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Exposure to Abuse, Neglect, and Household Dysfunction
Among Adults Who Witnessed Intimate Partner Violence as Children:
Implications for Integrated Health and Social Services

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Abstract

Intimate partner violence (IPV) damages a woman's physical and mental well-being, and indicates that her children are likely to experience abuse, neglect and other traumatic experiences. Adult HMO members completed a questionnaire about adverse childhood experiences (ACEs) including childhood abuse, neglect, and household dysfunction. We used their responses to retrospectively assess the relationship between witnessing intimate partner violence and experiencing any of the 9 ACEs and multiple ACEs (ACE score). Compared to persons who grew up with no domestic violence, the adjusted odds ratio for any individual ACE was approximately 2 to 6 times higher if IPV occurred ($p < 0.05$). There was a powerful graded increase in the prevalence of every category of ACE as the frequency of witnessing IPV increased. In addition, the total number of ACEs was increased dramatically for persons who had witnessed IPV during childhood. There was a positive graded risk for self-reported alcoholism, illicit drug use, IV drug use and depressed affect as the frequency of witnessing IPV increased. Identification of victims of IPV must include screening of their children for abuse, neglect and other types of adverse exposures, as well as recognition that substance abuse and depressed affect are likely consequences of witnessing IPV. Finally, this data strongly suggest that future studies, which focus on the effect of witnessing IPV on long-term health outcomes, may need to take into consideration the co-occurrence of multiple ACEs, which can also affect these outcomes.

Exposure to Abuse, Neglect and Household Dysfunction

Among Adults Who Witnessed Domestic Violence as Children

Widespread recognition that women are frequently victims of intimate partner violence (IPV) emerged during the 1980's. Since then, a growing body of literature has described the risk factors for and the sequelae of women's exposure to intimate partner violence (U.S. Dept of Justice, 2000). In 1992, the American Medical Association (AMA) issued guidelines that recommend screening every woman for exposure to domestic violence at every portal of entry to the medical care system (American Medical Association, 1992; Council on Scientific Affairs, 1992). However, reports suggest that these guidelines and protocols are infrequently followed, or that some cases of child abuse or IPV may be inadvertently missed (Bowen, 2000; Culross, 1999; Sugg & Inui, 1992). Most recently, results from the National Violence Against Women Survey conducted from 1995-1996 found that lifetime prevalence of women reporting physical assault by a current or former intimate partner was 22% and that 41% of those physically assaulted sustained an injury from the most recent assault (U.S. Dept of Justice, 2000).

Despite the issuance of similar AMA guidelines that promote the screening of children for abuse and neglect (Council on Scientific Affairs, 1985), the concomitant problems of violence against women and abuse and/or neglect of her children appear to be frequently treated as separate issues. One reason for this is the different health care practice for adults and children. Second, health care professionals involved in the care of battered women don't always question the victims about the well-being of their children (Bowen, 2000; Culross, 1999; Sugg & Inui, 1992). This is complicated by the fact that battered women are not always willing to discuss the involvement of their children in the assault (Bowen, 2000; Culross, 1999; Sugg & Inui, 1992). In fact, a number of recent studies demonstrate that the children of battered women are often victims of abuse and neglect themselves and that these children are present more often than not during violent altercations between parents (Bowen, 2000; Fantuzzo, Boruch, Beriama, Atkins, & Marcus, 1997; Jaffe, Wolfe, & Wilson, 1990). Finally, many health care practitioners who treat victims of IPV may not recognize that the trauma of growing up with a battered mother has damaging effects on children. For instance, it has been suggested that substance abuse and

mental health disorders can be the sequelae of abuse and neglect in childhood, or witnessing IPV as a child (Campbell & Lewandowski, 1997; Groves, 1999; Hughes, 1988; Jaffe, Wolfe, Wilson, & Zak, 1986; Spaccarelli, Sandler, & Roosa, 1994).

The purpose of the current study is to describe the relationship between reports of witnessing IPV and the likelihood of other adverse childhood experiences (ACEs). Specifically, we quantify the strength of the associations between witnessing IPV and being exposed in childhood to abuse, neglect, household substance abuse, criminality of household members, mental illness among household members, and parental discord. We first assess the strength of these interrelationships in order to substantiate the need for systematic care of adults and children as it pertains to the prevention and treatment of violence against women and ACEs. We then examine the relationship between frequency of witnessing IPV as a child and the risk for substance abuse (self-reported alcoholism, illicit drug use, IV drug use) and depressed affect in adulthood. We did this to provide additional information about the long-term influence of witnessing IPV to persons who deal with IPV and for others whose roles deal primarily with other types of ACEs with which IPV frequently co-occurs.

Method

The Adverse Childhood Experiences (ACE) Study is a collaborative study between the Kaiser Health Plan's Health Appraisal Center in San Diego, California, the Centers for Disease Control and Prevention (CDC, Atlanta), and Emory University. The overall objective is to assess the impact of numerous, interrelated, adverse childhood experiences on a wide variety of health behaviors and outcomes and on health care utilization (Felitti et al., 1998). The ACE Study was approved by the Institutional Review Boards of the Southern California Permanente Medical Group (Kaiser Permanente), Emory University, and the Office of Protection from Research Risks, National Institutes of Health.

