

# INDIVIDUAL MEASUREMENT OF EXPOSURE TO EVERYDAY VIOLENCE AMONG ELEMENTARY SCHOOLCHILDREN ACROSS VARIOUS SETTINGS

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*One hundred and thirty-four second- and fourth-grade students from two schools in Israel were measured individually using a Hebrew adaptation of the Violence Exposure Scale—Revised (VEX-R), a self-report scale measuring children's exposure to everyday violence. Children reported exposure as a function of situation (witness or victim) and setting (home, school, or neighborhood). They also reported on their own distress*

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*symptoms. The children's mothers also completed the VEX-R, indicating how they expected their child would report, and the Child Behavior Checklist. Children reported more exposure to violence at school compared to either the home or neighborhood, and more as witnesses than victims. Most of the violence reported was mild (e.g., pushing, chasing), while severe violence (e.g., shooting, stabbing) was rare in all settings. Children who reported themselves as frequent victims of violence were rated by their mothers as exhibiting more behavior problems than those reporting less victimization. The results support the validity of the VEX-R as a measure of exposure to violence for young children. © 2001 John Wiley & Sons, Inc.*

## INTRODUCTION

Exposure of young children to violence has been shown to have a significant impact on child social development (Garbarino, Dubrow, Kostelny, & Pardo, 1992; Gorman-Smith & Tolan, 1998; Kellam, Ling, Merisca, Brown, & Ialongo, 1998; Osofsky, 1995; Osofsky, Wewers, Hann, & Fick, 1993; Richters & Martinez, 1993). Moreover, chronic exposure to even low levels of violence, especially when occurring in settings expected to provide safety and security (i.e., home or school), may negatively affect children's social development (Richters & Martinez, 1993). Because children learn social skills primarily in the home and school environments, exposure to violence in these settings often results in increased aggressive and antisocial behavior (Baker, 1998; Dodge, Bates, & Pettit, 1990; Miller, Wasserman, Newgebauer, Gorman-Smith, & Kamboukos, 1999). Children's involvement in violence in the community and school settings is a significant problem in the United States (e.g., Kingery, Coggshall, & Alford, 1998; Olweus, 1994). Recent reports point to a significant increase in the level of everyday interpersonal violence among teenagers in Israel (Dgani, 1998; Dgani & Dgani, 1990; Harel, Kani, & Rahav, 1997). The current study investigates whether such violence occurs among elementary school children.

In recent years, research on the effects of violence on children in the community and school has markedly increased (Armsworth & Holaday, 1993; Bell & Jenkins, 1991; Olweus, 1993, 1994; Pellegrini, 1998; Pynoos & Nader, 1990; Sternberg et al., 1993; Trickett & Schellenbach, 1998). Although children who experience violence in the school or neighborhood are often likely to experience it at home as well, relatively little data have been gathered on the differential impact of violence in different settings. Theorists such as Bronfenbrenner (1979, 1986) have called for studies of psychosocial development to pay close attention to the ecology within which children's lives are lived, because their social and physical settings systematically affect their awareness of events and help them structure the "meaning" of those events (Bronfenbrenner, 1979, 1986; Gore & Eckenrode, 1994; Harkness & Super, 1994). This view implies that instruments should be devised to differentially assess exposure to violence in various social settings.

Research on children's exposure to violence in the school setting has focused primarily on adolescents (Kingery et al., 1998; Moore, 1990), although exposure of young children to violence is acknowledged as a major public health problem (see Osofsky, 1995). However, critical methodological questions also exist concerning the manner in which exposure to violence in young children should be measured. Many

studies in the past have relied on parent or teacher reports; only a handful asked young children to report on their own experiences (e.g., Attar, Guerra, & Tolan, 1994; Richters & Martinez, 1993). One reason for this may be a concern, that the reliability and validity of self-report data gathered from young children are unsatisfactory. A number of studies of social and emotional behavior of children, parents, and teachers have found low correlations among these different sources (Achenbach, McConaughy, & Howell, 1987; Crowley, Worchel, & Ash, 1992; Kazdin, 1990; Sternberg et al., 1993). A number of factors may contribute to these results. One factor may be the different focus of self-report as opposed to reports of others. Self-report scales often focus on inner feelings, whereas parent report scales tend to focus on observable behavior (Crowley et al., 1992).

Other investigators have claimed that the most accurate information about the prevalence of violence among youth is derived from questioning the youth themselves (Kingery et al., 1998). Regarding younger children, there is still some debate concerning their ability to provide accurate information, the accuracy of their eyewitness testimonies and their memory for traumatic events (for a review, see Bruck, Ceci, & Hembrooke, 1998; Ceci & Bruck, 1995). Several investigators have suggested that children are easily led to incorporate details of events suggested to them after the fact (Bruck, Ceci, Francoeur, & Barr, 1995; Leichtman & Ceci, 1995). Recent evidence, however, indicates that children are accurate reporters of specific events even after long periods of time (e.g., Fivush, 1993; Ornstein, 1995). As such, they may be able to report accurately how frequently they experience violence as witnesses or victims in everyday life. They may also be able to report how much this exposure affects their emotions. For example, Martinez and Richters (1993) created a cartoon-based measure depicting a young child experiencing several negative and distressing thoughts and feelings. They asked elementary schoolchildren to report on their distress symptoms, and found that children were able to use this instrument to report on their distress in relation to violence exposure. Also, distress levels were significantly related both to witnessing and being the victim of violence. Other investigators have shown that by the age of 8 years, children are capable of providing useful information about events they experienced, including recency and frequency of occurrence (Powell & Thomson, 1997; Simons-Morton, Baranowski, Parcel, O'Hara, & Matteson, 1990).

The present study used a Hebrew adaptation of the Violence Exposure Scale—Revised (VEX-R; Fox & Leavitt, 1995), a cartoon-based scale of exposure to violence requiring respondents to report how often they had either witnessed or been victims of mild and severe violent acts in different settings (home, school, neighborhood), and how frequently they had seen them on television. The Richters, Martinez, and Valla's (1990) cartoon-based distress symptomatology scale was also administered. Children from schools in two different neighborhoods, varying in levels of crime and violence, were administered the scales individually.

