

Violent Childhood Experiences and the Risk of Intimate Partner Violence in Adults

Assessment in a Large Health Maintenance Organization

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Information about the relationship of experiencing abuse or witnessing domestic violence in childhood to the risk of intimate partner violence (IPV) in adulthood is scant. The relationship of childhood physical or sexual abuse or growing up with a battered mother to the risk of being a victim of IPV for women or a perpetrator for men was studied among 8,629 participants in the Adverse Childhood Experiences Study conducted in a large HMO. Each of the three violent childhood experiences increased the risk of victimization or perpetration of IPV approximately two-fold. A statistically significant graded relationship was found between the number of violent childhood experiences and the risk of IPV. Among persons who had all three forms of violent childhood experiences, the risk of victimization and perpetration was increased 3.5-fold for women and 3.8-fold for men. These data suggest that as part of risk assessment for IPV in adults, screening for a history of childhood abuse or exposure to domestic violence is needed.

Keywords: domestic violence; family violence; childhood trauma; child abuse; screen; protection

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The question of whether treating children violently is likely to induce them to treat others violently later in life is of great social and public health importance. Because of the relative scarcity of data that can be used to address this question, we present the information we have gathered on this point from the Adverse Childhood Experiences (ACE) Study. To date, most studies have addressed the implications for behavior in childhood or adolescence. We provide information on the relationship between childhood exposure to forms of abuse and household dysfunction with the risk of intimate partner violence (IPV) decades later in adult life.

In an attempt to sort out whether violence breeds intergenerational violence, Widom (1989) analyzed 18 reports on the topic published from 1970 to 1986 and reasoned that there were not enough data to draw any firm conclusions. More recent studies provide evidence that maltreated children are at risk for subsequent psychological, behavioral, and physical problems; this includes aggression, violence, substance abuse, depression, posttraumatic stress disorder, anxiety disorder, differences in sexual behavior and reproductive behaviors, as well as other behavioral and medical problems (Anda et al., 1999; Briere, 1996; Briere & Elliott, 1994; Dietz et al., 1999; Dube et al., 2001; Felitti et al., 1998; Fergusson & Horwood, 1998; Hillis, Anda, Felitti, Nordenberg, & Marchbanks, 2000; Hillis, Anda, Felitti, & Marchbanks, 2001). With regard to whether violence breeds intergenerational violence, verbal and physical assault and/or being a victim of others' aggressive and violent behavior are additional problems associated with child maltreatment to consider (Kolko, 1996; Shields & Cicchetti, 1998, 2001). One recent study shows that women who were physically or sexually abused during childhood had a substantially increased risk of being victims of domestic violence as adults (Cold et al., 2001).

The overall objective of the ACE study is to assess the impact of multiple, interrelated, adverse childhood experiences on a wide variety of health behaviors and outcomes on health care utilization in adulthood (Felitti et al., 1998). Prior reports from the ACE study have shown strong graded relationships between forms of abuse and household dysfunction and numerous health and social outcomes (Anda et al., 1999; Dietz et al., 2000; Dube et al., 2001; Felitti et al., 1998; Hillis et al., 2001; Hillis et al., 2000). To assess the relationship of childhood physical or sexual abuse or witnessing maternal battering to the risk of involvement in IPV as an adult, we used data from adults in an HMO's Health Appraisal Center who participated in the ACE study. Although women and men can be either victims or perpetrators of IPV, and are each reported to initiate the violence with equal frequency (Archer, 2000; Archer & Ray, 1989; Fergusson & Horwood, 1998; Henton, Cate,

Koval, Lloyd, & Christopher, 1993; Magdol, Moffitt, Caspi, Newman, Fagan, & Silva, 1997; Stets & Strauss, 1990), reports have shown that women are more likely than men to suffer injuries as a victim, whereas men are more likely to be perpetrators of these injurious acts (Archer, 2000; Fergusson & Horwood, 1998). In this report, we examine the relationship between the three types of violent childhood exposures described above and the subsequent risk of IPV victimization among women and IPV perpetration by men in adulthood.