Study Population

The study population was drawn from the Health Appraisal Center (HAC), which was created to provide complete and standardized medical, psychosocial, and preventive health evaluations to adult members of Kaiser Health Plan in San Diego County. In any four-year period, 81% of the adult membership will obtain this

complete health assessment and over 50,000 members are evaluated each year. Thus, the purpose of a visit to the HAC is primarily for the purposes of complete health assessments, rather than symptom or illness-based care. Every person evaluated at the HAC completes a standardized questionnaire, which includes detailed health histories, as well as 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.

ACE Study Design and Questionnaire

The baseline data collection was divided into 2 survey waves that used the same methodology described by Felitti et al. Two weeks after the completion of their HAC evaluation, individuals were mailed an ACE Study questionnaire. The ACE questionnaire included detailed information about adverse childhood experiences (i.e. abuse and neglect), family and household dysfunction (i.e. domestic violence and substance abuse by parents or other household members) as well as additional information about health related behaviors from adolescence to adulthood.

Prior publications from the ACE Study included respondents to 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. Thus, there was an overall response rate of 68% (18,175/26,824). 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; Dube et al., in press; Felitti et al., 1998).

Exclusions from the Study Cohort.

Because of the large number of persons seen at the HAC, 754 persons coincidentally underwent examinations there during the time frames for both waves; thus, the unduplicated total number of respondents was 17,421. After exclusion of 17 respondents with missing information about race, 67 with missing information about educational attainment, the study cohort included 95% of the respondents (17,337/ 18,175); (Wave 1=8707, Wave2=8629).

Assessment of Representativeness, and Response or Reporting Bias

In Wave I, the HAC questionnaire data was abstracted for both respondents and nonrespondents to the ACE Study questionnaire. This enabled a detailed assessment of the representativeness of the study population in terms of demographic characteristics and health-related issues. Results of this analysis have been published elsewhere (Edwards et al., 2001). Briefly, as with most survey research, nonrespondents tended to be younger, less educated, or from racial/ethnic minority groups. However, after controlling for demographic differences, the probabilities of health behaviors such as smoking, alcohol or drug abuse, and health conditions such as heart disease, hypertension, obesity, and chronic lung disease did not differ between respondents and nonrespondents. Thus, there was no evidence of any difference in the health behaviors or health status of respondents and nonrespondents.

In addition, the HAC questionnaire 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 respondents and nonrespondents. Thus, there was no evidence that respondents were more likely than nonrespondents to attribute health or social problems to negative childhood experiences.

Definition of ACEs

All questions about ACEs pertained to the respondents' 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, or very often. Questions used to define emotional and physical neglect were adapted from the Childhood Trauma Questionnaire (CTQ; Bernstein et al., 1994). The response categories were never true, rarely true, sometimes true, often true and very often true, and were scored on a Likert scale (1-5), respectively. Some items from the CTQ were reverse-scored based on the context of the question (Bernstein et al., 1994).

Verbal Abuse: Verbal abuse was determined from answers to 2 questions from the CTS: 1) "How often did a parent, stepparent, or adult living in your home swear at you, insult you, or put you down?" 2) "How often did a parent, stepparent, or adult living in your home threaten to hit you or throw something at you, but didn't do it?" Responses of often or very often to either item defined verbal abuse during childhood.

Physical Abuse: Two questions from the CTS 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 respondent 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 (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 4 questions classified a respondent as having experienced contact sexual abuse during childhood.

Emotional Neglect: Five questions from the CTQ were used to describe emotional neglect: 1) “There was someone in my family who helped me feel important or special” 2) “ I felt loved.” 3) “People in my family looked out for each other.” 4) “People in my family felt close to each other.” 5) My family was a source of strength and support.” To determine the CTQ clinical scales, responses were all reversed scored and summed for each individual. An individual with a score of ≥ 15 (moderate to extreme) from the CTQ was defined as having experienced emotional neglect.

Physical Neglect: Five questions from the CTQ were used to describe physical neglect: 1) “I didn’t have enough to eat” 2) “I knew there was someone there to take care of me and protect me.” 3) “My parents were too drunk or too high to take care of me.” 4) “I had to wear dirty clothes.” 5) “There was someone to take me to the doctor if I needed it.” To determine the CTQ clinical scales, these questions were scored and summed for each individual. Questions 2 and 5 were reverse scored. An individual with a score of ≥ 10 (moderate to extreme) from the CTQ was defined as having experienced physical neglect.

Household Substance Abuse: Two questions asked whether the respondent, during his or her childhood, lived with a problem drinker or alcoholic (Shoenborn, 1995) or with anyone who used street drugs. An affirmative response to living with a father, mother, brother, sister, other relative, other non-relative, or anyone who used street drugs indicated childhood exposure to substance abuse in the household.

Mental Illness in Household: A respondent who said that, during his or her childhood, anyone in the household was depressed or mentally ill or had attempted suicide was considered to have been exposed to mental illness.

Parental Separation or Divorce: This ACE was defined as a yes response to the question “Were your parents ever separated or divorced?”

Incarcerated Household Members: If anyone in the household had gone to prison during the respondent’s childhood, this was defined as having childhood exposure to a household member who was incarcerated.

Definition of Substance Abuse and Depressed Affect in Adulthood

Lifetime Depressed Affect. Depressed affect was defined as a yes response to the question “Have you had or do you now have depression or feel down in the dumps?”

