Published in final edited form as:

Violence Vict. 2009 ; 24(5): 653–668.

Reliability of self-reported childhood physical abuse by adults and factors predictive of inconsistent reporting

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Abstract

Little is known about the reliability of self-reported child physical abuse (CPA) or CPA reporting practices. We estimated reliability and prevalence of self-reported CPA, and identified factors predictive of inconsistent CPA reporting among 2,256 participants using surveys administered in 1995 and 2000. Reliability of CPA was fair to moderate ($K=0.41$). Using a positive report from either survey, the prevalence of moderate (61.8%) and severe (12.0%) CPA was higher than at either survey alone. Compared to consistent reporters of having experienced CPA, inconsistent reporters were less likely to be ≥ 30 years old (vs. 18–29) or black (vs. white); and more likely to have < 12 years of education (vs. 12), have no alcohol-related problems (vs. having problems), or report one type (vs. $\geq$ two) of CPA. These findings may assist researchers conducting and interpreting studies of CPA.

Keywords

child abuse; health survey; population-based; prevalence; reporting practices

Child abuse is one of the most prevalent types of violence in the United States (US). An estimated 54% of men and 43% of women report having been abused by a parent or caregiver before age 18 (Tjaden & Thoennes, 2000). The adverse health and social consequences of child abuse are extensive and have been well-described (Caetano, Field, & Nelson, 2003; Felitti et al., 1998; Fergusson & Lynskey, 1997). Studies of child abuse are frequently conducted in adults and rely on self-reported histories (Bensley, Van Eenwyk, & Simmons, 2000, 2003; Caetano et al., 2003; Fergusson & Lynskey, 1997). Self-report is often the only practicable way to obtain information about a respondent's child abuse history and collecting self-reported child abuse information is generally straightforward and cost-efficient. However, measures of self-reported child abuse measures may not be reliable or valid. Reliability studies have examined consistency of self-reported child abuse, ascertaining this history in the same manner on two or more occasions. Most reliability studies have been conducted in convenience samples or clinical populations (Aalsma, Zimet, Fortenberry, Blythe, & Orr, 2002; Bernstein et al., 1994; Riddle & Aponte, 1999). Validity studies assess the extent to which self-reported childhood abuse reflects respondents' actual experience and tend to be limited to individuals with a documented history of child abuse since no other measure of actual experience exists. Given this restriction, these studies typically involve small samples. Validity studies of child physical abuse (CPA) reporting have found that a substantial proportion of women who experienced CPA do not self-report

child abuse in adulthood (Widom & Shepard, 1996, 1997; L. M. Williams, 1994). However, validity studies may not represent reporting practices related to child abuse in the general population. For example, it may be that those with documented child abuse may not disclose the abuse for fear of recounting a painful experience; in contrast, those in the general population likely represent a broader spectrum of childhood abuse experiences, many of which are likely less severe and less emotionally painful to disclose.

Studies suggest the most common type of misreporting of child abuse is underreporting – that is, individuals who experienced childhood abuse report not having been abused in childhood (Fergusson, Horwood, & Woodward, 2000; Hardt & Rutter, 2004; Widom & Shepard, 1996). Individuals abused in childhood may not disclose such a history for a variety of reasons. They may not divulge information on this sensitive topic to an interviewer they do not know or with whom they do not feel comfortable (Della Femina, Yeager, & Lewis, 1990). Some respondents may wish to avoid the pain they may feel by verbalizing and thinking about the experience while other respondents may feel embarrassed or ashamed (Della Femina et al., 1990). Another explanation is that adult respondents may have simply forgotten since most respondents are asked to recall experiences which occurred years ago and took place during an early period in their life. Other research indicates that survivors of childhood victimization may experience memory impairment and not recall the event (Bremner, 1999; L. M. Williams, 1995).

Certain characteristics of the abuse may influence child abuse reporting practices. Recall may differ depending on the type of abuse (e.g. physical vs. sexual), the kinds of acts committed (e.g. having been slapped vs. threatened with a gun), or severity or chronicity of abuse. One study found that individuals who experienced highly traumatic events in childhood, such as physical violence, were more likely to reliably report the experience (Costello, Angold, March, & Fairbank, 1998). Yet others argue that these same individuals may be less inclined to disclose their abuse history since doing so could potentially bring back painful memories or because they blocked out the experience (Bremner, 1999; L. M. Williams, 1995). In contrast, those with mild or less frequent forms of childhood abuse may discount or forget these experiences and not reliably report them. Demographic factors may also be tied to child abuse reporting. Some evidence suggests men may be less likely to reveal a history of child abuse than women (Widom & Shepard, 1996, 1997). Time since the abuse occurred may also impact reliability of reporting: older individuals may be more likely to have forgotten abusive childhood experiences (Widom & Shepard, 1997) or wish to leave them in the past and not recount them. Cultural norms and perspectives delineating CPA from disciplinary measures may vary across race/ethnicity and influence reporting. Other demographic and behavioral characteristics such as level of education, employment status, markers of alcohol abuse or a history of intimate partner violence (IPV) could also plausibly relate to CPA reporting practices.