The object of the study was to investigate whether the VEX-R could be a valid and reliable source of information of children's exposure to violence. This conclusion would be demonstrated if children were found capable of distinguishing between types and levels of violence in different situations, thus showing divergent validity. Thus, we hypothesized that: children in schools with relatively high violence would report experiencing more violence than children in the schools known for their low level of violence; reports of TV violence levels would be higher than reports of exposure levels to real-life violence, because violence on television is more frequent and extreme; mild violence would be reported as more frequent than severe violence;

and witnessing violence would be reported as more frequent than being the victim of violence. In addition, respondents' mothers were also asked to complete the violence exposure scale and the Child Behavior Checklist (Achenbach & Edelbrock, 1981). We expected that the extent to which children reported exposure to violence (as either witness or victim), and their reports of subjective distress, would be related to mother reports of behavior problems, thus showing convergent validity. Finally, respondents completed a questionnaire assessing children's perceptions of their parents' level of marital satisfaction and marital conflict. We expected to find children's perceptions of violence in the home to be positively correlated with perceptions of marital conflict.

## METHOD

### *Population*

One hundred and thirty-four elementary school children (2nd grade and 4th grade) and their mothers participated in this study. Ninety-one percent of the children came from two-parent households. Table 1 presents the sample distribution according to school (neighborhood), gender, and grade.

Participants were selected from two schools close in geographically proximity in the Tel Aviv area. Approximately half came from a school located in a lower class, relatively violent neighborhood, and the other half came from a school located in a relatively low-violence neighborhood in the Tel Aviv area. High- and low-violence neighborhoods were selected according to the recommendations of the Municipality of Tel Aviv Research Unit, which selected the two neighborhoods from survey data.

### *Instruments*

*Violence Exposure Scale for Children (VEX-R)*. (Fox & Leavitt, 1995). The VEX-R was constructed to assess children's reports of their exposure to violence across various

**Table 1. Frequencies of Subjects (Families) by School, Gender, and Grade**

	<i>LVN School</i>	<i>HVN School</i>	<i>Total</i>
2nd Grade			
Boys	17	13	30
Girls	15	18	33
Total	32	31	63
4th Grade			
Boys	16	21	37
Girls	17	17	34
Total	33	38	71
Total			
Boys	33	34	67
Girls	32	35	67
Total	65	69	134

*Note:* LVN = Low-violence neighborhood; HVN = High-violence neighborhood.

settings. However, the present study is the first actual administration of the scale. The scale was also administered to preschoolers in the United States (Shahinfar, Fox, & Leavitt, 2000). The version of the instrument used in this study includes 12 pair of cartoon drawings. In each pair of drawings, one depicts a child witnessing a violent event and the other depicts the child as a victim of the same act of violence (see Figures 1 and 2). Each of the 12 pair of drawings was presented to the child three times (except in certain cases, as described below), once for each of three settings: home, school, and neighborhood. For example, for the event “throw something at somebody” there are two drawings: the first in which a child *witnesses* one person throw something at another person, and the second in which a person throw something at the child *himself*. The text for the witness picture is as follows: “Chris is [at home, at school, or in the neighborhood]. Chris sees a person throw something at somebody. How many times have you seen a person throw something at another person in your [home, school, or neighborhood]?” For the victim question, the text reads: “At [home, school, or in the neighborhood], a person throws something at Chris. How many times has a person thrown something at you in your [home, school,

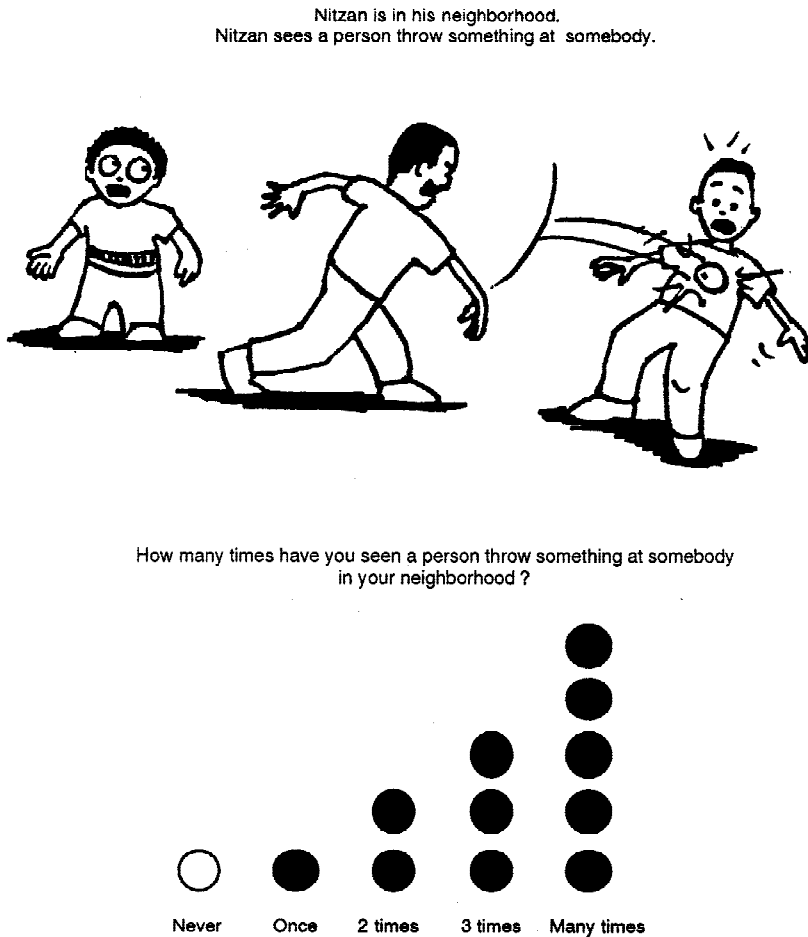
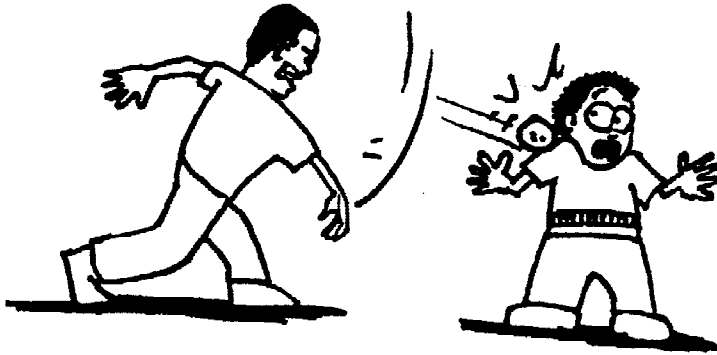


Figure 1. Sample witness item from the VEX-R.

Nitzan is in his neighborhood.  
A person throw something at Nitzan.



How many times has a person threw something at you in your neighborhood?