Self-Reported Alcoholic. A yes response to the question “Have you ever considered yourself to be an alcoholic?” defined self-reported alcoholism.

Illicit Drug Use. A yes response to the question “Have you ever used street drugs?” defined ever using illicit drugs.

Intravenous Drug Use (IV Drug Use). A yes response to the question “Have you ever injected street drugs?” defined IV drug use.

Definition of Witnessing Domestic Violence

We used 4 questions from the CTS to define childhood exposure to a witnessing domestic violence.

“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 over 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 either of the first or second question or any response other than never to either the third or the fourth question defined a respondent as having had a battered mother. We used the first question to present data about frequency of witnessing IPV and the prevalence of each of the categories of ACE. Finally, we used the same question on frequency of witnessing IPV to assess the risk and prevalence for substance abuse and depressed affect in adulthood.

Statistical Analysis

Persons with incomplete information about an adverse childhood experience were considered not to have had that experience. This would likely result in conservative estimates of the relationships between ACEs and alcohol abuse because persons who had potentially been exposed to an experience would always be misclassified as unexposed. This type of misclassification would, in turn, bias our results toward the null (Rothman, 1986). To assess this potential effect, we repeated our analyses after excluding any respondent with missing information on any of the ACEs and found no substantial differences from the results we report here.

Adjusted odds ratios (OR) and 95% confidence intervals (CI) were obtained from logistic regression models that assessed the associations between growing up with a battered mother and each of the 9 categories of adverse childhood experiences. Covariates in all models included age (continuous variable), sex, race (other versus white), and education (high school diploma, some college, or college graduate versus less than high school).

We estimated the prevalence of the ACEs by the response categories to the first question about maternal battery from the CTS (never, once or twice, sometimes, often, very often) and present the data by the type of ACE (childhood abuse, household dysfunction and childhood neglect). The number of ACEs (ACE Score) was summed for each respondent (range: 0-9); analyses were conducted with the ACE Score as 5 dichotomous variables (0, 1, 2, 3, or ≥ 4) to determine the distribution of the ACE Score by growing up with a battered mother.

To provide additional data and insight into the importance of exposure to IPV on long-term health related outcomes, we examined the relationship between frequency of exposure to IPV and the prevalence and risk of self-reported alcoholism, drug use, IV drug use and depressed affect. Adjusted odds ratios and 95% confidence intervals were obtained from logistic regression models that assessed the association between frequency of witnessing IPV and self-reported alcoholism, illicit drug use, IV drug use, and depressed affect. Frequency of

witnessing IPV was entered into a logistic model as 4 dichotomous variables (once or twice, sometimes, often, very often), with never as the referent; covariates in all models included age, sex, race, and educational attainment.

Results

Characteristics of Study Population

The study population included 9367 (54%) women and 7970 (46%) men. The mean age (\pm standard deviation) was 56 (\pm 15.7) years for women and 58 (\pm 14.6) years for men. Seventy-three percent of women and 76% of men were white; 47% of women and 53% of men were college graduates; another 37% of women and 34% of men had some college education. Only 8% of women and 6% of men did not graduate from high school.

The prevalence of mother or stepmother being pushed, grabbed or shoved as measured by frequency of occurrence (never, once or twice, sometimes, often or very often) was 79%, 10%, 8%, 2% and 1%, respectively, with no significant difference by gender of the respondent. The prevalence of growing up with a battered mother for women, men and the total cohort was 14%, 11% and 13%, respectively. At least one of the 9 categories of ACEs was reported by 61% of respondents. With the exception of physical abuse, the prevalence of each category was higher for women than for men (data not shown).

Association Between Witnessing Domestic Violence and ACEs

Every category of ACE was strongly associated with growing up with a battered mother (Table 1). Although women had higher adjusted odds ratio for several of the categories of ACE, there were no significant differences between the genders. Emotional abuse had the highest adjusted odds ratio for women and men ($p < .001$) of all categories of ACE (Table 1). The highest prevalence found among women was for experiencing household substance abuse (65%); among men the highest prevalence was found for experiencing physical abuse (61%) (Table 1).

The prevalence of each of the ACEs increased in a graded fashion as the frequency of maternal battery increased; we found no difference in these results by gender. For all categories of ACEs, this increase was graded and significant when compared to never witnessing maternal battery, ($p < .001$) (Figures 1, 2, and 3). Furthermore, the distribution of multiple ACEs was increased dramatically if there was a history of growing up with a battered mother (Figure 4; $p < 0.001$). The prevalence of 0 ACEs (42%) was higher among those

individuals who did not grow up with a battered mother, and nearly identical to the prevalence of 4 or more ACEs (36%) among persons who grew up with a battered mother.

Table 2 shows the association between frequency of witnessing IPV as a child and the prevalence and risk (adjusted odds ratio) of adult self-reported alcoholism, illicit drug use, IV drug use and depressed affect. For all 4 outcomes there was a graded increase in the risk for each as frequency of witnessing IPV increased; witnessing IPV very often increased the risk of all four, 2-fold to 4-fold, ($P < .05$) (Table 2).