We used data from a national population-based longitudinal study of couples collected in 1995 and 2000 to estimate the reliability of self-reported CPA. We estimated prevalence of CPA at each survey wave and across both surveys, using a positive report at either survey to evaluate underreporting. We hypothesized that certain factors including male sex, black race/ethnicity, less severe abuse and fewer types of CPA would be positively associated with inconsistent reporting CPA.

METHOD

Sample

The initial 1995 survey consisted of a multistage random probability sample of couples aged 18 years and older in the 48 contiguous US; 1925 participants who were married or

cohabitating and their partners were eligible for the study and 1635 couples participated (Caetano & Clark, 1998). In 2000, the 1635 couples previously interviewed were re-contacted to participate in a follow-up survey. One or both members of 1392 couples (2542 individuals) were interviewed. Both survey waves were conducted using a structured questionnaire in a face-to-face interview in either English or Spanish and asked exactly the same questions concerning CPA (Table 1). This study is based on 2256 individuals (1111 men and 1145 women) who participated in both surveys and responded definitely to all questions related to CPA in both 1995 and 2000.

To evaluate potential selection bias, we assessed differences between the 2256 individuals included in this study and those who took part in the survey(s) but were not included (n=974). The majority (n=688) of non-participants took part only in the 1995 survey; the remaining subjects (n=286) were excluded because of incomplete information on CPA questions. Compared to study subjects, a greater weighted proportion of non-participants were black (6.7% vs. 9.1%), were 18 to 29 years old in 1995 (14.0% vs. 19.9%), or had <12 years of education (13.9% vs. 24.2%) in 1995. Fewer non-participants than participants (62.9% vs. 69.2%) were employed.

Measures

All measures except for CPA-related measures relied on responses to the 1995 survey and thus were collected prior to the determination of whether participants were consistent or inconsistent reporters of CPA. We categorized all variables for analyses as presented in Table 2 unless otherwise indicated.

Childhood physical abuse measures—Both surveys asked whether the respondent's parent or caregiver had ever: hit them with something; beaten them up; burned or scalded them; threatened them with a knife or gun; or used a knife or gun against them during childhood or adolescence (Table 1). We created a dichotomous measure of child abuse: participants who answered affirmatively to any of these behaviors were categorized as having a history of CPA (CPA⁺) while those who did not report experiencing any of these acts were classified as having no history of CPA (CPA⁻). Separate dichotomous measures were created for the 1995 and 2000 surveys.

We identified three distinct groups of CPA reporting: 1) those who reported CPA at one survey but not the other were classified as inconsistent ("inconsistent CPA reporters"); 2) those who reported having experienced CPA at both the 1995 and 2000 surveys were classified as consistent reporters of having a history of CPA ("consistent CPA⁺ reporters"); and 3) those who reported no CPA at either survey were classified as consistent reporters of no CPA ("consistent CPA⁻ reporters").

Because we anticipated that those who experienced moderate versus severe CPA (or one versus multiple types of CPA) would be more likely to be inconsistent CPA reporters (relative to consistent CPA⁺ reporters), we created measures of severity and number of types of CPA. For severity, we classified a 1995 reported history of having been hit with something only (without having experienced any of the typically more severe types of violence) as "moderate CPA". Respondents who reported experiencing any of the other more aggressive acts (of those listed in Table 1) at the 1995 survey were classified as "severe CPA". We used the 2000 measure of CPA to classify inconsistent respondents who reported no abuse in 1995. For number of types of CPA, we classified participants who reported a history of two or more types of violence (of those listed in Table 1) at the 1995 survey as having experienced multiple types of CPA. Respondents who reported only one type of CPA in the 1995 survey were classified as such. For inconsistent reporters who reported no abuse in 1995, we used the 2000 measure to classify them as having experienced

one or multiple types of CPA. For all participants, we used only one survey to measure severity and number of types of CPA. Using both surveys could have potentially biased our estimates since consistent reporters would have had two opportunities to report severe (or multiple types of) abuse whereas inconsistent reporters had this information available at only one survey.

Alcohol measures—Alcohol consumption was based upon respondents' reported frequency and quantity of drinking over the past 12 months; a standard drink was defined as four ounces of wine, 12 ounces of beer or one ounce of spirits. Binge drinking was defined as drinking five or more alcoholic beverages per occasion at least once within the past year. Participants who responded positively to having experienced at least one of 25 items encompassing alcohol-related problems in the past year such as withdrawal symptoms, health- or work-related problems were classified as having an alcohol problem (Cunradi, Caetano, Clark, & Schafer, 1999). Those who did not meet these criteria for binge drinking or alcohol-related problems were classified as not having been exposed to these factors.