METHOD

Study Population and Sample

The ACE study is a collaboration between Kaiser Permanente's Health Appraisal Center in San Diego, California, and the Centers for Disease Control and Prevention (CDC). The ACE study was approved by the Institutional Review Boards of the Southern California Permanente Medical Group (Kaiser Permanente) and the Office of Protection from Research Risks, National Institutes of Health.

The study population was drawn from the Health Appraisal Center (HAC), which was created to provide complete and standardized biomedical, psychosocial, and preventive (biopsychosocial) health evaluations to adult members of the Kaiser Health Plan in San Diego County. In any 4-year period, 81% of the adult membership will obtain this comprehensive health assessment, and more than 50,000 members are evaluated each year. Every person evaluated at the HAC completes a standardized questionnaire, which includes detailed health histories, as well as information on health-related behaviors, a medical review of systems, and psychosocial evaluations. All of this standardized information was abstracted for each person and is included in the ACE study database.

The baseline data collection was divided into two survey waves that used the methodology described by Felitti et al. (1998). Two weeks after the completion of their HAC evaluation, individuals who attended the clinic during the survey time periods were mailed an ACE study questionnaire. The ACE questionnaire elicited detailed information about adverse childhood experiences (e.g., three categories of abuse and four categories of household dysfunction) as well as additional information about health-related behaviors from adolescence to adulthood.

Prior publications from the ACE study included participants in the Wave I survey (9,508/13,494; 70% response) that was conducted between August and November of 1995 and between January and March of 1996 (Anda et al., 1999; Dietz et al., 1999; Edwards et al., 2001; Felitti et al., 1998). The Wave II survey was conducted between June and October of 1997; 8,667 of 13,330 persons (65%) responded. The Wave II ACE study questionnaire contained some additional questions to obtain more detailed information about health topics that analysis of Wave I data had shown to be important (Dietz et al., 1999; Felitti et al., 1998).

Data from Wave II only were analyzed because, unlike the Wave I survey, Wave II included questions about the risk of being a perpetrator or victim of IPV as an adult. We excluded three participants from the Wave II survey who lacked information about race and 35 who lacked information about educational attainment. The final study cohort included 99% of the participants to the Wave II survey (8,629/8,667). The study population included 4,674 (54%) women and 3,955 (46%) men. The mean age (\pm standard deviation) was 55 (\pm 15.5) years for women and 57 (\pm 14.5) years for men. Seventy-three percent of women and 75% of men were White, 32% of women and 42% of men were college graduates, and another 42% of women and 39% of men had some college education. Only 8% of women and 7% of men had not graduated from high school.

Assessment of Representativeness, and Response or Reporting Bias

In Wave I, the HAC questionnaire data were abstracted for both participants and nonparticipants to the ACE study questionnaire to evaluate the representativeness of the study population in terms of demographic characteristics and health-related issues. Results of this analysis published elsewhere (Edwards et al., 2001) showed there was no evidence of any difference in the health behaviors or health status of participants and nonparticipants.

The HAC questionnaire also included items about childhood sexual abuse. Assessment of the strength of the relationship between childhood sexual abuse and numerous health behaviors, diseases, and psychosocial problems showed virtually identical results for participants and nonparticipants. There was no evidence that participants were more likely than nonparticipants to attribute health or social problems to adverse childhood experiences (Edwards et al., 2001). Because the study site and methods for Waves I and II did not differ, it is reasonable to assume that the results of Wave I would apply to Wave II.

Defining Childhood Exposure to Violence

All questions about ACEs pertained to the participants' first 18 years of life. For questions adapted from the Conflict Tactics Scale (CTS) (Straus & Gelles, 1990), the response categories were *never*, *once or twice*, *sometimes*, *often*, and *very often*.

Physical abuse. Two questions from the CTS (Straus, 1979) were used to describe childhood physical abuse: "Sometimes parents or other adults hurt children. While you were growing up, that is, in your first 18 years of life, how often did a parent, stepparent, or adult living in your home (1) push, grab, slap, or throw something at you? or (2) hit you so hard that you had marks or were injured?" A participant was defined as being physically abused if either the response was *often* or *very often* to the first question or *sometimes*, *often*, or *very often* to the second.