Discussion

The present study illustrates that children whose mothers are treated violently are more likely to suffer multiple forms of abuse, neglect and serious household dysfunction. The dramatic difference in the clustering of ACEs as measured by the ACE score between individuals who did and did not report witnessing IPV as children, points to the need for integrated services for battered mothers, as well as their children. Thus, a concerted effort must be made by the medical community and providers of social services to integrate these programs. Currently, persons are treated by life stage (i.e. pediatrics vs. adult medicine) and by category of medical or social problem (i.e. domestic violence, substance abuse, child abuse and neglect).

Many studies on the consequences of witnessing IPV and experiencing childhood abuse have found deleterious affects on their children, ranging from behavioral problems in childhood and adolescence to greater psychopathology as adults (Jaffe, Wolfe, & Wilson, 1990; Wolfe, Jaffe, Wilson, & Zak, 1985). We found that among the abuse categories, physical abuse had the highest increase in prevalence as frequency of witnessing IPV increased. This finding may be of special importance, since several studies have indicated that adults who grew up with IPV and who themselves were physically abused are at high risk for being involved in intimate partner violence as adults (Coker, Smith, Mckeown, & King, 2000; Hotaling & Sugarman, 1986; Mohr, 1999; U.S Dept of Justice, 2000).

Our finding that the ACE Score showed a high probability of clustering of ACEs among persons who grew up witnessing IPV has wide-ranging health and social implications. It strengthens the idea that IPV is usually (95% probability) associated with some form of child abuse or neglect or other serious family dysfunction. This should signal to health care and social services professionals that the identification of victims of IPV is a

potential marker for other events that may be occurring among family members. Moreover, the number of ACEs have been shown to have a positive graded relationship to negative outcomes during adolescence and adulthood including numerous health risk behaviors (Anda et al, 1999; Dube et al., in press; Felitti et al, 1998), unintended pregnancy (Dietz et al., 1999), sexually transmitted diseases (Hillis, et al., 2000), and many of the leading causes of death in the United States (Felitti et al, 1998).

Additional analysis of the data revealed strong relationships between frequency of witnessing IPV as a child and substance use and depressed affect later in adulthood. Specifically, as the frequency of witnessing IPV increased the probability of alcohol or illicit drug use and depressed affect in adulthood increased in a positive graded fashion. While this information is important in its own right, we have previously reported graded relationships between the number of ACEs and numerous health and social problems (Anda et. al, 1999; Felitti et al., 1998; Dietz et al., 1999; Hillis et al., 2000; Dube et al., in press). Thus, to more accurately understand the long-term effects of witnessing IPV, it is imperative to simultaneously consider the long-term, detrimental effects of the co-occurrence of childhood abuse, neglect and household dysfunction.

A potential weakness of our study is the possible under-reporting of witnessing IPV and ACEs. However, if both the exposure (witnessing IPV) and the outcome (ACEs) are underreported, this would bias our results towards the null. Therefore, although our findings are strong, they probably underestimate the true strength of the relationships of witnessing IPV to ACEs. There are several reasons to believe that our estimates of the long-term relationship between adverse childhood experiences and adult health are conservative. Longitudinal follow-up of adults whose childhood abuse was well documented has shown that their retrospective reports of childhood abuse are likely to underestimate actual occurrence (Femina, Yeager & Lewis, 1990; Williams, 1995). Underestimates of childhood exposures would result in downwardly biased estimates of the relationships between childhood exposures and adult health risk behaviors and diseases. Another potential source of underestimation of the strength of these relationships is related to the lower number of childhood exposures reported by older persons in our study. This could be an artifact caused by premature mortality in persons with multiple adverse childhood exposures; the clustering of multiple risk factors among persons with multiple childhood exposures is consistent with this hypothesis (Felitti et al., 1998). Thus, the true relationships between

adverse childhood exposures and adult health risk behaviors, health status, and diseases may be even stronger than those we report. It is also possible there is differential recall, depending upon the nature and significance of the events (e.g., sexual abuse compared with emotional neglect).

Another potential limitation is the uncertainty of whether or not witnessing intimate partner violence or ACEs are truly the exposure and outcome, respectively. While strong associations were observed between the frequency of witnessing IPV and each of the ACEs, an understanding of the family dynamics cannot be detailed through a study such as this. The descriptive nature of this particular analysis should serve as a foundation to investigate further the high prevalence of co-occurring child abuse, neglect and household dysfunction with domestic violence. Nonetheless, the strong association observed between witnessing intimate partner violence and ACEs must not be overlooked because of these limitations.

Other population-based studies have found levels of exposures nearly identical to ours. For example, we found that 16% of the men and 25% of women met the case definition for contact sexual abuse; a national telephone survey of adults in 1990 conducted by Finkelhor, et al using similar criteria for sexual abuse estimated that 16% of men and 27% of women and had been sexually abused (Finkelhor, Hotaling, Lewis, & Smith, 1990). Twenty-eight percent of the men from our study had been physically abused as boys, which closely parallels the percentage found (31%) 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 and the geographic diversity of their states of birth suggest that our findings are likely to be applicable in other settings.

There are several reasons why the frequency of witnessing IPV from the ACE Study (13%) was slightly lower than frequencies reported elsewhere (10-30%) (U.S. Dept of Health and Human Services, 1990; U.S Dept of Justice, 2000; Wilt & Olson, 1996). First, we present a period prevalence (first 18 years of the respondents' life), which is retrospective. Other studies report the lifetime prevalence of being a victim of domestic violence, which include the general female population. Second, the definition for witnessing IPV used in the ACE Study is more stringent than, for instance, definitions used in the National Violence Against Women Survey. Despite

these differences, we find a similar frequency in the overlap of domestic violence with childhood physical abuse (60%); other population-based studies report an overlap of 60-75% (Edleson, 1995; Osofsky, 1999).

