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Self-reported and agency-notified child sexual abuse in a population-based birth cohort

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Abstract

Child sexual abuse (CSA) has been associated with many adverse psychiatric outcomes. However, most studies have relied on retrospective self-report of exposure to CSA. We set out to investigate the incidence of CSA in the same birth cohort using both retrospective self-report and prospective government agency notification, and examine the psychological outcomes in young adulthood. The primary outcomes were measures of DSM-IV diagnoses (CIDI-Auto) at age 21. The 21-year retrospective CSA questions were completed by 3739 participants. CSA was self-reported by 19.3% of males and 30.6% of females. After adjustment for potential confounders, both self-reported and agency-notified CSA were associated with increased odds of lifetime major depressive disorder (MDD), anxiety disorders, and posttraumatic stress disorder (PTSD). For the first time in a birth cohort, this study has shown the disparity between the incidence of CSA when measured by self-report and government agency notification. Despite this discrepancy, adverse psychiatric outcomes are seen when CSA is defined using either method.

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Contributors

Ryan Mills (corresponding author) planned the research questions and analyses, and was primary author of the manuscript. **Steve Kisely** performed the analyses and assisted with writing. **Rosa Alati** assisted with planning the study and writing the paper. **Lane Strathearn** performed the original child protection data collection and linkage, and reviewed the manuscript. **Jake M. Najman** directed all phases of MUSP data collection, provided guidance in formulation of the research question, and assisted with writing.

Keywords

child maltreatment; sexual abuse; epidemiology; posttraumatic stress disorder; mood/anxiety disorders

Introduction

Child sexual abuse (CSA) has been associated with many adverse outcomes in adulthood such as depression, posttraumatic stress disorder (PTSD), physical health problems, drug use, risky sexual behaviour, and suicidality (Cutajar et al., 2010, Gilbert et al., 2009, Tebbutt et al., 1997). However, there are a number of important methodological variations behind these findings. Among the most crucial is the distinction between cross-sectional self-report studies, in which respondents recall sexual abuse that may have occurred years or even decades prior, and prospective studies that utilise contemporaneous government agency records to define the exposure to abuse. Another important distinction is between studies using a clinical population (e.g. patients attending a mental health clinic) and those addressing a representative population-based sample (Widom et al., 2004).

Retrospective self-report has the advantage of being inexpensive and convenient. The confidentiality and anonymity of recall-based questionnaires also helps address concerns that child sexual abuse is a largely hidden phenomenon (Hardt and Rutter, 2004). However, there is a small but important literature on the accuracy of retrospective recall of childhood abuse that demands attention. Hardt and Rutter (2004) systematically reviewed the literature about self-report of childhood maltreatment. They found that approximately one third of adults who experience significant, agency-substantiated abuse as children do not appear to remember it in adulthood (Widom et al., 1999, Williams, 1994). Furthermore, subjects' self-report of the occurrence of childhood abuse does not remain stable throughout their adulthood (Della Femina et al., 1990, Dube et al., 2004), or can change from childhood to adulthood (Banyard et al., 2001). There can be surprising discrepancies between the recall of siblings who were exposed to the same maltreatment (Bifulco et al., 1997). Reasons for inaccurate disclosure in self-report interviews can include embarrassment, defence against negative emotions, and protection of the abuser (Della Femina et al., 1990). Adults with no or minimal mental health issues tend to under-report agency-documented adverse childhood experiences, while those with psychological problems are more likely to retrospectively report them (Cohen and Cohen, 1984).