Sexual abuse. Four questions from Wyatt (1985) were adapted to define contact sexual abuse during childhood: "Some people, while they are growing up in their first 18 years of life, had a sexual experience with an adult or someone at least 5 years older than themselves. These experiences may have involved a relative, family friend, or stranger. During the first 18 years of life, did an adult, relative, family friend, or stranger ever (1) touch or fondle your body in a sexual way, (2) have you touch their body in a sexual way, (3) attempt to have any type of sexual intercourse with you (oral, anal, or vaginal), or (4) actually have any type of sexual intercourse with you (oral, anal, or vaginal)?" A yes response to any one of the four questions classified a participant as having experienced contact sexual abuse during childhood. Persons who responded yes to any question were asked to provide the age at which this type of abuse first occurred.

Witnessing domestic violence (battered mother). We used four questions from the CTS to define childhood exposure to a battered mother. The questions were preceded by the following statement: "Sometimes physical blows occur between parents. While you were growing up in your first 18 years of life, how often did your father (or stepfather) or mother's boyfriend do any of these things to your mother (or stepmother): (1) push, grab, slap, or throw something at her, (2) kick, bite, hit her with a fist, or hit her with something hard, (3) repeatedly hit her for at least a few minutes, or (4) threaten her with a knife or gun, or use a knife or gun to hurt her?" A response of *sometimes*, *often*, or *very often* to at least one of the first two questions or any response

other than *never* to at least one of the third and fourth questions defined a participant as having had a battered mother.

Questions About the Risk of Intimate Partner Violence as an Adult

We used single questions adapted from the CTS (Strauss, 1979) to assess the risk of perpetrating or being the victim of IPV. The survey questions read as follows: (a) "Has your partner ever threatened, pushed, or shoved you?" and (b) "Have you ever threatened, pushed, or shoved your partner?" These questions were intended to be brief screening questions for use in the context of a complete general medical and psychosocial well-being evaluation in a clinical setting with "yes/no" responses. For women, a yes response to the first question was defined as their being at risk for IPV victimization; for men, a yes response to the second question was defined as their being at risk for perpetrating IPV.

Because of the sensitive nature of these questions and their use in a clinic setting, in this article we use the responses to assess the potential risk of perpetration or victimization. Thus, our analysis is not intended to examine detailed histories of specific types or severity of IPV. We also did not determine the sexual orientation of the participant, which does not allow us to specifically examine same-sex IPV, although this is likely the minority of instances of IPV. Thus, this analysis is based solely on examining the risk for IPV as an adult given childhood exposure to violence.

Even with the relatively nonthreatening and general nature of these questions, we anticipated more underreporting in this clinic setting than in studies specifically designed to assess IPV in detail. Examples of such studies include surveys that offer the protection of anonymity or the confidentiality of the responses and case-control studies in which disclosure of the occurrence and details of intimate partner violence among identified cases is less problematic. If anything, such possible underreporting would strengthen our findings. Thus, the two questions we used can be easily included as part of a broad-based clinical evaluation to assess the risk of IPV.

Statistical Analysis

Adjusted odds ratios (OR) and 95% confidence intervals (CI) were obtained from multivariate logistic regression models that assessed the associations between the individual questions used to define physical abuse and witnessing maternal battery. Because these questions have Likert-type scale

responses, we were specifically trying to determine whether the frequency of the exposures had a graded relationship to the risk of IPV. For childhood sexual abuse, we assessed whether the combination of earlier age and type (intercourse versus nonintercourse) of sexual abuse had affected the strength of the relationship of these exposures to the risk of IPV. Our a priori hypothesis was that earlier age at occurrence of sexual abuse and abuse that involved intercourse would have stronger associations with IPV during adulthood. We then assessed the relationship of childhood physical or sexual abuse or witnessing maternal battery, as well as the total number of these childhood exposures (0 to 3), to the risk of perpetrating or being a victim of IPV as an adult. Covariates in all models were selected on an a priori basis and included into our models. These covariates included age, sex, race (other versus White), and education (high school diploma, some college, or college graduate versus less than high school). We found no evidence of collinearity between the covariates included in our models.