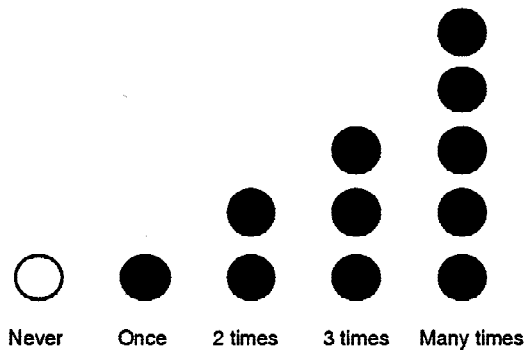
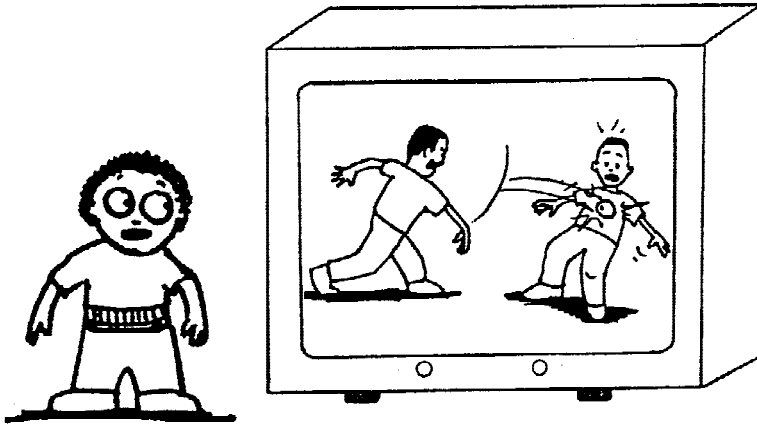


Figure 2. Sample victim item from the VEX-R.

or neighborhood]?” Responses for each item were given on a five-point scale ranging from 0 (“Never”) to 4 (“Lots of times”). The child was presented with columns of circles whose heights reflected the frequency of response (see Figure 1). Prior to administration, the children were trained in the use of the scale by presenting them with a sample question, and the person administering the scale continued training until she was satisfied that the child understood how to use the scale.

In addition to asking each child about the occurrence of violent events in the three settings (home, school, and neighborhood), children were asked to report how frequently they saw the same events on television. We created a separate set of cartoons in which each of the violent events was framed in a television screen, while the child in the picture was shown watching the screen (see Figure 3). Each child was then asked to rate how frequently he or she had seen such an event on TV, using the same scale as the one described. For example, the text for one item read: “Chris is watching

Nitzan is watching TV.  
Nitzan sees one person throw something at another person on TV.



How many times have you seen someone throw something at someone else on TV?

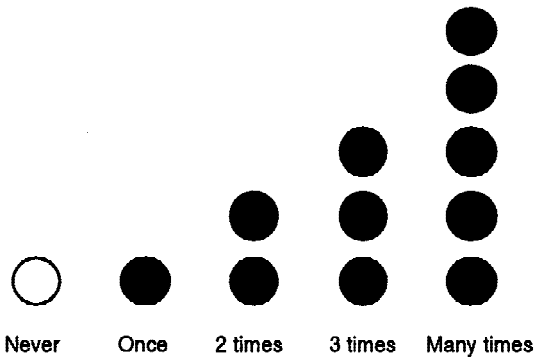


Figure 3. Sample television exposure item from the VEX-R.

TV. Chris sees one person beat up another person on TV. How many times have you seen someone beat up someone else on TV?”

The cartoons in the original VEX-R depicting acts of severe violence (e.g., stabbing and shooting) were presented only in the witness situation. This was because the probability of being a victim of such levels of severe violence is extremely small in Israel for the lower school grades. It should be noted that the scale was originally designed to measure violence in American innercity populations, where the incidence of severe violence may be high. The perpetrators of violence in the home and neighborhood settings were drawn as adults, while the perpetrators of violence in the school were drawn as older children. Table 2 presents the events, settings, and situations (witness, victim, or both), as well as the percentages of respondents who replied “at least once,” for each item.

Table 2. Percentage of Subjects Reporting at Least "One Time" for the VEX Items (N = 134)

	Home		School		Neighborhood		TV
	Witness	Victim	Witness	Victim	Witness	Victim	Witness
Mild violence							
1. Yell	79.7	88.8	90.2	70.7	73.1	34.3	94.7
2. Throw	9.0	8.2	77.4	35.8	40.3	21.6	80.5
3. Push	8.2	9.7	88.7	57.1	53.0	26.9	78.2
4. Chase	—	—	82.0	51.1	49.3	23.1	82.0
5. Slap	33.6	39.6	69.4	31.3	32.8	11.9	72.9
6. Hit	4.5	14.9	88.1	39.6	44.8	14.9	79.7
Severe violence							
7. Robbery	1.5	—	37.3	21.6	11.2	2.2	82.7
8. Threaten w. knife/gun	0.0	0.0	6.7	3.0	3.0	0.7	81.2
9. Stab	0.0	—	1.5	—	0.7	—	57.1
10. Shoot	0.0	—	0.0	—	0.0	—	82.0
11. Arrest	3.0	—	3.7	—	16.4	—	88.0
12. Drugs	0.7	—	0.0	—	4.5	—	45.9

— represents nonexistent items.

We (Erel, Raviv, and Dar) translated the VEX-R into Hebrew. The name "Nitzan" was substituted for the American name "Chris" for the child depicted in each cartoon, because Nitzan is a Hebrew name that can be used for either a male or female child.

*The Levonn Scale.* (Richters, Martinez, & Valla 1990). This is a cartoon-based scale for assessing distress symptoms in elementary school children. The scale includes 39 items, and the child respondent circles one of three thermometers representing how often he or she experienced each distress symptom: never, some of the time, or a lot of the time. The Levonn scale was developed in the United States by Richters and his colleagues (1990) to assess distress symptoms in children who had been exposed to various types of violence. It has been used successfully in the United States with innercity elementary schoolchildren, producing significant test-retest reliability ( $r = .81$ ), and the composite score has been significantly related to ratings by parent on the CBCL ( $r = .30$ ) (Martinez & Richters, 1993). The scale was translated into Hebrew by O. Erel and I. Dar. The name of the central character in the cartoons in the US version is "Levonn"; the name used in the Israeli version is "Sharon."

*The Child Behavior Checklist (CBCL).* (Achenbach & Edelbrock, 1981). The Child Behavior Checklist is a widely used scale of child behavior problems for which a considerable amount of reliability and validity data have been gathered (Achenbach & Edelbrock, 1981). The CBCL yields eight subscales reflecting different domains of children's functioning, shown in numerous studies to discriminate well between clinic-referred and nonreferred children, and three broad-band scores: Internalizing, Externalizing, and Total Behavior Problems. The CBCL has been translated into Hebrew, and has been used in a number of Israeli studies of child development (Auerbach & Lerner, 1991; Sternberg et al., 1993; Zilber, Auerbach & Lerner, 1994).