Findings such as these call into question the validity of apparent associations between child maltreatment and later psychosocial problems that have been derived from retrospective self-report studies, even where a number of such studies have concurred (Widom et al., 2004). The use of child maltreatment data obtained from statutory child protection authorities confers the potential benefit of a contemporaneous, impartial, third party assessment of maltreatment including sexual abuse. However, there are also questions about the accuracy of this method (McGee et al., 1995). The major disadvantage of reliance on agency data is that this data may be relatively insensitive, as only a proportion of all cases of child maltreatment are reported to child protection authorities. This may be particularly

relevant in the case of child sexual abuse: an Australian cross sectional self-report study of child sexual abuse suggested a lifetime incidence of approximately 15% in boys and 30% in girls (Dunne et al., 2003), whereas in a prospective birth cohort just over 2% of subjects had been reported to the authorities as suspected cases of sexual abuse (Mills et al., 2014).

Therefore, one expects that reliance on agency data will tend to result in the misclassification of a proportion of sexually abused children into the non-maltreated group (Widom et al., 2004). Additionally, government agency outcome data tends to lack the precision that can be obtained from cross sectional questionnaires, unless researchers engage in detailed coding from the original case notes. For example, the subjects notified to, or substantiated by, a government agency as cases of sexual abuse could cover a very diverse range of inappropriate sexual exposures, from risk alone (e.g. living in a home with a known child sexual offender), to violent sexual assault. Another issue to consider when using prospective agency reports of child sexual abuse is that identified cases may subsequently receive intervention that could alter the longer term psychological outcome, while cases that do not come to the attention of authorities may have more severe consequences due to the secrecy and potential chronicity (Kendall-Tackett and Becker-Blease, 2004).

Very few studies have had the ability to compare the long-term outcome of retrospectively self-reported child sexual abuse with that following prospectively documented notifications of sexual abuse. One such study was by Raphael et al (2001), who followed 676 subjects with court-documented child maltreatment (including sexual abuse) histories and 520 matched controls. The study found that retrospectively reported child maltreatment, including sexual abuse, was associated with unexplained pain symptoms in adulthood. However, prospectively documented maltreatment was not. While this study raised important questions about the validity of studies using retrospective self-report of maltreatment, it was in the context of a deliberately selected high-risk population. Other major birth cohorts that have addressed outcomes following CSA have either relied on adult self-report (Boden et al., 2007, van Roode et al., 2009), or agency records of general maltreatment without specifically defining CSA exposure (Sidebotham and Heron, 2006).

Thus, there remain many uncertainties about the validity of, and factors influencing, adult recollection of childhood sexual abuse that have yet to be explored outside of socially and clinically high-risk groups. This present study is the first to our knowledge that has sought to use data linkage between a large prospective birth cohort and a state child protection agency to address two major questions about child sexual abuse. First, what is the relationship between adult self-report of CSA and contemporaneous government agency notification? Second, what are the psychological outcomes in adulthood following CSA as defined by self-report, when compared with agency-notified CSA?

Materials and Methods

Data sources

The Mater-University of Queensland Study of Pregnancy (MUSP) is a longitudinal birth cohort study. Between 1981 and 1983, 8556 consecutive pregnant women attending the Mater Misericordiae Mothers' Hospital for their first prenatal visit were invited to

participate (Keeping et al., 1989). The final cohort numbered 7223 mother and infant pairs, which included only consenting participants who delivered live, singleton infants at the study hospital. At the first prenatal visit, the women completed a detailed questionnaire covering topics such as demographic background, personal health, and their feelings about the pregnancy. The mothers and children were further assessed when the children were aged 3 to 5 days, 6 months, 5 years, 14 years, and 21 years. The follow-up rate of the children for the main questionnaire at 21 years was 52.4%.

Child sexual abuse measures

The CSA self-report measure was obtained at the 21-year follow-up. The self-report questionnaire was based on that of Fleming (1997), which was in turn a modification of Wyatt's (1985). The same questionnaire has also been used by Mamun et al (2007) and Dunne et al (2003). The young adult participants were asked "Did any of the following events happen to you before you were 16?" Five non-exclusive abuse scenarios were offered. Those categorised as non-penetrative child sexual abuse were: "Someone exposed themselves or masturbated in front of you"; "Someone more than 5 years older than you kissed or fondled your breasts or genitals"; and/or "You touched or masturbated the genitals of someone more than 5 years older than you". Penetrative child sexual abuse was indicated by two statements: "Someone more than 5 years older than you had sexual intercourse with you"; and "Someone more than 5 years older than you had oral sex with you".