Persons with incomplete information about an ACE were considered not to have had that experience. This exclusion would likely result in conservative estimates of the relationships between ACEs and the risk of IPV because persons who had potentially been exposed to an experience would thereby be misclassified as unexposed. This type of misclassification would potentially bias our results toward the null (Rothman, 1986) and hence strengthen our findings. However, to assess this potential effect, we repeated our analyses after excluding any participant with missing information on any one of the ACEs and found no differences in the final results.

RESULTS

Prevalence of Abusive or Dysfunctional Experiences in Childhood

Physical abuse. Men were somewhat more likely than women to meet our definition of having experienced physical abuse as children (28% versus 25%) (see Table 1). Among both men and women, a similar percentage reached the threshold for the individual questionnaire items used to define physical abuse.

Sexual abuse. Women were more likely than men to have met our case definition of childhood sexual abuse (24.3% versus 17.1%) (Table 1). Among the responses to the four questionnaire items used to define childhood sexual

TABLE 1: Prevalence of Exposure to Childhood Physical or Sexual Abuse or to a Battered Mother by Questionnaire Item and Final Definition of Violent Experience^a

Violent Childhood Experience	Women (N = 4674)		Men (N = 3955)	
	Item	Category	Item	Category
Physical abuse (2 questions)		25.1		27.9
Sometimes, often, or very often pushed, grabbed, slapped, shoved, or had things thrown at him/her	18.1		19.8	
Ever hit so hard he/she had marks or was injured	19.5		21.4	
Sexual abuse (4 questions)		24.3		17.1
Touched or fondled in a sexual way	22.2		14.5	
Had her/him touch the perpetrator in a sexual way	8.0		7.8	
Attempted intercourse (oral, anal, or vaginal)	8.1		7.2	
Actually had intercourse (oral, anal, or vaginal)	5.3		6.7	
Battered mother (4 questions)		13.9		12.1
Mother was sometimes, often, or very often pushed, grabbed, slapped, shoved, or had things thrown at her	12.4		11.1	
Mother was sometimes, often, or very often kicked, bit, hit with a fist, or bit with something hard	7.0		5.3	
Mother was ever repeatedly hit over at least a few minutes	7.1		5.1	
Mother was ever threatened with a knife or gun or hurt with a knife or gun	3.6		2.0	
Number of violent experiences ^b				
None		56.8		58.0
1		26.8		29.2
2		12.7		10.5
All 3		3.7		2.3

NOTE: All numbers are percentages.

a. The final definitions of physical abuse, sexual abuse, and exposure to a battered mother were based on the responses to two or more questions; thus, the item percentages refer to the responses to the individual questions and the category percentages to the final definitions of abuse or battered mother.

b. The number of violent experiences is simply the sum of the number of experiences for each participant.

abuse, both women and men were substantially more likely to report having been touched or fondled and least likely to report completed intercourse (Table 1).

Exposure to a battered mother. Women were slightly more likely to meet the case definition for this childhood exposure (Table 1). For the four questionnaire items, the percentage meeting the item cutoff was highest for the first item (i.e., lowest level of violence) and lowest for the fourth item (i.e., the most extreme form of violence) (Table 1).

Prevalence of the Risk of Being a Victim or Perpetrator of IPV

Overall, 5% of the women met our definition of being at risk for IPV victimization; 4.3% of men were at risk for perpetrating IPV.

Items About Physical Abuse and Risk of IPV

For both of the questions used to define childhood physical abuse, the risk of being a victim of IPV among women increased with the frequency of abuse ($p < .001$; see Table 2). Similarly, the risk of perpetrating IPV by men increased according to the acknowledgment of having experienced physical abuse of the types contained in the two questions ($p < .001$); however, the graded relationship with frequency of abuse was not as evident for men as for women (Table 2).