Intimate partner violence—Participants were asked about a series of physically violent behaviors taken from the Conflict Tactics Scale, Form N (Straus, 1990). Each respondent was asked whether (s)he or their partner had behaved in the following manner toward their partner in the past year: thrown something; pushed, grabbed or shoved; slapped; kicked, bit or hit; hit or tried to hit with something; beat up; choked; burned or scalded; forced sex; threatened with a knife or gun; or used a knife or gun (Straus, 1990). Each respondent reported separately their behavior toward their partner and their partner's behavior toward them. Male-to-female partner violence (MFPV) was considered present for a respondent if they or their partner reported the male had committed any of the specified violent behaviors in the past year. Likewise, female-to-male partner violence (FMPV) was considered present if either or both dyad member(s) reported the female had committed any of the listed behaviors in the past year. Those who reported that no violent behaviors had occurred in the past year were categorized as not having experienced MFPV (or FMPV). Thus, each individual's measure of MFPV and FMPV was based on the couple's report of these behaviors; for participants whose partner did not participate in the 2000 survey (n=112), these measures are based solely on their responses.

Other measures—We categorized ethnicity as follows: persons reporting Hispanic ethnicity were classified as Hispanic ("Hispanic"). Remaining subjects were classified as non-Hispanic white ("white"); non-Hispanic black ("black"); or non-Hispanic other race ("mixed/other"), which includes both other and multi-race individuals. We also considered other demographic characteristics including sex, age, level of education and employment status. Household income was collected from only one respondent in each couple. As a result, household income for respondents was based either on the respondent's or their partner's response. Respondents who reported any use of cocaine, crack cocaine, heroin, opium, marijuana, hash or grass in the 12 months prior to the survey were categorized as having a history of illicit drug use; otherwise respondents were considered not to have used illicit drugs.

Analysis

We evaluated the consistency in reporting of CPA overall, across sex, and for each specific type of abuse about which we asked (Table 1). We assessed the test-retest reliability of CPA reporting using percent agreement and kappa. Percent agreement is the proportion of subjects for whom the response at both time points was the same, while kappa evaluates the degree of agreement beyond that expected by chance alone (Fleiss, 1981). Next, we assessed the prevalence of CPA at the 1995 and 2000 surveys separately, and the two surveys

combined. For the combined prevalence, a positive response at either survey was used to indicate CPA. We estimated these prevalence measures overall, across sex and for severe CPA.

We examined factors that could plausibly be predictive of inconsistent CPA reporting. We used Stata 10.0 for all analyses (Stata Corporation, 2007) and employed a complex survey sampling adjustment which accounted for stratification, sampling weights and clustering. Because the adjustment for clustering at the primary sampling unit (PSU) level also accounted for clustering below the PSU level, no further adjustment for clustering in couples was necessary (Binder, 1983; R. L. Williams, 2000). We used logistic regression for survey data to identify predictors of inconsistent CPA reporting.

We anticipated predictors could differ when inconsistent CPA reporters were compared to: 1) consistent CPA⁺ reporters; or 2) consistent CPA⁻ reporters. This is because evidence suggests systematic differences in CPA reporting. Studies suggest underreporting of CPA is common and that false positives are rare (Fergusson et al., 2000; Hardt & Rutter, 2004; L. M. Williams, 1995). Thus, it is plausible that most inconsistent CPA reporters likely had a history of CPA. Though some who experienced CPA do not disclose this history even when asked repeatedly (and would be classified as CPA⁻ reporters), it is likely that the majority of CPA⁻ reporters are individuals who did not experience CPA. Consequently, comparing inconsistent CPA reporters to consistent CPA⁻ reporters may capture either predictors of inconsistent reporting or factors associated with having experienced CPA. In contrast, comparing inconsistent CPA reporters to consistent CPA⁺ reporters may have enabled us to better isolate factors predictive of inconsistent CPA reporting, presuming that most in these two groups had experienced CPA,

Our primary model evaluated potential predictors of inconsistent CPA reporting relative to consistent CPA⁺ reporting; the other evaluated potential predictors of inconsistent CPA reporting compared to consistent CPA⁻ reporting. For each predictive model, we used a backward logistic regression procedure. All potentially predictive variables were included in the initial model. The variable with the highest p-value was removed and the remaining model rerun. This process was repeated until all variables in the model had p-values <0.05 from a design-based Wald test. The number of observations in each model was allowed to vary since the difference in the number of observations between any two adjacent models was relatively small, less than 2%, except for household income which was missing 7.2%. We postulated that being male, black race/ethnicity or younger in age (<30 years) or experiencing moderate or one type of CPA would be positively associated with being an inconsistent reporter of CPA. Other factors we anticipated could be positively associated with inconsistently reporting CPA included having <12 years of education, being unemployed, or having a history of alcohol-related problems, binge drinking, or IPV.

