety, interaction with the mother, or youth alcohol use,  $ps > .10$ .

### Descriptive Analyses

Table I presents descriptive information on and correlations among the predictor and moderator variables. As seen in Table I, witnessing, hearing about, and being a victim of violence was positively associated with youth alcohol use. Family competence was not significantly related to child alcohol use. However, the child's felt acceptance by the mother was negatively associated with the child's alcohol use. Of the 69 youth who completed measures at Time 2, 11 (16.7%) reported some lifetime alcohol use; 55 (83.3%) reported no lifetime alcohol use. Data were missing on 3 youth. There were no significant gender differences in patterns of alcohol use,  $p > .10$ . Table II provides differences in the study variables for children who did and did not report alcohol use. As seen in Table II, youth who reported a history of alcohol use also reported hearing about, witnessing, and being victim to a violent event. These youth also reported feeling less accepted by their mother. There were no differences between youth reporting a history of alcohol use and those who do not on family competence, interactions with the mother, maternal alcohol and drug use, maternal depression, maternal hostility, and maternal anxiety.

### Regression Analyses

Logistic regression analyses were used to determine links between exposure to community violence and alcohol use, and whether these links were moderated by caregiver and family factors. Separate analyses were run for each type of violence exposure in order to increase power. For all analyses, the continuous-level predictor and moderator variables were centered (i.e., the mean was subtracted), and interaction terms were computed from the centered variables. Based on the correlational analyses, only felt acceptance was analyzed as a protective factor. Age was entered in Step 1 as a covariate, violence exposure (witnessing, hearing about, or experiencing) was entered in step 2, followed by felt acceptance of the maternal caregiver in step 3, and the violence exposure X felt acceptance interaction in step 4.

As seen in Table III, age was associated with alcohol use in all analyses. Further, with age controlled, there were main effects of victimization and hearing about violence on alcohol use, as well as effects for felt acceptance from caregiver



**Table I.** Correlations Among the Predictor and Moderator Variables

	2	3	4	5	6	7	8	9	10	11
1-Victimization	.69***									
2-Witnessing		.74***	-.58***	.07	.13	.02	-.05	.16	.11	.08
3-Hearing about		.83***	-.53***	-.13	-.08	-.08	-.05	.03	.03	.04
4-Felt acceptance			-.47***	-.17	0	-.08	-.05	.09	.09	.10
5-Family competence				.11	.22	.08	.02	-.21	.01	-.08
6-Observed family Interaction					.28*	.09	-.01	-.19	-.30*	-.28*
7-Maternal problems with alcohol						.19	.10	.08	.09	.06
8-Maternal use of drugs to Cope							-.04	.08	.04	0
9-Maternal Hostility								.18	.09	.09
10-Maternal depression									.57***	.65***
11-Maternal anxiety										.58***

Note. N = 63 listwise.

\* p < .05.

\*\* p < .01.

\*\*\* p < .001.

**Table II.** T-Tests Comparing Youth with and Without an Alcohol Use History

Variable	Lifetime alcohol use ( <i>n</i> = 11)		No lifetime alcohol use ( <i>n</i> =55)		<i>t</i> value
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Victimization	6.13	4.92	2.16	3.09	-3.48**
Witnessing	20.63	9.96	9.34	8.20	-3.87***
Hearing about	19.86	11.23	6.73	5.71	-5.76***
Felt acceptance	45.09	6.36	52.16	6.53	3.29**
Family competence	77.14	20.39	77.97	10.13	<1
Observed interaction	2.80	0.89	2.96	1.18	<1
Maternal problems w Alc	0.64	0.92	1.22	2.24	<1
Maternal drug coping	1.18	0.40	1.12	0.29	<1
Maternal hostility	5.18	4.29	3.24	3.24	-1.72
Maternal depression	5.09	4.83	3.95	4.78	<1
Maternal anxiety	5.82	5.00	4.28	4.37	-1.04

\**p* < .05.

\*\**p* < .01.

\*\*\**p* < .001.

in two of the three analyses. However, felt acceptance did not interact with violence exposure in any of the analyses. Thus, violence exposure increased risk of lifetime alcohol use in these young, urban adolescents, and felt acceptance from caregiver decreased risk of alcohol use, but felt acceptance did not moderate associations between violence exposure and alcohol use.

## DISCUSSION

We hypothesized that among this sample of early adolescents, those who were exposed to community violence would be at increased risk for alcohol use. Results of this exploratory study indicated that this was the case. All forms of violence exposure-experiencing, witnessing, or hearing about violence-increased the likelihood of alcohol use. This finding is consistent with work of several recent studies of violence exposure and substance use in youth (Kilpatrick et al., 2000; Kliever et al., 2005; Sullivan et al., 2004). Notably, one-sixth of the youth studied reported some use of alcohol; all were 11–13 years old. The majority of work on substance use in adolescents is with older youth. This exploratory study confirms the need to investigate substance use among early adolescents.