Sexual Abuse

Women with a history of contact sexual abuse had an increased risk of IPV victimization ($p < .001$). The type of sexual abuse or age at which it occurred did not affect this risk. For men, contact sexual abuse was also associated with an increased risk of perpetrating IPV ($p < .001$) and appeared to be highest if the abuse involved intercourse by age 12; in this group, the risk of perpetration was increased more than 3-fold (see Table 3).

Witnessing Domestic Violence (Battered Mother)

Among women, the risk of IPV victimization was increased if they had witnessed either of the two forms of maternal battery ($p < .001$). In addition, this risk was increased by the frequency of the battery ($p < .001$; see Table 4). Men whose mothers had been battered had a higher risk of perpetrating IPV

TABLE 2: Frequency of Physical Abuse as a Child and the Prevalence and Risk (Adjusted Odds Ratio^a) of Being a Victim or Perpetrator of Intimate Partner Violence as an Adult

CTS Question	Women Victimization			Male Perpetration		
	N	%	Adjusted Odds Ratio	N	%	Adjusted Odds Ratio
Pushed, grabbed, slapped, or something thrown at you						
Never	2,974	3.4	1.0 (referent)	2,261	3.1	1.0 (referent)
Once, twice	854	6.2	1.8 (1.3 - 2.6)	909	4.8	1.5 (1.1 - 2.2)
Sometimes	617	8.4	2.5 (1.8 - 3.6)	624	7.1	2.3 (1.6 - 3.5)
Often	229	11.8	3.6 (2.3 - 5.7)	161	6.8	2.2 (1.2 - 4.3)
Hit you so hard that you had marks or were injured						
Never	3,763	3.9	1.0 (referent)	3,108	3.4	1.0 (referent)
Once, twice	465	9.0	2.4 (1.7 - 3.4)	472	7.8	2.3 (1.6 - 3.4)
Sometimes	306	9.5	2.5 (1.6 - 3.7)	268	7.8	2.3 (1.4 - 3.8)
Often	140	11.4	3.0 (1.7 - 5.2)	107	5.6	1.6 (0.7 - 3.8)
Total	4,674	5.0		3,955	4.3	

NOTE: CTS = Conflict Tactics Scale. The experiences of childhood physical abuse are based on two items from the CTS. Because of small sample sizes for the "very often" response, responses of "often" or "very often" were combined as a single group "often."

a. Odds ratios are adjusted for age at time of survey, race, and educational attainment.

TABLE 3: Type of Sexual Abuse and Age at Occurrence and the Risk of IPV Victimization Among Women and Perpetration by Men

Type of Sexual Abuse by Age ^a	Women Victimization			Male Perpetration		
	N ^b	%	Adjusted Odds Ratio	N ^b	%	Adjusted Odds Ratio
No sexual abuse	3,537	4.2	1.0 (referent)	3,280	3.8	1.0 (referent)
No intercourse, > 12 years	179	7.8	2.0 (1.1 - 3.6)	129	5.4	1.5 (0.7 - 3.3)
No intercourse, ≤ 12 years	693	6.6	1.6 (1.1 - 2.2)	186	5.9	1.6 (0.9 - 3.0)
Intercourse, > 12 years	118	9.3	2.1 (1.1 - 4.1)	145	6.9	1.8 (0.9 - 3.5)
Intercourse, ≤ 12 years	112	7.1	1.6 (0.8 - 3.4)	111	11.7	3.3 (1.8 - 6.0)
Total	4,639	4.9	—	3,851	4.3	—

NOTE: IPV = intimate partner violence.

a. 35 women and 104 men excluded for missing information about age for the particular type of sexual abuse reported.

b. 43 women and 111 men excluded for missing information about age of sexual abuse.

($p < .001$; Table 4); however, this risk did not appear to increase with the frequency of the maternal battery.

Independent and Combined Effects of Childhood Physical or Sexual Abuse or Witnessing Domestic Violence

Using the definitions of childhood physical and sexual abuse and witnessing domestic violence, we estimated the prevalence of IPV victimization and perpetration (see Table 5). Childhood physical abuse increased the risk of victimization among women and the risk of perpetration by men more than 2-fold; childhood sexual abuse increased these risks 1.8-fold for both men and women; and witnessing domestic violence increased these risks approximately 2-fold for women and men (Table 5).