*Parents' Relationship Interview (PRI).* (Erel & Kissil, 2000). The PRI is a recently developed 18-item instrument designed to assess young children's perceptions of their



parents' marital satisfaction and marital conflict. Higher scores on the PRI suggest greater marital satisfaction and lower levels of marital conflict. Items refer both to positive and negative behaviors in parental interactions. For example, children are asked "Have your mother and father ever hugged each other?", or, "Have your mother and father ever thrown things at one another?" Administration of the PRI requires that it be read aloud to the child. The questions maintain a yes-no response format. However, when a child responds "yes" (i.e., the child acknowledges the occurrence of a certain behavior), he or she is asked if the behavior occurs "a lot" or "a little." Thus, the questions have a three-point rating scale. For example, in one question the child is asked whether he or she have ever heard their parents argue. A "no" response is scored "2." If, however, the response is "yes," the child is asked: "Does this happen a lot or a little?" The response "a little" receives the score "1," while the response "a lot" is scored "0." Items referring to positive behaviors are reverse-scored. Thus, PRI scores range from 0–36, with higher scores suggesting a more positive perception of the parents' marital relationship. The instrument has adequate reliability and validity (Erel & Kissil, 2000).

### ***Research Procedure***

After locating two candidate schools and receiving permission from the Ministry of Education and the Tel Aviv Municipality, we sent letters with the principals' permission to the parents of all the second and fourth graders in each school. These letters described the study and promised a reward for participation. Parents and children who agreed to participate were contacted by phone and told the details of the study. A home visit was scheduled for administration of the research instruments. Examiners, who were three advanced graduate students of clinical child psychology, came to the home of each family and asked the parents to sign a paper stating their willingness to participate in the study. This paper included a clause stating that if a child was discovered to be suffering from distress due to exposure to violence, the family would be referred to the school counselor for help. Examiners were instructed to note any signs of distress in the child participants as a result of violence exposure or participation in the study. Children and mothers were interviewed separately. Children completed the VEX-R, the Levonn, and the PRI measures. Mothers completed the VEX-R, in which they were instructed to indicate what they believed would be their child's response to each item, and the CBCL. Mothers were also administered a questionnaire inquiring about their child's TV-watching habits. At the end of the meeting participants were debriefed, and each child received a purchase voucher worth \$10 good for use at a leading stationery store. According to the examiners' assessments, no children showed any signs of upset due to participation in the study. One child was found to be suffering from distress unrelated to the research procedure, and was referred to the school counselor, with the parents' permission.

Forty-eight percent of the parents contacted agreed to participate. The demographic characteristics of the parents who did not participate did not differ from those who agreed to participate in the study.

## **RESULTS**

Seven factor analyses using Principal Components with Varimax rotation were conducted for all 12 VEX-R items: one for each of the four settings (home, school,

neighborhood, and television viewing) with the child as a witness, and one for each of three settings (home, school, and neighborhood) with the child as a victim. Two factors were found across the seven analyses: (1) Mild Violence—including six items describing relatively common violent behaviors (yell, chase, slap, push, beat up, throw something at); and (2) Severe Violence—including six items describing extreme acts of violence (threaten with a knife or a gun, stab, shoot, arrest, deal drugs, rob). Each child's VEX-R score on each factor (Mild Violence and Severe Violence) was computed using the means of the appropriate items. Mean scores ranged from 0 to 4.

As a first step, the distribution of responses [number of positive responses vs. "never" responses for each setting and situation (witness/victim)] was examined. As seen in Table 2, severe violence was rarely reported at any age (grade), school, or setting. For example, in the Home setting, only 7 out of 134 children reported witnessing some of the severely violent acts, and none reported exposure to severe violence as victims. We, therefore, decided to present the severe violence data mainly for descriptive purposes. Table 3 presents the reliabilities of each VEX score. In assessing reliability, Cronbach alpha coefficients for Mild Violence yielded relatively high values, except for scores in the home setting. The low home setting reliabilities are apparently a result of the fact that three of the five items were reported very rarely (see Table 2). The same reasoning is true for the severe violence scores (except for TV).

We next examined whether there were any socio-economic differences between parents from the two schools. We compared the two groups of parents on education (total of years of education for both mother and father) and density of the household (number of persons divided by number of rooms in the home). Parental education level in the Low Violence Neighborhood (LVN) school was higher than in the High Violence Neighborhood (HVN) School,  $t(132) = 7.20, p < .01$ . Household density was lower for LVN families than for HVN families,  $t(132) = -6.35, p < .01$ . Therefore, as a first step in the analysis of the VEX-R questionnaire data, we used parents' level of education and household density as covariates in comparing data from children in the two schools.

The first major analysis consisted of a  $2 \times 2 \times 2 \times (3 \times 2)$  analysis of covariance, conducted on children's responses to Mild Violence, with School, Gender, and Grade as the between-group variables, Setting (Home, School, Neighborhood) and Situation (Witness vs. Victim) as within-subject variables, and parents' level of education and household density as covariates. Results showed no effect of the covariates, and no

**Table 3. Reliabilities (Cronbach Alpha) of Mild Violence and Severe Violence Items of VEX**

	<i>Mild Violence</i>		<i>Severe Violence</i>	
	<i>Witness</i>	<i>Victim</i>	<i>Witness</i>	<i>Victim</i>
Home	.514	.514	-.040	— <sup>2</sup>
School	.733	.797	.281	.259
Neighborhood	.828	.796	.363	-.019
Total	.822	.824	.562	.484
TV	.796	— <sup>1</sup>	.829	— <sup>1</sup>

<sup>1</sup>Variable not existent.

<sup>2</sup>Scale consists of one item only.

main or interaction effects for Gender. Therefore, all subsequent comparisons were conducted without the covariates and without the factor of Gender.

To assess validity, three questions were initially examined: (1) Are there differences between children's reports of exposure to violence when comparing high and low violence schools? (2) Are there differences between children's reports of exposure to violence as a function of setting? (3) Are there differences in children's reports of exposure as a function of whether the child was a witness or victim?

These questions were examined by MANOVA on children's responses to Mild Violence with School and Grade as between-subjects variables, and Situation and Setting as within-subjects variables. Analyses evaluating the MANOVA assumptions were found satisfactory. The MANOVA table is shown in Table 4, and the appropriate means are shown in Table 5.