Based on our measures, moderate CPA and multiple types of CPA were mutually exclusive. Consequently, only one of these variables was included in the predictive model comparing inconsistent CPA reporters to consistent CPA⁺ reporters. We included the number of types of CPA in our primary predictive model because it was most strongly related to consistency of reporting CPA in bivariate analyses. To evaluate severity of CPA as a predictor of inconsistent CPA reporting (vs. consistent CPA⁺ reporting) in multivariable analysis, we conducted a secondary analysis by redeveloping the predictive model and including severity of CPA instead of number of types of CPA. Neither severity nor number of types of CPA was included in the predictive model comparing inconsistent CPA reporters to consistent CPA⁻ reporters since consistent CPA⁻ reporters reported not having experienced CPA.

RESULTS

Reliability

Just over one-quarter of respondents were inconsistent CPA reporters across the two surveys; the bulk of respondents were consistent CPA⁺ reporters (Table 1). As compared to men, fewer women were consistent CPA⁺ reporters and twice as many women were consistent CPA⁻ reporters. Percent agreement for CPA, overall and for each sex, was approximately 72%; act-specific agreement ranged from 72% to 99%. The overall kappa for CPA displayed fair to moderate reliability: it was similar for the entire sample and women, and slightly lower for men. Kappa for act-specific types of CPA ranged from fair to moderate, except for reports of having a parent or caregiver use a knife or gun used against a participant which was very low (Table 1).

Prevalence

As expected, the prevalence of CPA was greater when using a positive report of CPA from either the 1995 or 2000 survey (Table 3). This was true for moderate and severe CPA and CPA prevalence across sex. Proportionately, the overall prevalence of severe CPA increased by 54% (from 7.8% to 12.0%) whereas the overall prevalence of moderate CPA increased by 17% (from 52.6% to 61.8%). Similar trends were observed for each sex, though women tended to have a lower prevalence of moderate CPA than men (Table 3).

Demographic and behavioral characteristic across consistency of CPA reporting

Among those who reported CPA at either survey, just over one-third were inconsistent CPA reporters and nearly two-thirds were consistent CPA⁺ reporters (Table 2). Inconsistent CPA reporting was more common among respondents less than 30 years old (vs. ≥ 30); those with <12 years of education (vs. ≥ 12); and those who were unemployed (vs. all others). The proportion of inconsistent CPA reporters was similar among those who did or did not binge drink and those who did and did not experience IPV in the last 12 months. A greater proportion of inconsistent CPA respondents reported moderate rather than severe CPA. Similarly, a greater proportion of inconsistent CPA reporters experienced only one type of CPA. The vast majority of subjects who experienced multiple types of CPA were consistent CPA⁺ reporters (Table 2).

Predictors of inconsistent CPA reporting

In our primary predictive model comparing inconsistent CPA reporters to consistent CPA⁺ reporters, those who were ≥ 30 years of age (vs. 18–29); were black or Hispanic (vs. white) or reported FMPV (vs. no FMPV) were less likely than their counterparts to be inconsistent CPA reporters. Relative to consistent CPA⁺ reporters, inconsistent CPA reporters were more likely to have <12 years of education (vs. 12), no history of alcohol-related problems (vs. having problems) and only one (vs. $\geq$ two) type of CPA (Table 4). However, several of these estimates had confidence intervals compatible with no association.

In our analysis comparing inconsistent CPA reporters to consistent CPA⁻ reporters, males (vs. females) and those who reported MFPV (vs. no MFPV) were more likely to be inconsistent CPA reporters (Table 4). Those ≥ 30 years of age were less likely to be inconsistent CPA reporters than those 18–29 years of age relative to consistent CPA⁻ reporters.

In a secondary analysis using severity of CPA (instead of number of types of CPA) in developing our predictive model, we found that the exact same variables were predictive of inconsistent CPA reporting when compared to consistent CPA⁺ reporting (data not shown);

those reporting moderate CPA were 2.4 times more likely to be inconsistent CPA reporters (95% CI: 1.4, 4.3) than those reporting severe CPA.

DISCUSSION

To our knowledge, this is the largest study to-date that has examined the reliability of CPA. We observed fair to moderate reliability of adult self-reported CPA for most act-specific questions about CPA and for dichotomous measures of CPA. Prevalence of CPA was considerably higher when a positive report from either the 1995 or 2000 survey was used to identify a history of CPA. Factors including age, race/ethnicity, education, alcohol-related problems and female-to-male partner violence appeared predictive of inconsistent CPA reporting.