We found a positive graded relationship between the number of violent experiences and the risks of victimization among women and perpetration by men ($p < .001$ for both sexes; see Table 5). Compared to persons with no violent experiences, the risks for victimization among women and perpetration by men were increased 3.5-fold and 3.8-fold, respectively (Table 5). For the two outcomes, victimization among women and perpetration by men, the two ordinal odds ratios for the number of violent childhood exposures are, respectively, 1.6 (95% CI: 1.4-1.9) and 1.7 (95% CI: 1.4-2.0). These results suggest that as the number of violent experiences increases, the risks of victimization among women and perpetration by men also increase by about 60% to 70%. Thus, we found strong statistical evidence of trends reported in Table 5.

TABLE 4: Frequency of Maternal Battery as a Child and the Prevalence and Risk (Adjusted Odds Ratio) of Being a Victim or Perpetrator of IPV as an Adult^a

CTS Question	Women Victimization			Male Perpetration		
	N	%	Adjusted Odds Ratio	N	%	Adjusted Odds Ratio
Mother was pushed, grabbed, slapped, or had something thrown at her						
Never	3,611	4.0	1.0 (referent)	3,084	3.3	1.0 (referent)
Once, twice	485	6.6	1.6 (1.1 - 2.3)	435	7.8	2.4 (1.6 - 3.6)
Sometimes	382	9.4	2.3 (1.6 - 3.3)	324	7.7	2.3 (1.5 - 3.7)
Often	196	9.2	2.2 (1.3 - 3.7)	112	8.0	2.4 (1.2 - 5.0)
Mother was kicked, bit, hit with a fist, or hit with something hard						
Never	4,162	4.4	1.0 (referent)	3,552	3.8	1.0 (referent)
Once, twice	185	8.1	1.7 (1.0 - 3.0)	192	9.4	2.4 (1.4 - 4.0)
Sometimes	222	10.8	2.4 (1.5 - 3.8)	153	7.1	1.8 (1.0 - 3.5)
Often	105	9.5	2.0 (1.1 - 4.0)	56	8.9	2.2 (0.9 - 5.7)
Total	4,674	5.0	—	3,955	4.3	—

NOTE: IPV = intimate partner violence. CTS = Conflict Tactics Scale.

a. The experiences of childhood physical abuse are based on two items from the CTS. Because of small sample sizes for the "very often" response, responses of "often" or "very often" were combined as the group "often."

TABLES: Prevalence and Risk (Adjusted Odds Ratio) of Being a Victim (Women) or Perpetrator (Men) of IPV as an Adult by Types and Number of Abusive or Violent Exposures^a

Violent Childhood Experience	Women Victimization			Male Perpetration		
	N	%	Adjusted Odds Ratio	N	%	Adjusted Odds Ratio
Physical abuse						
No	3,503	3.7	1.0 (referent)	2,851	3.2	1.0 (referent)
Yes	1,171	8.9	2.4 (1.9 - 3.2)	1,104	7.0	2.2 (1.6 - 3.0)
Sexual abuse						
No	3,537	4.2	1.0 (referent)	3,280	3.8	1.0 (referent)
Yes	1,137	7.4	1.8 (1.4 - 2.4)	675	6.7	1.8 (1.3 - 2.6)
Battered mother						
No	4,026	4.3	1.0 (referent)	3,478	3.7	1.0 (referent)
Yes	648	9.0	2.0 (1.5 - 2.7)	477	8.2	2.2 (1.5 - 3.1)
Number of violent experiences^b						
None	2,657	2.9	1.0 (referent)	2,294	3.0	1.0 (referent)
1	1,251	6.4	2.3 (1.6 - 3.1)	1,156	5.2	1.9 (1.3 - 2.7)
2	593	9.4	3.3 (2.3 - 4.7)	415	8.9	3.3 (2.2 - 5.0)
All 3	173	10.4	3.5 (2.0 - 6.0)	90	10.0	3.8 (1.8 - 8.1)
Total	4,674	5.0	—	3,955	4.3	—

NOTE: IPV = intimate partner violence.

a. The experiences of childhood physical abuse or having a battered mother are mutually exclusive.

b. The trend for increasing risk of victimization and perpetration with increasing number of violent experiences was statistically significant ($p < .001$).