Although exposure to violence predicts alcohol use, family factors may serve to decrease such use. We hypothesized that a number of caregiver and family factors, including felt acceptance from caregiver and general family competence, would decrease the likelihood of use. Conversely, maternal psychological problems, problems with alcohol, and modeling of drug and alcohol use to cope were expected to be associated with increased probability of use.

**Table III.** Logistic Regression Analyses Predicting Alcohol Use from Different Forms of Violence Exposure

	Form of violence exposure														
	Victimization				Witnessing				Hearing about						
	B	SE	B	Exp(B)	CI	B	SE	B	Exp(B)	CI	B	SE	B	Exp(B)	CI
Age	.11	.05	1.12*	1.02-1.23	.11	.05	1.11*	1.02-1.22	.10	.04	1.10*	1.00-1.20			
Violence Exposure	1.62	.72	5.05*	1.23-20.69	.56	.43	1.75	0.75-4.07	1.50	.60	4.46*	1.37-14.57			
Acceptance	-.16	.07	0.86*	0.74-0.99	-.15	.09	0.86	0.73-1.02	-.18	.09	0.84*	0.70-1.00			
VEX ACC	.12	.08	1.13	0.96-1.32	-.01	.05	0.99	0.88-1.02	.07	.06	1.07	0.95-1.21			

\* $p < .05$ .

Our findings indicate that felt acceptance was associated with lower probability of alcohol use, although it did not buffer the effects of community violence. There are a number of possible explanations for this result. Youth who feel accepted by their caregivers may be able to discuss potentially threatening situations with them, and thus are better able to work through their negative experiences (Kliever, Lepore, Oskin, & Johnson, 1998). Further, children who are accepted by their caregivers tend to have higher self-esteem (Ainsworth & Bowlby, 1991), are more effective copers (Mikulincer & Florian, 1997), and are able to adapt to situations more readily (Ainsworth & Bowlby, 1991). Thus, youth with a strong sense of acceptance from caregivers may have less of a need or desire to use alcohol to cope with stress, or may have a greater ability to resist peer pressure to consume alcohol.

Family competence-assessed with both caregiver report and observations of caregiver-child interaction-was not associated with decreased likelihood of alcohol use and did not buffer the effects of violence exposure. Given the strong association of felt acceptance with less alcohol use, this suggests that the youth's own perception of being loved, valued, and cared about is the operating protective factor-not the views of the caregiver or observers external to the family.

Several caregiver variables were hypothesized to increase the probability of alcohol use, including caregiver psychopathology, problems with alcohol use, and use of drugs and alcohol to cope. None of these variables was significantly associated with the increased probability of alcohol use, although there was a trend for caregivers who were hostile to have children who used alcohol. These findings are somewhat surprising, given that research has shown that parental alcohol use behavior exacerbates substance use in children (Grant & Dawson, 1997). It may be that the youth in our study were not old enough to show this association.

From a stress and coping perspective (Lazarus & Folkman, 1984), witnessing community violence, particularly serious violence, can be seen as a stressor that elicits responses designed to decrease negative affect associated with the stressor. In this vein, substance use may be one coping strategy adolescents choose to manage their negative affect. When used to decrease negative affect, substance use can be considered a form of avoidant coping, which means that blunting the negative emotions aroused by the stressor is the focus of the behavior rather than attacking the source of the stress, which may be infeasible in the case of community violence. Research with adolescents regarding *why* they use substances is relevant to this point. Simantov, Schoen, and Klein (2000) found in a nationally representative school-based survey of over 5,500 adolescents that 70% of girls and 56% of boys who were regular smokers ( $N = 613$ ) said they smoked because cigarettes helped them to relieve stress. Among adolescents who were regular drinkers ( $N = 1,088$ ), 35% of girls and 27% of boys said they drank to relieve stress. Certainly relief from stress is not the sole

reason adolescents use or abuse substances, but it is one of the main contributing factors. As with other forms of avoidance coping, substance use and abuse may be effective in the short-term, but is maladaptive in the long run (Brennan & Moos, 1991).

Violence exposure results in negative outcomes for youth. Not only do they face difficulty with aggression and depression, but they also are more likely to engage in alcohol use at young ages. The results of this study suggest that strengthening caregiver-child bonds for youth exposed to community violence is one strategy interventionists might use in working to reduce youth substance use.

Strengths of the present study included the longitudinal design, and data from multiple sources (youth report, caregiver report, and observations of behavior). However, the small sample size limited the ability to detect group differences or to run more complex analyses. Despite the limitations, our findings indicate that exposure to community violence may contribute to early alcohol use in youth. Understanding the contextual factors that may contribute to early alcohol use may aid in developing interventions to alleviate this problem in youth.

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