Our findings suggest child and family health care services and social services must truly be systematically integrated into adult health care. This form of service would necessarily include screening all women for domestic violence and pediatric health care that screens every child for abuse, neglect, and exposure to other forms of deleterious household dysfunction; communication between adult and pediatric medical practitioners for affected families is sorely needed. Furthermore, the high prevalence of substance abuse in homes with IPV will also require integrated health care and social services to ensure that when individuals are treated for substance abuse all family members from these homes are also screened for domestic violence and child abuse and neglect. Thus, the challenge is for various disciplines that have tended to view their practices categorically, to make a transition that leads to “cross-screening”. Practitioners who identify and treat victims of IPV must inquire about any children involved and those who identify and treat abused and neglected children must inquire about the possibility that the mother may be the victim of domestic violence. Without such integrated services children who witness IPV are likely to continue to be at high risk for abuse, neglect, and exposure to other potentially traumatic experiences, and be at high risk for health and social problems, such as substance abuse and depressed affect, later in life.

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Table 1.

Prevalence and Adjusted Odds Ratio of ACEs by Childhood Exposure to Witnessing IPV by Gender.

Dependent variable	Battered Mother	Women		Men	
		%	Adjusted Odds Ratio	%	Adjusted Odds Ratio
Emotional neglect ^a	No	13.1	1.0 (Referent)	9.8	1.0 (Referent)
	Yes	39.0	3.9 (3.3-4.7)	31.9	4.1 (3.2-5.1)
Physical neglect ^a	No	6.4	1.0 (Referent)	8.3	1.0 (Referent)
	Yes	26.7	4.9 (3.9-6.1)	28.7	4.4 (3.4-5.6)
Emotional abuse	No	9.2	1.0 (Referent)	5.2	1.0 (Referent)
	Yes	37.7	5.8 (5.1-6.8)	25.2	6.0 (4.9-7.2)
Physical abuse	No	22.0	1.0 (Referent)	25.8	1.0 (Referent)
	Yes	58.8	4.8 (4.2-5.5)	61.4	4.4 (3.8-5.1)
Sexual abuse	No	21.8	1.0 (Referent)	14.4	1.0 (Referent)
	Yes	42.6	2.6 (2.3-2.9)	28.4	2.3 (2.0-2.7)
Household mental illness	No	20.3	1.0 (Referent)	12.7	1.0 (Referent)
	Yes	42.1	2.9 (2.5-3.3)	30.5	3.1 (2.6-3.6)
Household substance abuse	No	23.9	1.0 (Referent)	19.4	1.0 (Referent)
	Yes	64.8	5.6 (4.9-6.3)	57.6	5.5 (4.8-6.4)
Parental separation/divorce	No	20.1	1.0 (Referent)	18.3	1.0 (Referent)
	Yes	51.8	3.9 (3.4-4.4)	48.3	3.9 (3.3-4.5)
Incarcerated household member	No	3.9	1.0 (Referent)	3.1	1.0 (Referent)
	Yes	13.4	3.2 (2.6-3.9)	11.5	3.3 (2.6-4.2)

^a Emotional and Physical neglect from Wave 2 only where women = 4674 and men = 3955.

* P < .05 in a logistic model adjusting for age, sex, race and education.

Figure 1. Prevalence of childhood abuse by frequency of having witnessed IPV as a child.