The government agency CSA data had been recorded prospectively by the state child protection agency, the Department of Families, Youth and Community Care (DFYCC). This data was obtained from the records of the DFYCC in September 2000. The child maltreatment data was linked anonymously to the MUSP longitudinal data using an identification number, as described previously (Strathearn et al., 2009). Each time DFYCC received concerning information about possible child maltreatment, a child protection notification was recorded and an investigation commenced. If the investigation confirmed that abuse or neglect had occurred, or there was an unacceptable risk that it would occur, the outcome was recorded as "Substantiated" or "Substantiated, at risk", along with the type or types of maltreatment – physical, sexual or emotional abuse, and neglect - that were substantiated. If the occurrence, or unacceptable risk, of maltreatment was not confirmed on investigation, an outcome of "Unsubstantiated" was assigned. Some notifications were unable to be investigated, e.g. if the family moved interstate, and thus were assigned the outcome of "Unable to Complete".

The exposure to agency-recorded child sexual abuse in this study is defined by the occurrence of one or more notifications to DFYCC that reached the threshold for formal investigation for suspected child sexual abuse prior to September 2000, at which time the youngest members of the cohort were 16.5 years old. As a secondary analysis, the outcomes were also examined after narrowing the definition of exposure to only include agency-substantiated cases of CSA.

Outcome measures

Psychological outcomes at age 21 were measured using the WHO Composite International Diagnostic Interview (CIDI), a diagnostic interview schedule based on DSM-IV criteria. Administration to the MUSP cohort was by the CIDI-Auto, a computerised protocol that has been shown to perform satisfactorily when compared with personal interview (Peters et al., 1998). The outcomes examined were major depressive disorder, any anxiety disorder – including generalised anxiety disorder, panic disorder, agoraphobia, social phobia, and specific phobias – and PTSD. Each outcome was examined both for both lifetime symptoms, and recent symptoms (within the last month).

Potential confounding variables

Sociodemographic variables were identified as potential confounders between CSA (self-reported or agency-recorded) and adverse psychological outcomes at the 21-year follow-up. These were variables were: gender of the child subject; parental race; maternal age; mother's relationship status; family income at the time of study entry (first prenatal visit), and maternal education status at study entry (Sidebotham and Heron, 2006). Additional potential mediating or modifying variables, collected at the 21 year follow-up, were added to the adjustment in a sensitivity analysis: receipt of social welfare at 21 year follow-up; the young person's educational achievement; and young person's marital status. A further sensitivity analysis of the lifetime outcomes added an additional adjustment for coexisting agency-substantiated physical abuse, emotional abuse, or neglect.

Statistical analysis

To examine the degree of agreement between self-reported and agency-notified CSA, a cross-tabulation was performed. Self-reported and agency-notified CSA were each examined for their association with the DSM-IV psychiatric outcome variables as measured by CIDI-Auto. Multivariable logistic regression analysis was used to control for the known or suspected confounding and moderating variables as noted above. Missing data was handled by listwise deletion. In addition to the sensitivity analyses already noted above, a propensity analysis, adding a variable representing the baseline confounders across the whole cohort at risk of exposure (n=7214 for agency-notified CSA status, and n=3739 for self-report CSA data) was performed to identify possible effects of differential attrition on the associations with psychiatric outcomes, given that the CIDI-Auto was not administered to the entire remaining cohort at 21 (Goodman and Blum, 1996).

All data analysis was undertaken using SPSS (IBM, New York). The study was approved by the University of Queensland Behavioural and Social Sciences Ethical Review Committee.