Our results were similar to other studies of reliability of CPA in which measures of kappa ranged from 0.32 to 0.63, indicating fair to moderate reliability (Bifulco, Brown, Lillie, & Jarvis, 1997; Dube, Williamson, Thompson, Felitti, & Anda, 2004; Fergusson et al., 2000). Similar to other findings, our results suggest that the prevalence of CPA increases considerably when subjects are asked about a history of CPA on at least two different occasions and any positive report is used to indicate CPA (Aalsma et al., 2002; Fergusson et al., 2000). These results are also compatible with several studies which demonstrated that child abuse is frequently underreported by adults (Della Femina et al., 1990; Widom & Shepard, 1996; L. M. Williams, 1994). One study estimated that only half of subjects exposed to CPA are identified through initial questioning (Fergusson et al., 2000). Furthermore, research has indicated that few individuals report a history of abuse when none exists (Fergusson et al., 2000; Hardt & Rutter, 2004). If true, inconsistent reporters of CPA predominantly represent individuals with a history of CPA and using any positive response across multiple inquiries would seem a reasonable approach to obtaining a more accurate estimate of CPA prevalence. However, though estimates based on multiple inquiries are likely an improvement over single inquiry, such estimates are still likely to be conservative since some respondents who experienced CPA do not disclose it even when asked multiple times.

We also provide new information about factors predictive of inconsistent CPA reporting. Limited previous studies of this question did not find inconsistent CPA reporting to be associated with demographic or behavioral factors (Fergusson et al., 2000; Friedrich, Talley, Panser, Fett, & Zinsmeister, 1997). However, unlike previous studies, we anticipated and observed that predictors of inconsistent CPA reporting differed when compared to consistent CPA⁺ reporters and consistent CPA⁻ reporters. Given that most who disclose a history of CPA have experienced CPA and that CPA is commonly underreported (Fergusson et al., 2000; Hardt & Rutter, 2004; L. M. Williams, 1995), comparing inconsistent CPA reporters to consistent CPA⁺ reporters contrasted two groups, both predominantly made up of individuals who likely experienced CPA. In contrast, evaluating inconsistent CPA reporters relative to consistent CPA⁻ reporters compared individuals with and without a likely history of CPA: a comparison that may have identified factors predictive of either inconsistent reporting or having a history of CPA. Accordingly, examining predictors of inconsistent CPA reporting as compared to consistent CPA⁺ reporting may be cautiously interpreted as evaluating predictors of CPA reporting among individuals with a CPA history. In other words, among individuals assumed to have a history of CPA, those who had <12 years of education (vs. 12 years), for example, were more likely to be inconsistent reporters of CPA relative to their consistent CPA⁺ reporting counterparts. One explanation for this particular finding is that those with ≥12 years of education may have been more likely than their counterparts with <12 years of education to have had opportunities to learn that their past abuse history was not shameful or their fault. Contrary to our expectation, older subjects

(≥30 years old) were less likely to be inconsistent reporters than younger subjects (18–29 years old) relative to consistent CPA⁺ reporters. It may be that older individuals have come to terms with their childhood physical abuse experience and feel more comfortable disclosing it. That sex and MFPV were only predictive of inconsistent CPA reporting when compared to consistent CPA⁺ reporters suggests these may be correlates of having experienced CPA rather than reporting practices. Indeed, others have found that male sex and MFPV are correlated with CPA. (McKinney, Caetano, Ramisetty-Mikler, & Nelson, 2009; Tjaden & Thoennes, 2000)

That those who report moderate or only one type of CPA were more likely to be inconsistent CPA reporters than those with severe or multiple types of CPA (relative to consistent CPA⁺ reporters) concurs with a study that demonstrated highly traumatic childhood events were more consistently reported than less traumatic childhood events (Costello et al., 1998). These results are also congruent with a study of child sexual abuse (CSA) which reported that subjects who endorsed more than one item on a four-item CSA scale were more than five times as likely to be consistent reporters of CSA than those who only endorsed one item (Aalsma et al., 2002). One plausible explanation for this finding is that simply asking about multiple types of abuse increases disclosure of CPA (Aalsma et al., 2002). Alternatively, those who experienced severe or multiple types of abuse may have a more reliable recollection of their childhood abuse experiences. Either way, our findings provide additional support for the notion that more traumatic childhood events may be more consistently reported than less traumatic ones.