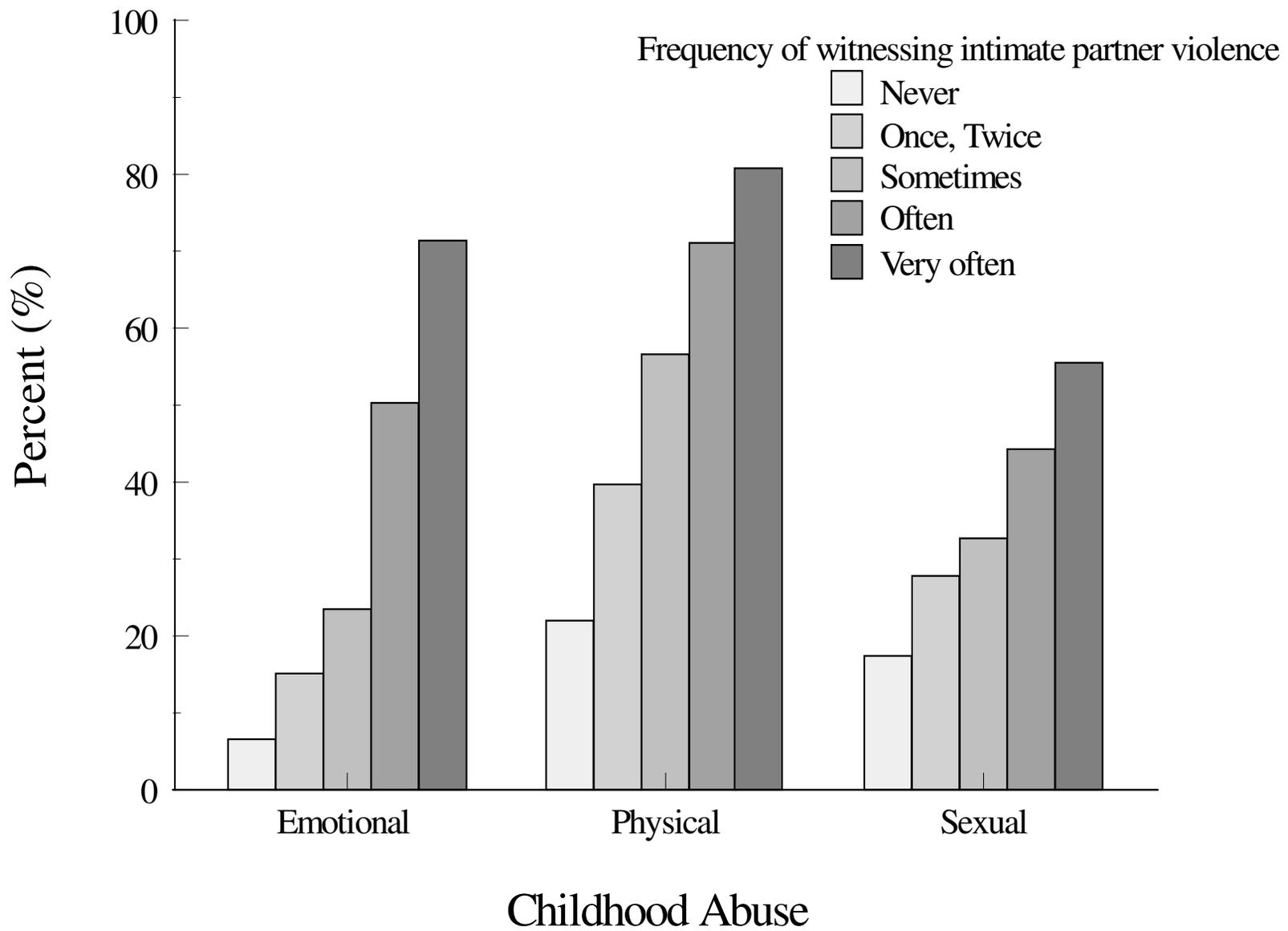


Figure 2. Prevalence of household dysfunction by frequency of having witnessed IPV as a child.