Results

Of the 7223 mother and child dyads in the original cohort, the statutory agency child protection history was available for 7214. For eight pairs, there was insufficient demographic data to positively identify the child protection record. One subject was inadvertently omitted from the child protection search. The proportion of children completing the main questionnaire at the 21-year follow-up was 52.4% (3778 of 7214), of

whom 3739 (51.8% of cohort) answered the sexual abuse self-report questions. Of those answering the sexual abuse questions, 2508 (67%) completed the CIDI-Auto interview. Loss to follow-up was greater among subjects with markers of socioeconomic and other forms of disadvantage. Further, there was increased attrition among families who had been subject to reported child maltreatment (Table 1).

Self-reported versus agency reported CSA

The number of young adults self-reporting sexual abuse (penetrative or non-penetrative) prior to the age of 16 was 943 (25.2% of available cohort) – 19.3% of males (8.0% penetrative, 11.3% non-penetrative) and 30.6% of females (10.3% penetrative, 20.2% non-penetrative). The total number of youth with agency-recorded histories of notified child sexual abuse was 94 (2.5% of 21-year cohort) – 54 (57.4%) of these subjects had self-reported a history of child sexual abuse in the questionnaire, while 40 (42.6%) did not disclose CSA in the 21-year questionnaire. The association between self-reporting and agency-notification was statistically significant: youth who self-reported CSA had 4.2 times the odds of having been reported to DFYCC as a suspected CSA case (OR 4.2, 95% CI 2.8 to 6.3).

When the analysis was narrowed to only include agency-reported cases that were substantiated by the authorities, the number of youth who were substantiated cases was 54 (1.4% of cohort, 56.4% of notified cases). The association between agency-substantiated CSA and self-report was very similar to that for agency-reported CSA: 60.4% (n=32) of substantiated cases self-reported CSA, while 39.6% (n=21) did not. Youth who self-reported CSA had 4.6 times the odds of having been substantiated as a case of CSA (OR 4.6, 95% CI 2.7 to 8.1).

Major depressive disorder

Self-reported CSA was associated with increased odds of a lifetime history of major depressive disorder (MDD) after adjustment for the potential confounders listed above (OR 2.05, 95% CI 1.64 to 2.57). The association was significant for both self-reported penetrative and non-penetrative CSA (OR 1.45 and 2.03 respectively – Table 2). Subjects notified to the agency for suspected sexual abuse also had an increased odds of lifetime MDD after adjustment (OR 1.88, 95% CI 1.10 to 3.21) – a similar finding occurred when the association was analysed using only substantiated cases (Table 2). Restricting the MDD diagnosis to the previous month resulted in comparable point estimates of association, but only the association with substantiated CSA was statistically significant (Table 2).

Anxiety disorders

Self-reported child sexual abuse was associated with increased odds of lifetime anxiety disorder after adjustment (OR 2.66, 95% CI 2.12 to 3.28), including both penetrative and non-penetrative CSA (Table 3). Subjects notified as suspected cases of sexual abuse also had an increase in lifetime anxiety disorders after adjustment (OR 1.75, 95% CI 1.04 to 2.95). There was only a minor difference in the odds ratio (OR 1.51) when narrowing to cases of substantiated CSA, but the association was no longer significant (Table 3). When the anxiety disorder diagnoses were narrowed to the previous month, there remained more

than double the odds of anxiety disorders in subjects exposed to self-reported CSA (OR 2.74, 95% CI 2.12 to 3.55). Agency-notified or substantiated CSA was not associated with anxiety disorders within the last month (Table 3).

PTSD

Subjects who self-reported child sexual abuse had much higher odds of PTSD than their non-disclosing peers: for lifetime PTSD the odds ratio was 4.90 after adjustment for potential confounders (95% CI 3.46 to 6.96). There was a similar finding for PTSD within the last month (OR 5.81, 95% CI 3.42 to 9.88). There was no significant difference in outcome between self-reported penetrative and non-penetrative CSA. Agency-notified sexual abuse was associated after adjustment with both lifetime (OR 4.34, 95% CI 2.37 to 7.95) and last-month (OR 5.44, 95% CI 2.44 to 12.12) PTSD, a finding that remained after narrowing to substantiated cases (Table 4).