The pattern of effects indicates that children in the LVN school reported less exposure to violence than children in the HVN school. Children reported more exposure as witnesses than as victims, particularly in the school and neighborhood. Reports of exposure to mild violence were highest in school.

Regarding the four-way interaction obtained, post hoc comparisons were computed using appropriate *t*-tests, with the Bonferroni correction for multiple comparisons and a significance level of .05. Comparisons were computed between situations (witness vs. victim) for each of the four combinations of school by grade in the three settings (home, school, neighborhood); among the three settings, within each school-by-grade combination, for the two situations; between schools, for each grade; and between grades for each school, for child as witness or victim in the three settings.

**Table 4. Results of MANOVA of Mild Violence Scores for Children by School, Grade, Situation, and Setting**

Source	df	Roy's $\theta$	F
School	1	.118	17.38**
Grade	1	.010	1.30
School $\times$ grade	1	.024	3.14
error	130		(1.72)
Situation	1	.565	168.57**
Situation $\times$ school	1	.065	9.04**
Situation $\times$ grade	1	.084	11.98**
Situation $\times$ school $\times$ grade	1	.006	.74
error	130		(0.52)
Setting	2	.662	126.39**
Setting $\times$ school	2	.217	17.92**
Setting $\times$ grade	2	.190	15.26**
Setting $\times$ school $\times$ grade	2	.020	1.29
error	129		(0.63)
Situation $\times$ setting	2	.661	125.75**
Situation $\times$ setting $\times$ school	2	.120	8.79**
Situation $\times$ setting $\times$ grade	2	.018	1.20
Situation $\times$ setting $\times$ school $\times$ grade	2	.077	5.38**
error	129		(0.30)

Note: Values enclosed in parentheses represent mean square errors. All *F* statistics are exact. Roy's  $\theta$  measures the strength of the effect, and it equals  $\eta^2$ .

\* $p < .05$ ; \*\* $p < .01$ .

Table 5. Means and Standard Deviations (in Parentheses) of VEX Mild Violence Scores<sup>a</sup> for Children

	LVN School			HVN School			Effect Size	
	2nd Grade (n = 32)	4th Grade (n = 33)	Total (n = 65)	2nd Grade (n = 31)	4th Grade (n = 38)	Total (n = 69)	2nd Grade	4th Grade
Home								
Witness	0.92 (0.57)	0.62 (0.49)	0.77 (0.54)	0.82 (0.67)	0.62 (0.63)	0.71 (0.67)	-0.16	0.00
Victim	1.21 (0.68)	0.61 (0.45)	0.90 (0.65)	1.13 (0.69)	0.88 (0.65)	0.99 (0.69)	-0.11	0.47
School								
Witness	1.93 (1.08)	2.52 (0.87)	2.23 (1.02)	2.38 (0.95)	3.14 (0.96)	2.80 (0.95)	0.43	0.66
Victim	1.05 (0.93)	1.16 (1.14)	1.10 (1.03)	1.02 (0.96)	1.34 (0.93)	1.20 (0.96)	-0.03	0.17
Neighborhood								
Witness	0.81 (0.92)	0.74 (0.82)	0.78 (0.87)	1.46 (1.17)	2.38 (1.14)	1.97 (1.17)	0.61	1.61
Victim	0.27 (0.47)	0.19 (0.42)	0.23 (0.44)	0.72 (0.88)	0.78 (0.91)	0.75 (0.88)	0.63	0.80
TV								
Witness	2.02 (1.29)	2.69 (0.99)	2.36 (1.19)	2.69 (0.98)	3.34 (0.88)	3.05 (0.97)	0.57	0.69
Total								
Witness	1.25 (0.63)	1.30 (0.58)	1.27 (0.60)	1.65 (0.71)	2.12 (0.68)	1.91 (0.71)		
Victim	0.82 (0.45)	0.64 (0.55)	0.73 (0.51)	0.98 (0.70)	1.02 (0.69)	1.00 (0.70)		

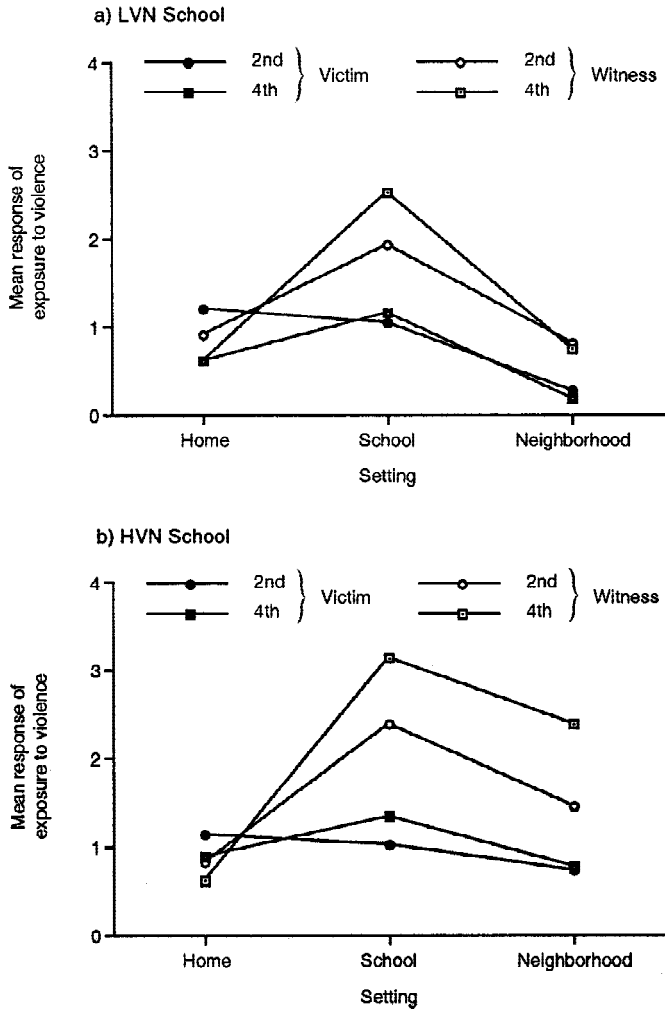
Note: Effect-size is Cohen's *d*, measuring the difference between the two schools.

<sup>a</sup>Settings means comprise five items only, excluding Item 4 ("chase").

Figures 4a and 4b present the significant four-way interaction of situation  $\times$  setting  $\times$  grade  $\times$  school.