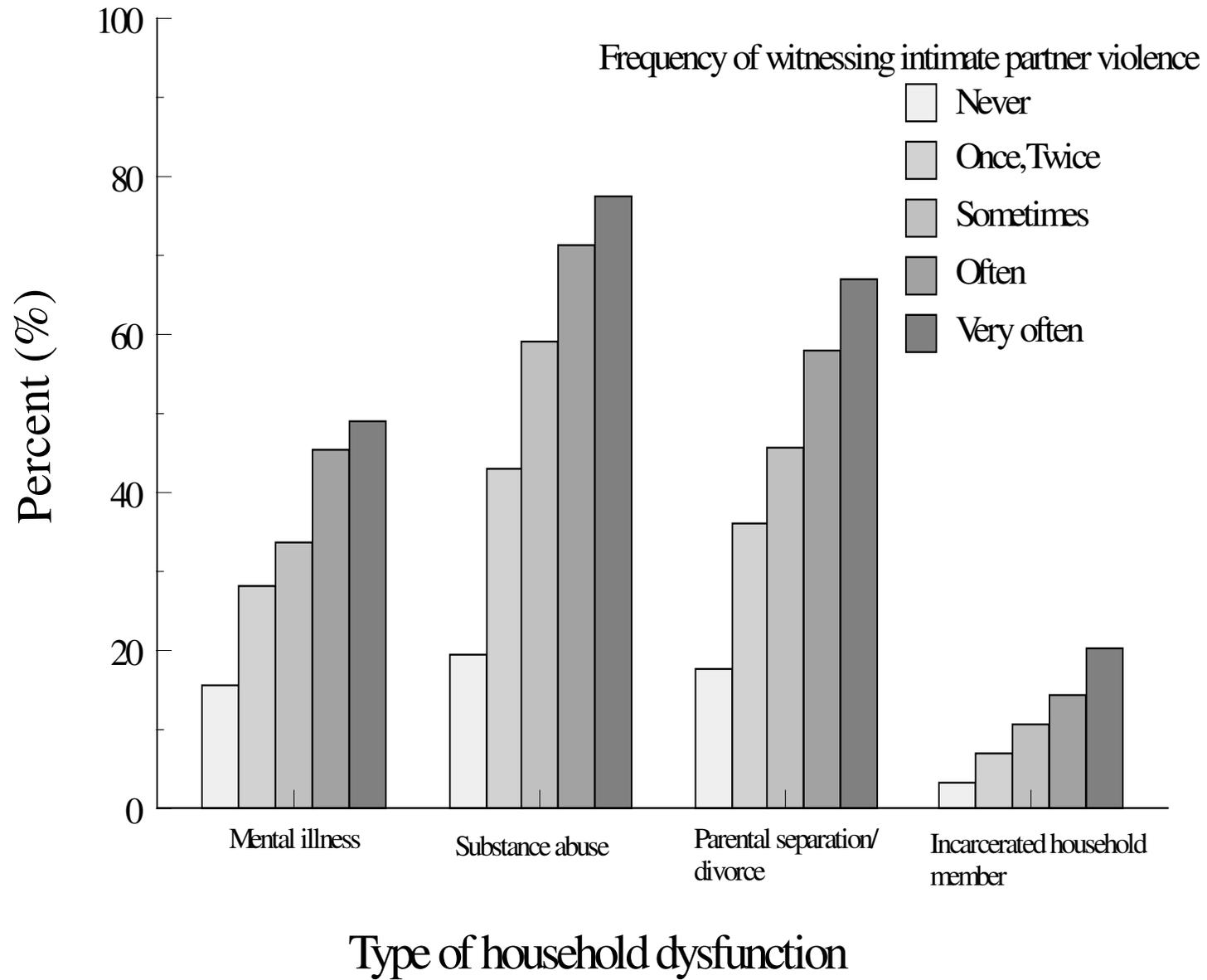


Figure 3. Prevalence of childhood neglect by frequency of having witnessed IPV as a child.

Figure 3. Data available from Wave 2 only, n = 8629.

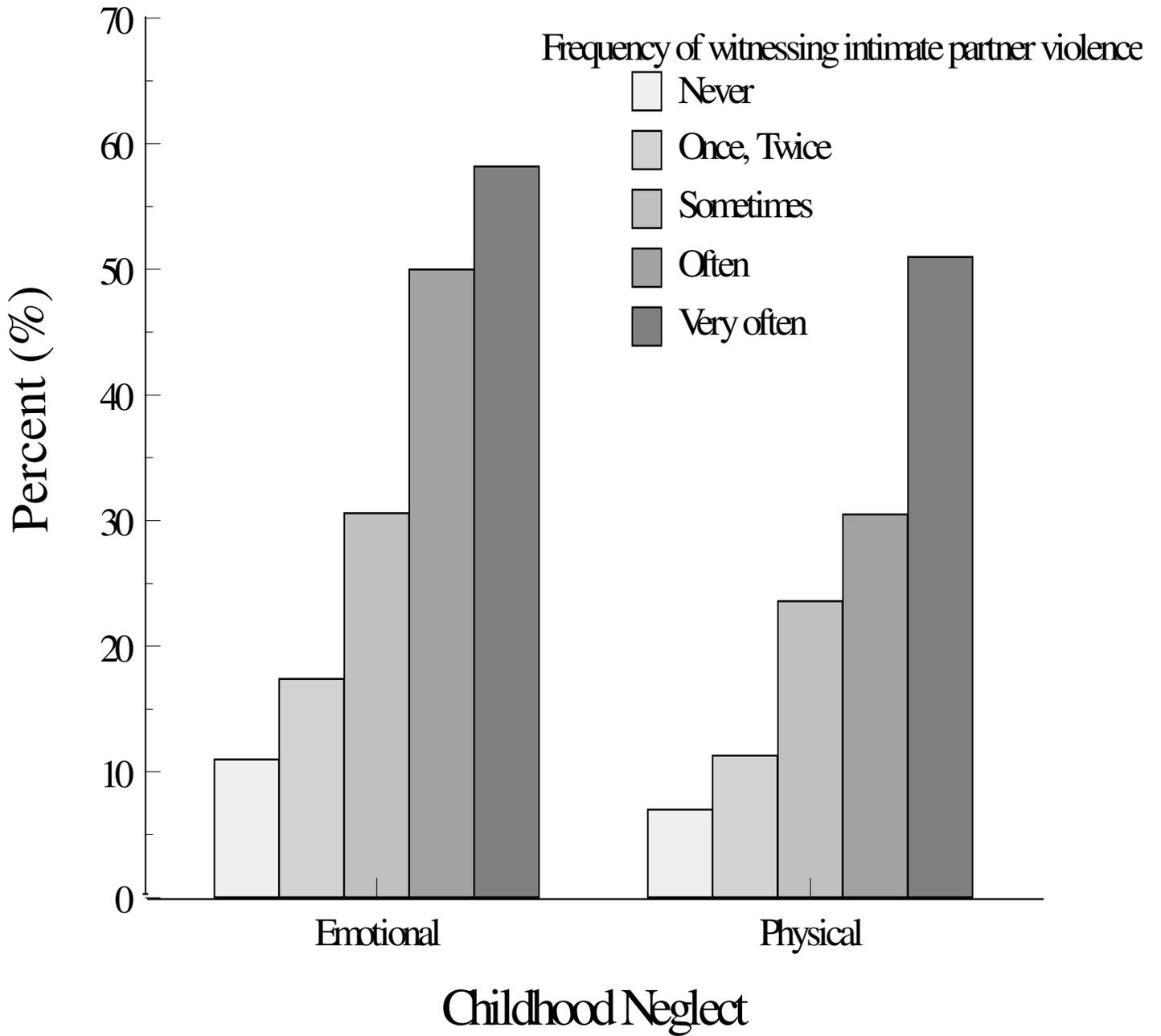


Figure 4. Distribution of ACE scores by a History of Growing up with a Battered Mother (n = 17,337).