Sensitivity analyses

Addition of further covariates collected at the 21-year follow-up – receipt of social welfare, young person's educational achievement, and young person's marital status – resulted in only minor weakening of odds ratios across the three groups of psychological outcomes. The only associations that were no longer statistically significant were between substantiated CSA and last-month MDD, and notified CSA and lifetime anxiety (Tables 5, 6 and 7 in supplementary material). With additional adjustment for agency-substantiated physical abuse, emotional abuse, or neglect, the statistically significant outcomes for the lifetime DSM-IV outcomes (MDD, anxiety, and PTSD) were maintained with the exception of the association of DSM-IV MDD with agency-notified and agency-substantiated CSA (Table 8 in supplementary material).

The addition of a propensity score to the model, taking into account baseline covariates across the entire at-risk cohort, to the model did not result in changes to any of the statistically significant associations, with the exception of the association between notified CSA and lifetime anxiety disorders (Table 9 in supplementary material).

Discussion

This study is the first to compare retrospective self-reports of child sexual abuse with prospectively recorded government agency notifications in a population-based sample. There are several important findings. First, it confirmed the widely held assumption that the vast majority of cases of child sexual abuse go unreported to the authorities – in this study 25.2% of a large birth cohort reported in adulthood that they had experienced child sexual abuse, but only 5.7% of these cases – and 2.5% of the total cohort – had come to the attention of the relevant statutory authority in the form of a notification of suspected sexual abuse.

The incidence of self-reported CSA among men and women in this study was similar to those found in a previous population-based Australian survey using the same thresholds (Dunne et al., 2003), and also with the internationally pooled rate of noncontact CSA in a recent meta-analysis (Barth et al., 2013). Meta-analysis of international data suggests that

Australia has among the highest rates of self-reported CSA in the world (Pereda et al., 2009). The reasons for this are unclear, but one may speculate that it is due at least in part to a strong community awareness of CSA and a relatively supportive environment for adults who disclose. Another factor that may contribute to varying self-reported CSA rates is the age cut-off, with published upper age ranges from 12 to 18. The age of 16 used in this study is in the mid-range of published studies (Pereda et al., 2009).

Under-reporting of child sexual abuse to the authorities may occur for a number of reasons. The outward signs of CSA are generally negligible, in contrast to child neglect for example, in which poor hygiene, lack of supervision, or undernutrition may be observable to community members (Polonko, 2006). Most CSA offenders are known to the victim, and ensuring the child's secrecy is often part of the grooming process. Further, the child may have feelings of guilt and shame that are a further barrier to making a disclosure to a trusted adult.

Second, the study provides further data about recall, or alternatively failure to disclose, in adult survivors of agency-documented CSA. As expected, in this study the group who had experienced agency-recorded CSA were much more likely to self-report CSA in young adulthood. However, as has been previously noted in clinical or high risk samples, there remains a group who experienced notified, and even substantiated, exposure to CSA that make no disclosure of the same when asked as adults. In this study, 39.6% of subjects who had been subject to substantiated notifications of child sexual abuse failed to recall any child sexual abuse when asked in adulthood (age 21). Reasons for this that have been suggested by other authors range from genuine loss of memory of early childhood events, to conscious or unconscious suppression of memories as a defensive psychological mechanism (Kendall-Tackett and Becker-Blease, 2004). Specifically in relation to the present study, a further possibility is that some of the cases of notified, or even substantiated, child sexual abuse may have been reported to the agency primarily on the basis of unacceptable exposure to risk of CSA – for example, children living in the same household as a known child sex offender.