Our study was based on a national population-based random sample study of couples and the relatively large sample size may have enabled us to detect predictors of inconsistent reporting that former smaller studies were unable to observe. To the extent that reporting practices are related to being married or cohabitating, our findings may not be representative of all US adults (both married and single). Given that a greater proportion of non-participants were 18–29 years of age or had <12 years of education and that these factors were positively associated with inconsistent reporting, our estimates of reliability may be higher than we would have observed had we been able to include the 974 survey participants who were not eligible for this study. The scope of our study was limited since we did not have data on adverse childhood experiences such as sexual abuse or neglect, however our measure of CPA utilized a multiple-question scale which likely minimized underreporting of child abuse (Aalsma et al., 2002). Whether chronicity or other characteristics of CPA influence reporting remains unknown since no data on these factors were available. The definition of moderate and severe CPA is not without misclassification. Some individuals who reported a history of having been hit with something harmful such as a belt buckle could have experienced severe physical abuse, though some would have considered themselves to have been beaten up and responded affirmatively to this question. Our mode of inquiry may also have influenced our findings: some studies have suggested that the intimate nature of in-person interviews builds rapport and facilitates disclosure of CPA (Martin, Anderson, Romans, Mullen, & O'Shea, 1993; Peters, Wyatt, & Finkelhor), while others have found that self-administered questionnaires improve disclosure (Dill, Chu, Grob, & Eisen, 1991; Martin et al., 1993). The scope of abusive acts and the age period in childhood about which respondents are asked varies across studies. Reliability of CPA may be influenced by these differences and studies that employ divergent data collection methods and definitions of CPA may observe results inconsistent with our own. Lastly, because inconsistent reporting of CPA was not rare, our odds ratios may be a biased estimate of the relative risk.

Our findings provide new information about the reliability of CPA based on adult self-report. Given the growing body of evidence suggesting fair to moderate reliability of CPA

and the underreporting of CPA, researchers should evaluate and report on the potential impact of misclassification of CPA in their studies. These results also offer insight as to characteristics of individuals likely to inconsistently report CPA. Future studies may find this information helpful when devising data collection tools to detect and evaluate respondents' history of CPA.

Acknowledgments

SOURCES OF FUNDING: This work was supported by a grant (#R37-AA10908) from the National Institute on Alcohol Abuse and Alcoholism to the University of Texas, School of Public Health.

References

- Aalsma MC, Zimet GD, Fortenberry JD, Blythe M, Orr DP. Reports of childhood sexual abuse by adolescents and young adults: Stability over time. *Journal of Sex Research* 2002;39(4):259–263. [PubMed: 12545408]
- Bensley LS, Van Eenwyk J, Simmons KW. Self-reported childhood sexual and physical abuse and adult HIV-risk behaviors and heavy drinking. *American Journal of Preventive Medicine* 2000;18(2):151–158. [PubMed: 10698246]
- Bensley LS, Van Eenwyk J, Simmons KW. Childhood family violence history and women's risk for intimate partner violence and poor health. *American Journal of Preventive Medicine* 2003;25(1):38–44. [PubMed: 12818308]
- Bernstein DP, Fink L, Handelsman L, Foote J, Lovejoy M, Wenzel K, et al. Initial reliability and validity of a new retrospective measure of child abuse and neglect. *The American Journal of Psychiatry* 1994;151(8):1132–1136. [PubMed: 8037246]
- Bifulco A, Brown GW, Lillie A, Jarvis J. Memories of childhood neglect and abuse: Corroboration in a series of sisters. *Journal of Child Psychology and Psychiatry and Allied Disciplines* 1997;38(3):365–374.
- Binder DA. On the variances of asymptotically normal estimators from complex surveys. *International Statistical Review/Revue Internationale de Statistique* 1983;51(3):279–292.
- Bremner JD. Does stress damage the brain? *Biological Psychiatry* 1999;45(7):797–805. [PubMed: 10202566]
- Caetano R, Clark CL. Trends in alcohol-related problems among whites, blacks, and Hispanics: 1984–1995. *Alcoholism: Clinical and Experimental Research* 1998;22(2):534–538.
- Caetano R, Field CA, Nelson S. Association between childhood physical abuse, exposure to parental violence and alcohol problems in adulthood. *Journal of Interpersonal Violence* 2003;18(3):240–257.
- Costello EJ, Angold A, March J, Fairbank J. Life events and post-traumatic stress: The development of a new measure for children and adolescents. *Psychological Medicine* 1998;28(6):1275–1288. [PubMed: 9854269]
- Cunradi CB, Caetano R, Clark CL, Schafer J. Alcohol-related problems and intimate partner violence among white, black and Hispanic couples in the US. *Alcoholism: Clinical and Experimental Research* 1999;23(9):1492–1501.
- Della Femina D, Yeager CA, Lewis DO. Child abuse: Adolescent records vs. adult recall. *Child Abuse & Neglect* 1990;14(2):227–231. [PubMed: 2340430]
- Dill DL, Chu JA, Grob MC, Eisen SV. The reliability of abuse history reports: A comparison of two inquiry formats. *Comprehensive Psychiatry* 1991;32(2):166–169. [PubMed: 2022116]
- Dube SR, Williamson DF, Thompson T, Felitti VJ, Anda RF. Assessing the reliability of retrospective reports of adverse childhood experiences among adult HMO members attending a primary care clinic. *Child Abuse Negl* 2004;28(7):729–737. [PubMed: 15261468]
- Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) study. *American Journal of Preventive Medicine* 1998;14(4):245–258. [PubMed: 9635069]