Comparisons between schools showed that fourth graders in the HVN school reported witnessing more violence at school and in the neighborhood than fourth graders in the LVN school; they also reported being victims in the neighborhood more often. The estimated effect sizes of school (HVN vs. LVN) are shown in Table 5. These effects were calculated as  $d = (M_H - M_L)/s$  (Cohen, 1988), separately for each of the two grades in each of the different settings and situations. Effects were small in the home setting, and greater in the school and neighborhood, and also greater for the fourth than for the second grade.

Power analysis ( $\alpha = .05$ ) revealed that for the sample sizes used, the probabilities of finding a difference of at least half a standard deviation between the two schools are approximately .52 for the second grade and .56 for the fourth grade. However, the Bonferroni correction (using a significance level of .05/6 for each test) lowers the power to values of about .23 and .27, respectively. This quite low power may explain the nonsignificant school effects of second grade in the school or neighborhood settings.



**Figure 4.** Mild violence means by grade, situation, and setting, for LVN and HVN schools (children’s responses).

The comparisons between grades yielded the following. In the LVN school, second graders reported being victim to everyday mild violence at home more often than fourth graders (Figure 4a); in the HVN school, fourth graders reported witnessing more mild violence in school and in the neighborhood compared to second graders (Figure 4b).

Comparisons between settings show that in the LVN school (Figure 4a), both second- and fourth graders reported witnessing more violence in school than either at home or in the neighborhood. Children in both grades reported being victims at school or at home more often than in the neighborhood. In the HVN school (Figure 4b), both second- and fourth-grade children reported witnessing more violence at school than in the neighborhood, and in the neighborhood more than at home. In addition, fourth graders reported higher frequencies of being victimized at school than in the neighborhood or at home.

Comparisons between situations show that in both schools, children in both grades reported *witnessing* more violence in the neighborhood and at school than being victims of violence in these settings. In contrast, second graders in the LVN school and fourth graders in the HVN school reported more victimization at home than merely witnessing violence at home.

### *TV Violence*

Two scores were computed for the TV data: one for watching Mild Violence on TV, and one for watching Severe Violence on TV. *t*-tests were used to compare TV violence scores with violence scores in the other settings for Child as Witness of Mild Violence, while comparison of Severe Violence scores was made using Wilcoxon signed rank tests (due to the positively skewed distribution of child's severe violence score). The results showed that in both schools, children reported witnessing more mild violence on TV than either at home or in the neighborhood, but there were no differences between TV and school. Severe violence was witnessed on TV significantly more frequently than in any of the three real-life settings.

An additional analysis was conducted on TV scores alone, as reported by children and mothers, using a  $2 \times 2 \times 2 \times (2 \times 2)$  MANOVA on Mild and Severe TV violence scores, with School, Gender, and Grade as between-group variables and Informant (mother vs. child) and Violence Level (mild vs. severe) as repeated measures. Results showed that children's reports of exposure to violence (both mild and severe) on TV were higher for respondents from the HVN School compared to the LVN School,  $F(1, 124) = 15.04, p < .01$ ; fourth graders reported watching more violence on TV than second graders,  $F(1, 124) = 17.02, p < .01$ ; mothers reported that their children watched more violence on TV than the children themselves reported,  $F(1, 124) = 46.23, p < .01$ ; and watching mild violence was reported as more frequent than watching severe violence,  $F(1, 124) = 68.53, p < .01$ . Pearson correlations between the average number of hours per week that the child watched television (as reported by the mother) and TV violence scores were significantly positive,  $r(134) = .20, p < .05$ , for Mild Violence on TV, and  $r(134) = .345, p < .01$ , for Severe Violence on TV.

*Mother vs. Child Reports on the VEX-R.* We next compared the children's reports of exposure to mothers' reports, as recorded by the same instrument (the VEX-R), and children's reports of marital conflict at home (using the PRI) to children's reports of exposure to violence at home, using the VEX-R. A comparison of mother and child reports regarding Mild Violence was carried out using a  $2 \times 2 \times 2 \times (2 \times 3 \times 2)$  MANOVA with School, Grade, and Gender as between-group variables and Informant (Child vs. Mother), Setting, and Situation as repeated measure factors. In general, mother reports were very similar to child reports. The significant effects involving Informant were the interactions of Setting by Informant,  $F(2, 125) = 3.76, p < .05$ , and Grade by Situation by Informant,  $F(1, 126) = 10.64, p < .01$ . The first interaction was due to a difference between mother and child reports of mild violence in the neighborhood (with a mean difference of Mother vs. Child, mean = 0.19), while in the school and home settings the difference was insignificant (mean = 0.11, and mean = -0.05, respectively). The second interaction reflects the fact that for both age groups, mothers and children reported higher exposure for the witness than the victim situation. However, the difference between exposure scores for witness and victim is higher for fourth graders than for second graders, while among mothers the difference is the same for both grade groups (see Figure 5).

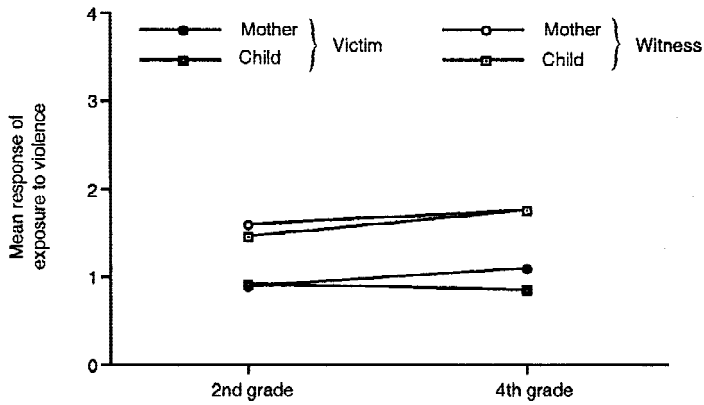


Figure 5. Mild violence means by grade and situation (children’s and mothers’ responses).

Pearson correlations between child and mother scores are presented in Table 6. Positive medium-sized correlations were found for the Mild Violence scores, except for Witness in the School Setting.

**Relationships between the VEX-R and PRI Scores**

Correlations between PRI and VEX scores revealed a negative relationship between scores indicating conflict on the PRI and children’s reports of exposure to mild violence as witnesses at home,  $r(134) = -.230, p < .05$ ; between PRI scores and children’s reports of exposure to mild violence as victims at home,  $r(134) = -.385, p < .01$ ; and between PRI scores and children’s reports of amounts of severe violence watched on TV,  $r(134) = .201, p < .05$ . Children who reported more marital conflict in their family reported more exposure to mild violence as both witnesses and victims at home, and reported witnessing more severe violence at home.