DISCUSSION

Our findings from surveys and medical histories of patients in the clinical setting of a large HMO confirmed prior reports (e.g., Merrill, Thomsen, Gold, & Milner, 2001) that people exposed to family aggression and violence have a substantially higher risk of becoming a victim (women) or perpetrator (men) of IPV as adults. Among women, we found a strong graded relationship between the number of adverse childhood experiences and the risk of being a victim of IPV. Similarly, among men, we found a strong graded relationship between the number of these types of experiences and the risk of subsequently perpetrating IPV.

Several other studies have found similar results, including those that showed a significant increase in aggressive and violent behavior among those children and adults who experienced child maltreatment (Bagley & Mallick, 2000; Calam, Horne, Glasgow, & Cox, 1998; Frothingham et al., 2000; Hemenkohl & Russo, 2000; Lewis, Moy, & Jackson, 1985; Paradise, Rose,

Sleeper, & Nathanson, 1994; Pollock, Briere, Schneider, Knop, Mednick, & Goodwin, 1990; Sendi & Blomgren, 1975; Shields & Cicchetti, 1994; Silverman, Reinherz, & Giaconia, 1996). For example, Shields and Cicchetti (1998) examined the effects of childhood trauma on 141 abused, inner-city children compared with 87 controls and found that the abused children exhibited increased levels of violent, aggressive behavior, especially among those who were physically abused. Other effects of the trauma included increased emotional lability, dissociation, and attention deficits. When Shields and Cicchetti expanded the number of abused children studied to 169 and compared them with 98 controls, they found similar results (2001). Here they focused on chronic and systematic efforts to exploit, intimidate, and victimize others (i.e., bullying). They also found that emotional lability marked both bullies and victims. They showed that maltreated children (especially physically abused ones) are at risk for both types of aggression, which suggests that early trauma places children at risk for a wide array of interpersonally violent acts.

In a study of 4,790 middle- and high-school students, Bensley, Speiker, van Eenwyck, and Schoder (1999a, 1999b) found higher levels of antisocial behavior, as well as more substance abuse and suicidal behavior, among those who self-reported being abused compared to those who had not reported being abused. Widom and colleagues (Luntz & Widom, 1994; Widom, 1999; Widom & Morris, 1997; Widom & Shepard, 1996) prospectively studied 1,575 abused children and published their findings in several reports. They found that abused children had more aggression, violence, and antisocial behavior, as well as increased risk of depression, suicide, anxiety, substance abuse, and post-traumatic stress disorder than did controls. Other researchers have found similar relationships between children who have been abused, especially physically, and violent and aggressive behavior as adults (Kolko, 1996).

Several other studies have also shown a significant association between prior childhood trauma and later victimization, also called revictimization (Armstrong, Stronck, & Carlson, 1999; Beitchman et al., 1992; Briere & Runtz, 1990; Bryer, Nelson, Miller, & Kroll, 1987; Clark & Foy, 2000; Coons & Millstein, 1986; Jacobson, 1989; McCauley et al., 1997; Moeller, Bachman, & Moeller, 1993; Muenzenmaier, Meyer, Struening, & Ferber, 1993; Sanders & Moore, 1999; Schetky, 1988; Walker, Gelfand, Gelfand, Koss, & Katon, 1995). Although the cycle of violence theory was somewhat controversial in the late 1980s (e.g., Widom, 1989), the above large number of studies by independent authors that evaluated large numbers of participants from diverse populations, using different study methods, provides strong support for its reality. Revictimization/retraumatization is usually experienced and

learned inside the family and is nearly always associated with a low self-esteem and often with dissociation during the revictimization, both of which commonly come from the prior repeated trauma (Sanders & Giolas, 1991; Sanders & Moore, 1999; Whitfield, 2003). Toward the end of her recovery work, one of our patients said, "If I believe that I am bad and unworthy, then I will more easily let others mistreat me." Whether the assaults are continued in childhood, adolescence, or later in adulthood, the fact that they are repeated is what drives and continues the toxic and pathologic process of trauma and its hurtful and damaging effects on the victim's body, mind, and spirit (Whitfield, 2003).