- Fergusson DM, Horwood LJ, Woodward LJ. The stability of child abuse reports: A longitudinal study of the reporting behaviour of young adults. *Psychological Medicine* 2000;30(3):529–544. [PubMed: 10883709]
- Fergusson DM, Lynskey MT. Physical punishment/maltreatment during childhood and adjustment in young adulthood. *Child Abuse & Neglect* 1997;21(7):617–630. [PubMed: 9238545]
- Fleiss, JL. Statistical methods for rates and proportions. 2. New York: John Wiley & Sons; 1981.
- Friedrich WN, Talley NJ, Panser L, Fett S, Zinsmeister AR. Concordance of reports of childhood abuse by adults. *Child Maltreatment* 1997;2(2):164–171.
- Hardt J, Rutter M. Validity of adult retrospective reports of adverse childhood experiences: Review of the evidence. *Journal of Child Psychology and Psychiatry, and Allied Disciplines* 2004;45(2):260–273.
- Martin J, Anderson J, Romans S, Mullen P, O'Shea M. Asking about child sexual abuse: Methodological implications of a two stage survey. *Child Abuse & Neglect* 1993;17(3):383–392. [PubMed: 8330225]
- McKinney CM, Caetano R, Ramisetty-Mikler S, Nelson S. Childhood family violence and male-to-female intimate partner violence: Findings from a national population-based study of couples. *Annals of Epidemiology* 2009;19(1):25–32. [PubMed: 18835525]
- Peters, SD.; Wyatt, GE.; Finkelhor, D. Prevalence. In: Finkelhor, D., editor. *A sourcebook on child sexual abuse*. Beverly Hills, CA: Sage; 1986. p. 15-59.
- Riddle KP, Aponte JF. The comprehensive childhood maltreatment inventory: Early development and reliability analyses. *Child Abuse & Neglect* 1999;23(11):1103–1115. [PubMed: 10604065]
- Stata Corporation. *Stata Statistical Software (Version 10.0)*. College Station, TX: Stata Corporation; 2007.
- Straus, MA. Measuring intrafamily conflict and violence: The Conflict Tactics (CT) scales. In: Straus, MA.; Gelles, RJ., editors. *Physical violence in American families: Risk factors and adaptations to violence in 8,145 families*. New Brunswick, NJ: Transaction; 1990. p. 29-47.
- Tjaden, P.; Thoennes, N. Research report No. NCJ 183781. Washington, DC: US Department of Justice, Office of Justice Programs, National Institute of Justice; 2000. Full report of the prevalence, incidence, and consequences of violence against women: Findings from the National Violence Against Women Survey.
- Widom CS, Shepard RL. Accuracy of adult recollections of childhood victimization: Part 1. Childhood physical abuse. *Psychological Assessment* 1996;8(4):412–421.
- Widom CS, Shepard RL. Accuracy of adult recollections of childhood victimization: Part 2. Childhood sexual abuse. *Psychological Assessment* 1997;9(1):34–46.
- Williams LM. Recall of childhood trauma: A prospective study of women's memories of child sexual abuse. *Journal of Consulting and Clinical Psychology* 1994;62(6):1167–1176. [PubMed: 7860814]
- Williams LM. Recovered memories of abuse in women with documented child sexual victimization histories. *Journal of Traumatic Stress* 1995;8(4):649–673. [PubMed: 8564277]
- Williams RL. A note on robust variance estimation for cluster-correlated data. *Biometrics* 2000;56(2):645–646. [PubMed: 10877330]

TABLE 1
Consistency of reporting child physical abuse across 1995 and 2000 and measures of agreement¹

	Inconsistent		Consistent – Abused		Consistent – Not Abused		Agreement	
	n	%	n	%	n	%	% Agreement	Kappa ²
Child abuse (yes/no)	631	27.5	1073	46.3	552	26.2	72.0	0.41
Among men	316	29.1	620	53.5	175	17.4	71.6	0.32
Among women	315	26.0	453	39.2	377	34.8	72.5	0.45
Severe child abuse (yes/no)	305	8.7	128	3.3	1823	88.0	86.5	0.38
During your childhood and adolescence, did your parents or the persons who raised you ever do any of the following:								
a. Hit you with something?	643	27.3	1048	46.0	565	26.7	71.5	0.40
b. Beat you up?	287	7.6	112	2.8	1857	89.5	87.3	0.37
c. Burn or scald you?	23	1.1	9	0.4	2224	98.5	99.0	0.43
d. Threaten you with a knife or gun?	32	0.9	14	0.3	2210	98.8	98.6	0.46
e. Use a knife or gun on you?	22	0.5	2	<0.1	2232	99.4	99.0	0.15