**Table 6. Pearson Correlations between Children and Mothers on VEX Scores**

	Mild Violence	Severe Violence
Home		
Witness	.318**	-.037
Victim	.239**	—
School		
Witness	.162	.187*
Victim	.390**	.299**
Neighborhood		
Witness	.465**	.165
Victim	.542**	.108
Total witness	.342**	.222**
Total victim	.468**	.370**
TV	.312**	.390**

\* $p < .05$ ; \*\* $p < .01$ .

### Relationship between VEX-R Scores and Child Behavior Problems

A final set of analyses was conducted to examine the relationship between child reports of exposure to violence and child behavior problems, as reported by the mother (on the CBCL) or by the child (on the Levonn). Pearson correlations were computed among VEX-R total scores, three CBCL total scores (Internalizing, Externalizing, and Total Behavior Problems), and the Levonn score (Table 7). As shown, there is a positive correlation between the Levonn scale scores and each of the "exposure to violence" variables. Significant positive correlations were also obtained between VEX-R and CBCL scores for scores reflecting children's reports of being victims of violence.

The separate correlations between CBCL Total Behavior Problems and Mild Violence VEX-R scores, with the child as a victim, in each of the three settings, all proved significant [School,  $r(134) = .382, p < .01$ ; Neighborhood,  $r(134) = .269, p < .01$ ; and Home,  $r(134) = .215, p < .05$ ]. Children reporting more exposure to violence as victims had mothers who reported more behavior problems in the child.

To control for the possible effect of family background on the above correlations, regressions were conducted for the three CBCL variables and the Levonn scale. The five background variables (Gender, Grade, School, Parental Education, and Household Density) were forced into the regression, followed by the remaining variables in a stepwise manner. We used the four total violence scores (mild and severe violence as a witness and as a victim) and mild and severe violence on TV as predictors. Exposure to mild violence as a victim entered first (after the background variables) for Internalizing, for Externalizing, for Total Behavior problems, and for the Levonn scale. For Internalizing, severe violence on TV was entered second, and for the Levonn scale, total severe violence as witness entered second and severe violence on TV entered third. Thus, after controlling for background variables, the most important predictor for child behavior problems and child stress is exposure to mild violence as a victim.

## DISCUSSION

The pattern of results suggests that children as young as those in the second grade are able to provide accurate information on their own exposure to violence. The validity

Table 7. Pearson Correlations between VEX Total Scores (Child-Report), Levonn, and CBCL Scores

	Levonn	CBCL		
		Total Problems	Internalizing	Externalizing
VEX totals				
Mild violence				
Witness	.450**	.169	.116	.194*
Victim	.462**	.397**	.319**	.350**
TV	.236**	-.021	.003	.028
Severe violence				
Witness	.430**	.145	.098	.182*
Victim	.428**	.215*	.214*	.222**
TV	.277**	-.047	.080	.038
Levonn	—	.367**	.288**	.362**

\* $p < .05$ ; \*\* $p < .01$ .



of their self-reports is concluded from their ability to differentiate between the prevalence and severity of violence across a wide range of settings and situations, as hypothesized. Specifically, children from high-violence schools reported more violence than children from low-violence schools; mild violence was reported as more frequent than severe violence; children reported witnessing violence more frequently than they reported themselves as having been victims of violence; and severe TV violence was reported as more frequent than violence encountered in everyday life. In addition, levels of exposure to violence were positively correlated with subjective distress, and also with mothers' reports of behavior problems; and children's reports of violence in the home were positively correlated with their perception of marital conflict, and unrelated to levels of violence encountered in other settings.

Mothers were also asked to guess how their children would respond to each of the VEX-R items. Similar means and positive correlations were found in most cases between mother and child reports across the various settings (school, home, neighborhood), supporting the notion that children are reliable reporters of events. The one exception was *witnessing* school violence, in which correlations were not significant, although mother and child reports were positively correlated in respect to the child being a *victim* of violence at school. Mothers assessed that their children witnessed less violence at school than reported by the children themselves. Mothers' estimates are, therefore, closer to their children's reports of exposure to mild violence at home, in the neighborhood and on TV—environments that are readily observable to them, as opposed to the school. Children, though, apparently do not report every case of violence unless they were directly affected. This pattern of correlations adds additional support to the validity of child reports.

Besides serving to validate young children's self-reports as a dependable source of information, the results of this study merit further discussion in their own right. First, violence was reported as more frequent at school than either in the neighborhood or the home. This joins previous findings on levels of violence in schools pertaining to older schoolchildren in Israel (Dgani & Dgani, 1990; Harel et al., 1997). In a study by Benbenishti, Zeira, and Astor (1998) on school children between grades 4 and 11, 76.2% reported having been verbally abused (cursed), and 57.2% reported having been pushed, at least once in the past month, while less than 10% saw another student with a knife, and less than 5% saw another student carrying a gun. In a study on second- and fourth-year school children, percentages for severe violence were slightly lower (Raviv, Raviv, Shimoni, Fox, & Leavitt, 1999). The results must alert us to the fact that children as young as those in the second and fourth grades are exposed to a great deal of violence—perhaps not life-threatening, but sufficiently detrimental to children's well-being to concern authorities. The educational system in Israel is investing increased efforts and resources to develop aid and counseling programs designed to curb violence in the schools (Rokach, 1995). A similar process is affecting other Western countries and receiving increased attention there (Baker, 1998; Olweus, 1993; Pellegrini, 1998).

Respondents reported very low exposure to violence at home. Because a methodical exploration of home violence has not been conducted in Israel, there are no accurate data available. However, approximate assessments of the rate of home violence by various government committees indicate that levels could be higher (The Ministry of Work and Welfare, 1998).

The scale's validity with regard to severe violence could not be fully established based on this study. This was because the young children in the study very rarely reported exposure to this type of severe violence. Nevertheless, we did prove some

validity of the severe violence score by showing that it was higher for the TV setting than for the "real-life" settings. Thus, we believe that the rare incidence reflects the reality, and not just the reluctance to report such violence.

While reporting few instances of exposure to severe violence either at home, in the school or in the neighborhood, respondents did report observing large amounts of severe violence on television. Amounts of TV violence observed were related to two variables: children from schools in the high violence neighborhood reported watching more severe TV violence than children from low violence schools, and older children (fourth graders) reported watching more violence on TV than younger children (second graders). A discussion of the relationship between exposure to violence on television and children's violent behavior is beyond the scope of this article, although it is a field attracting much interest in the literature (e.g., Huesmann & Miller, 1994; Lazar, 1994).