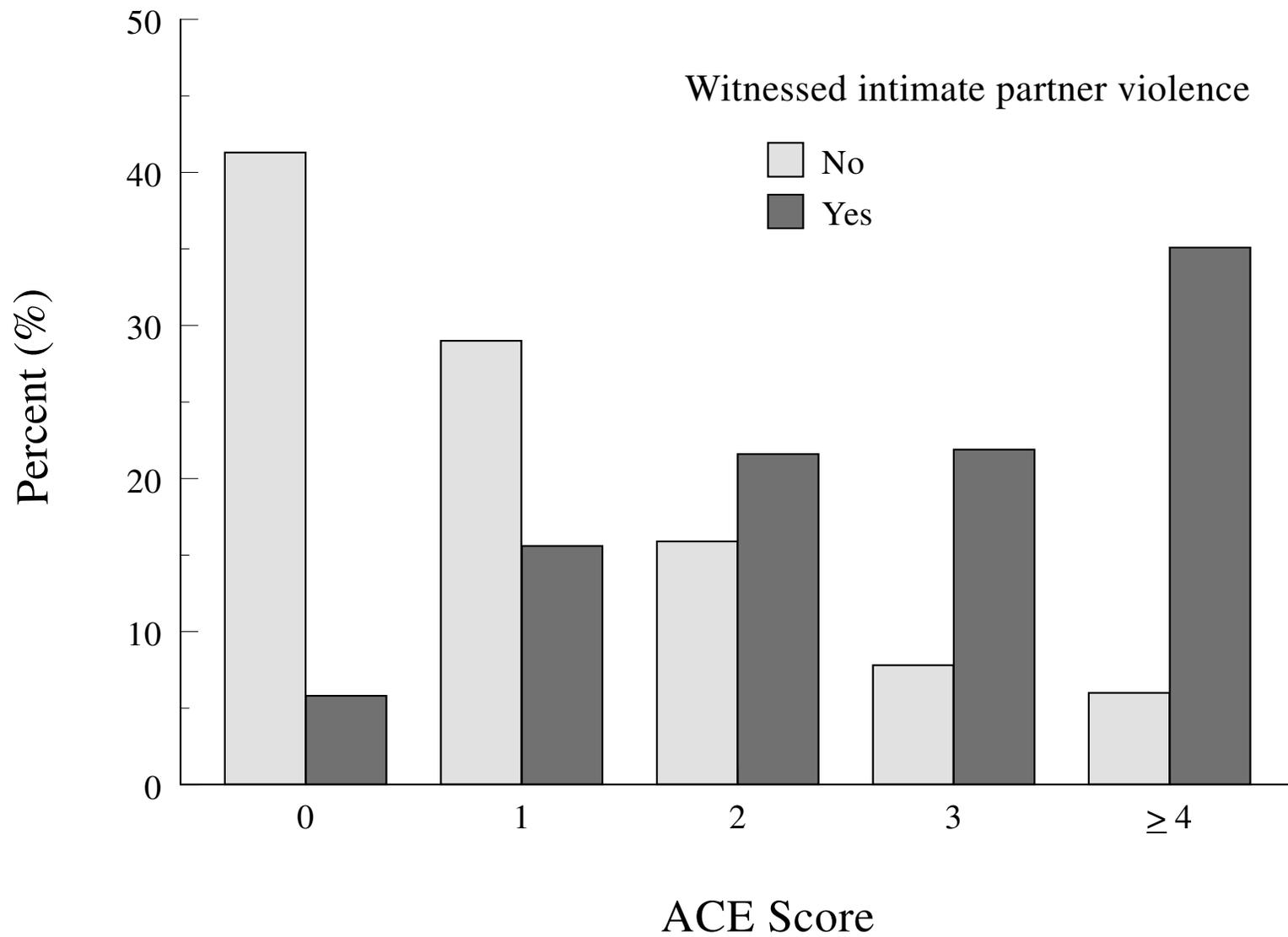


Table 2.

Frequency of Witnessing Intimate Partner Violence and Risk of Adult Substance Abuse and Depressed Affect.

	N	Self-Reported Alcoholism		Illicit Drug Use		Intravenous Drug Use		Depressed Affect	
		(%)	Adjusted Odds Ratio*	(%)	Adjusted Odds Ratio*	(%)	Adjusted Odds Ratio*	(%)	Adjusted Odds Ratio*
Witnessed Pushing, Grabbing, Slapping									
Never	13619	5.1	1.0 (referent)	14.1	1.0 (referent)	0.8	1.0 (referent)	26.1	1.0 (referent)
Once, Twice	1778	8.6	1.7 (1.4-2.0)	23.2	1.5 (1.3-1.7)	1.7	1.8 (1.2-2.7)	33.6	1.4 (1.3-1.6)
Sometimes	1329	11.4	2.2 (1.9-2.7)	24.0	1.8 (1.5-2.1)	2.4	2.5 (1.6-3.7)	37.6	1.7 (1.5-1.9)
Often	429	15.2	3.3 (2.5-4.4)	30.5	2.3 (1.8-2.9)	3.0	3.0 (1.7-5.5)	43.4	1.9 (1.5-2.3)
Very often	182	15.9	3.6 (2.4-5.4)	33.0	2.3 (1.6-3.2)	3.3	3.2 (1.4-7.5)	45.1	1.9 (1.4-2.6)
Total	17337	6.3		16.4		1.3		28.4	

*Odds ratios adjusted for age at survey, sex, race and educational attainment.