Note: n=unweighted count; %=weighted percent

¹ Because survey weights were used, percentages may not be the same as n/2256

² All kappas have a p-value<0.001

TABLE 2

Descriptive statistics for child physical abuse (CPA) by consistency of reporting across demographic and behavioral characteristics

	Inconsistent CPA (n=631)	Consistent CPA ⁺ (n=1073)	Consistent No CPA ⁻ (n=552)
	n ^I	%	%
Overall	2256	27.5	46.3
CPA reported at either survey	1704	37.3	62.7
Sex			
Male	1111	29.1	53.5
Female	1145	26.0	39.2
Age (in years)			
18–29	461	33.9	43.2
30–39	693	29.5	49.0
40–49	477	20.6	55.4
≥50	616	27.6	40.0
Ethnicity			
White, non-Hispanic	893	27.0	45.6
Black, non-Hispanic	479	26.7	55.9
Hispanic, any race	834	26.9	49.1
Other, non-Hispanic	50	43.6	37.6
Education			
<12 years	626	33.9	35.8
=12 years	785	27.0	44.7
>12 years	841	26.0	50.9
Employment			
Employed	1515	26.1	50.0
Unemployed	110	36.5	39.5
Retired	180	34.1	39.6
Homemaker/Other	449	27.3	36.6
Income			
<\$10,000	308	28.9	43.2
\$10–20,000	419	30.0	39.0
\$20–30,000	385	30.0	40.6
\$30–40,000	292	26.7	48.2
≥\$40,000	697	26.4	49.9
Alcohol-related problems			
Yes	253	22.2	62.0
No	2003	28.1	44.7
Binge drinking			
Yes	563	27.7	56.0
No	1692	27.4	43.1
Illicit drug use			

	Inconsistent CPA (n=631)		Consistent CPA ⁺ (n=1073)	Consistent No CPA ⁻ (n=552)
	n ^I	%	%	%
Yes	91	27.6	60.7	11.7
No	2126	27.3	46.3	26.4
Male-to-female partner violence				
Yes	372	25.7	60.2	14.0
No	1876	27.6	44.5	28.0
Female-to-male partner violence				
Yes	479	25.6	60.6	13.9
No	1766	28.0	43.5	28.5
Severity of CPA (among those who reported CPA at either survey)				
Moderate abuse	1382	39.1	60.9	
Severe abuse	322	23.7	76.3	
Number of types of CPA (among those who reported CPA at either survey)				
One	1406	42.2	57.8	
Multiple	291	12.2	87.8	

Note: n=unweighted count; %= row weighted percent

^I Because survey weights were used, percentages may not be the same as n/2256

TABLE 3

Estimates of the prevalence of child physical abuse by sex using different assessment criteria

Criterion:	Males (n=1111)			Females (n=1145)			Total (n=2256)		
	None	Moderate	Severe	None	Moderate	Severe	None	Moderate	Severe
1995 report	32.4	61.4	6.2	47.4	43.9	8.7	40.0	52.6	7.5
2000 report	31.5	59.4	9.1	48.3	45.2	6.6	39.9	52.2	7.8
1995 or 2000	17.4	69.8	12.8	34.8	54.0	11.2	26.2	61.8	12.0

TABLE 4

Characteristics predictive of inconsistent CPA reporting compared to consistent CPA⁺ reporting and consistent CPA⁻ reporting

	OR (95% CI)	p-value
Inconsistent CPA reporters vs. consistent CPA ⁺ reporters		
Age group (in years)		
18–29	1.0	0.006
30–39	0.7 (0.5, 1.0)	
40–49	0.4 (0.3, 0.7)	
≥50	0.7 (0.4, 1.1)	
Race/ethnicity		
White	1.0	0.04
Black	0.7 (0.5, 1.0)	
Hispanic	0.9 (0.6, 1.2)	
Other	2.5 (0.9, 6.6)	
Education		
<12 years	1.9 (1.1, 3.6)	0.003
=12 years	1.0	
>12 years	0.8 (0.6, 1.1)	
Alcohol-related problems		
No	1.6 (1.0, 2.5)	0.06
Yes	1.0	
Female-to-male partner violence		
No	1.0	0.01
Yes	0.6 (0.4, 0.9)	
Number of types of abuse		
1	3.5 (2.0, 6.4)	<0.001
≥2	1.0	
Inconsistent CPA reporters vs. consistent CPA [−] reporters		
Sex		
Male	2.5 (1.8, 3.6)	<0.001
Female	1.0	
Age group (in years)		
18–29	1.0	0.03
30–39	0.9 (0.5, 1.6)	
40–49	0.5 (0.3, 1.1)	
≥50	0.5 (0.3, 1.0)	
Male-to-female partner violence		
No	1.0	0.06
Yes	1.7 (1.0, 3.0)	