The effects of violence on children's mental health and well-being have been studied extensively. Much of the literature involves children's responses to disaster (e.g., Breton, Valla, & Lambert, 1993; Davidson & Baum, 1990; Shannon, Lonigan, Finch, & Taylor, 1994), or to specific acute events such as sniper attack (Pynoos et al., 1987; Schwarz & Kowalski, 1991), kidnapping (Terr, 1983), or accidents (Martini, Ryan, Nakayama, & Ramenofsky, 1990; Milgram, Toubiana, Klingman, Raviv, & Goldstein, 1988); and much of it relies on parent or teacher reports of children's exposure, and on child outcome (see Shahinfar & Fox, 1998; Shahinfar et al., 2000). Recently, researchers have expressed concern about the level of chronic violence in innercity United States communities, although little attention has been paid specifically to the potential impact on young children living in environments of chronic violence (Osofsky, 1995).

Several studies have examined child behavior problems related to exposure to violence (e.g., Freeman, Mokros, & Poznanski, 1993; Martinez & Richters, 1993; Pynoos & Nader, 1990; Sternberg et al., 1993). Pynoos and Nader (1990), for example, found that school aged children exposed to violence often experience anxiety and sleep disturbances. Martinez and Richters (1993) found that the parents of children reporting many distress symptoms reported more behavior problems in their children. A number of recent studies describe the effects of marital conflict on children's behavior problems. For example, Cummings and his colleagues (Cummings, 1994; Cummings, Davies, & Simpson, 1994) found that children who reported more parental marital conflict were more likely to show externalizing problems than those reporting more tranquil home environments. Thus, there is reason for concern regarding outcomes for children who are exposed to chronic home, school, or neighborhood violence.

Much of the violence described in the studies above is associated with what we have called "severe" violence. Exposure to chronic community violence is usually associated with exposure to guns, knives, drugs, and random violence (Osofsky, 1995; Shapiro, Dorman, Wleker, & Clough, 1998); less is known about the role of more mild forms of violence in affecting child adjustment. The data from the current study speak to this issue. Most of the respondents did not report exposure to severe forms of violence, but children reporting exposure to even mild forms of violence, particularly as victims, were both more likely to rate themselves as having distress symptoms and to be given higher behavior problem ratings by their mothers. Children reporting high levels of exposure as witnesses were more likely to present externalizing problems, while children reporting high levels of exposure as a victim were more likely to

present both internalizing and externalizing problems. The correlative nature of these data prevent us from concluding that exposure to chronic, mild violence negatively affects child behavior. However, this possibility could be investigated in the future using studies of school intervention programs, in which a decrease in children's symptoms following lower levels of violence as a result of such programs would suggest a causal relationship between violence and child symptomatology.

The results of this study may have implications for research and practice in other countries, particularly the United States. Some potentially important issues relate to our findings and those of other Israeli studies. Mild as opposed to severe violence is the more prevalent form in all settings, and middle-class schools have high rates of moderate violence (Benbenishti et al., 1998; Harel et al., 1997; Raviv et al., 1999). Yet much recent work in the United States (e.g., Freeman et al., 1993; Garbarino et al., 1992; Gorman-Smith & Tolan, 1998) has reported mainly on severe violence in lower class, often innercity and minority environments. The present study suggests that we pay attention to mild violence, including that which occurs in middle-class settings.

There are at least two reasons for paying attention to mild violence in middle-class settings. First, there are indications that participation in moderate levels of violence in elementary school may lead, through various pathways, to delinquency in adolescence (Loeber, Keen, & Zhang, 1997; Nagin & Tremblay, 1999). Second, research in the United States shows that mild domestic violence is more prevalent than severe violence (Straus, Hamby, Boney-Coy, & Sugarman, 1996), similar to our findings for violence in home, school, and community. Further, exposure to any form of domestic violence, including mild violence may be related to behavior problems (Kolbo, 1996) and posttraumatic stress disorder (Kilpatrick & Williams, 1998).

Taken together with the findings in the present study, the studies in the United States suggest that we place close attention in the future to the causes and consequences of mild, as well as severe, violence. Mild and severe violence are terms that have been developed by adults, but children may find constant exposure to mild violence (yelling, pushing, hitting) traumatic. We suggest that it is important to investigate such processes in different societies and cultures. Each country in which such studies are performed could investigate these variables relating to types and settings of violence in different cultural settings, including advantaged and disadvantaged groups, characteristic of each country. Such research would be of help in adapting intervention programs and policies to the needs of each culture.

Several factors limit the possibility of generalizing the results of this study, and should be addressed in future research. First, there was a high refusal rate among parents in both schools (52%). This difficulty is a typical problem in the study of home violence, particularly when the parents are informed in advance that counseling authorities will be notified in the event that home violence is discovered. Although the demographic characteristics of the complying and noncomplying parents were similar, families refusing to participate may have differed in some aspect related to their child's exposure to violence. Residents of neighborhoods selected with respect to crime-rate statistics usually vary in their socio-economic status—a confound faced by most social studies examining the effects of living in a high-risk neighborhood. Often, as in the present study, areas of high reported crime rates are also inhabited by low SES families. However, even after analyzing the comparison between the schools while controlling for SES variables (parents' education and residence density), the same differences remained. The data in this study suggest that exposure, while greater among children in the high violence neighborhood, is also high (particularly in

school) for children in the low-violence neighborhood. Future work in which a broader range of environments is sampled will be necessary to disentangle these critical factors. Also, future studies should focus on mild violence which, although less dramatic, may have a detrimental impact on children's well-being. A third limitation concerns the interpretation of age effects. We found that fourth graders reported a higher frequency of exposure compared to second graders (particularly in school and in the neighborhood). It is possible that their reporting is a function of accumulated experience rather than their current experience in the different contexts. Although this explanation is plausible, it does not detract from our findings. Rather, it may be important, in future work on exposure to violence among older children, to word questions around specific time intervals (e.g., within the last 6 months). Finally, it is noted that this study, being an individual and not a group study (interviewing mothers and children), was based on a relatively small sample and compared between only two schools. Further research is required on a larger population.

The present study has shown that exposure to violence can be assessed quite accurately by elementary school age children. It has provided support for the validity of a violence self-report scale for children, particularly for mild violence, because severe violence was very rarely reported. It has been of use in showing effects of age of child on exposure to violence; of the relation between exposure to violence and distress symptoms in children; and the relation between marital conflict of parents and children's exposure to violence. These results open the possibility for further research on correlates of exposure to violence with other age groups and cultures, and for use of the scale in assessing intervention programs for violence reduction.

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