Although research on the transgenerational transmission of family aggression and violence began 40 years ago, our understanding of this connection remains incomplete (MacEwen, 1994). Researchers have found multiple factors to be operative when they have tried to assess how violence begets violence. These factors may include the type of abuse and whether it was experienced, witnessed, or both; its severity and frequency; the victim's identification with the abuser and/or other victims; enabling behavior (coabuse) by others; gender identification; the overall impact of the trauma(s); self-esteem (shame) of the victim; memory of the trauma; survival defenses; and recovery process (Archer, 2000; MacEwen, 1994; Whitfield, 1995). The abused person's current adult relationships add other factors: the trauma history of the partner, the partner's current behavior, the interpersonal dynamics and boundaries of the current relationship (Whitfield, 1993), and the abused person's attachment history in infancy and later (Lyons-Ruth & Jacobvitz, 1999).

Taking gender differences into consideration, Archer (2000) did a metaanalysis of 82 separate reports of aggression among heterosexual partners, nearly all of which studies had been peer reviewed. He found that the data showed that although women use physical aggression on men about as often as do men on women, injuries were reported more frequently by women than by men, 62% versus 38%, respectively (Archer, 2000).

Potential weakness of studies with retrospective reporting of childhood experiences is that participants may have difficulty recalling certain events (Brown, Scheflin, & Whitfield, 1999). For example, longitudinal follow-up of adults whose childhood abuse was documented has shown that their retrospective reports of childhood abuse are likely to underestimate actual occurrence (Femina, Yeager, & Lewis, 1990; Williams, 1995). Difficulty recalling childhood events likely results in misclassification (classifying persons truly exposed to ACEs as unexposed) that would bias our results toward the null

(Whitfield, Silberg, & Fink, 2001; Brown et al., 1999). Thus, this potential weakness probably resulted in underestimates of the true relationships between ACEs and the risk for IPV victimization or perpetration (Rothman, 1986).

Another possible limitation of our study involves our including the term *threatened* with "pushed or shoved" in the survey question. People may use different kinds of threats in relationships, and not all of them refer to physical violence. Even so, some, such as threatening abandonment, may be as stressful and traumatic as threatening physical harm. A final potential weakness includes the brevity of the items used to screen for the complex clinical and social problems of interpersonal aggression and violence. However, the study by Cold et al. (2001) reported similar findings in a community setting. The fact that their study used a different set of questions on a community sample as opposed to a clinical one helps to support our findings. Thus, these simple screening questions can be useful and effective in a health care setting for caregivers dealing with this common clinical and societal concern of the long-term consequences of childhood abuse.

Data on the levels of exposure from the ACE study are nearly identical to other population-based studies. For example, in our study we found that 17% of the men and 24% of the women met the case definition for contact sexual abuse; a national telephone survey of adults in 1990 conducted by Finkelhor, Hotaling, Lewis, and Smith, using similar criteria for sexual abuse, estimated that 16% of men and 27% of women had been sexually abused. Twenty-eight percent of the men from our study had been physically abused as boys, which closely parallels the percentage (31%) found in a recent population-based study of Ontario men that used questions from the same scales (MacMillan et al., 1997). The similar estimates of the prevalence of these childhood exposures between the ACE study and other population-based studies suggest that our findings are likely to be applicable in other settings.

Our findings, that children exposed to violence are at an increased risk of IPV later in life and that the risk is cumulative based on the number of exposures, have implications for clinical practice as well as for program planning and prevention. As part of any comprehensive medical evaluation, clinicians should screen for the risk of IPV in both men and women, as well as assess a history of childhood trauma itself (Briere, 1996; Courtois, 1998; Whitfield, 1995). By making these connections and offering effective treatment and/or referral, the clinician can assist in all levels of prevention. Administrators and program planners can help in a similar way by structuring such screening into clinical work.

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