Third, this study utilised a unique opportunity to examine in adulthood a number of frequently reported psychological associations of CSA using both agency-notified and self-reported CSA as the independent variable. Both agency-notified and self-reported CSA were independently associated with MDD, anxiety disorders and PTSD. For most outcomes, the associations with psychiatric diagnoses were slightly stronger with self-reported CSA than with agency-notified CSA, challenging the assumption that the notified group would represent the more severe cases of CSA. However, as suggested by Kendall-Tackett and Becker-Blease (2004), it may even be the case that un-notified cases are more severe because the secrecy may result in a more prolonged period of abuse. Similarly, children subject to notification of CSA may be more likely to receive post-abuse counselling that alters their long-term psychological outcome. Similar reasoning could be applied to the somewhat unexpected finding that the point estimates of association were slightly stronger – albeit not significantly so – for nonpenetrative than penetrative CSA across all outcomes.

A striking finding of this study was the strong and consistent independent association between both self-reported and agency-notified CSA and post-traumatic stress disorder (PTSD). Across all measures of exposure – penetrative and non-penetrative CSA, agency-notified CSA, and agency-substantiated CSA – the odds ratios for PTSD after adjustment were significant, ranging from 2.7 to 5.5. These results suggest that while PTSD is a less common condition than MDD or broadly categorised anxiety disorders, it has a particular relevance as a relatively specific outcome following CSA. This is a widely reported within the literature on PTSD and CSA, but is almost completely based on cross-sectional self-report studies (Hetzel and McCanne, 2005, Paolucci et al., 2001). Our present study is the first to our knowledge to confirm this using both self-report and prospective government agency data in a longitudinal birth cohort.

A number of limitations of this study require acknowledgement. The first is attrition from the study. The overall follow-up rate of the youth in the MUSP at 21 years, which included the self-report CSA questions, was 52.4% (3778 subjects). While this is acceptable for a long-term birth cohort, the CIDI-Auto DSM-IV outcomes could only be assessed in two thirds (67% – 2508 subjects) of that group. Attrition was greater among those experiencing social disadvantage, and those exposed to agency-notified maltreatment including CSA. Studies of loss to follow up in other birth cohorts suggest that those lost to follow up broadly have the outcomes that would be expected given their baseline characteristics (Wolke et al., 2009). Analysis of the MUSP cohort over three decades, and with various statistical methods, has supported this notion (Najman et al., 2015). Furthermore, the propensity analysis in this study resulted in only minimal adjustments to the strength of associations. Therefore, while attrition remains a limitation for the present study, we are confident that the results represent genuine associations between CSA and adverse psychological outcomes.

A second limitation is that the CSA data, both from the self-report and government agency, lacks details that would be of interest for further study, particularly in relation to the chronicity and severity of CSA, and the relationship to the perpetrator. The study is also unable to confirm that the CSA events recorded either by the agency or by self-report are the specific cause of each subjects' CIDI diagnosis of PTSD – we cannot rule out the co-occurrence of other traumatic life events, although have attempted to at least control for other forms of agency-recorded child maltreatment in sensitivity analysis. Finally, it needs to be acknowledged that the anxiety disorder categorisation in this study is relatively broad, spanning both phobias and generalised anxiety disorder, such that differential associations between CSA and specific anxiety disorders may have been masked.

Some important questions arise from these and previous findings regarding the nature and role of memory in the adverse psychological outcomes of those reporting CSA as adults. Answering these questions satisfactorily will require further study. They include whether the recollection of CSA is psychologically protective, or alternatively harmful. A further important question is whether adults with a predisposition to mental health problems are more likely to have retained the memory of CSA through the intervening years.

Conclusions

This large birth cohort study has demonstrated the disparity in the incidence of CSA when measured by retrospective self-report, when compared with prospective government agency documentation. Both retrospectively recalled CSA and agency-recorded notification of CSA are associated with adverse psychiatric outcomes in adulthood, with high odds ratios of PTSD being a particularly notable finding. The findings support the allocation of resources to prevention and contemporaneous identification of CSA, and further research to delineate the role of memory in the adverse CSA outcomes.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Highlights

- Most studies of child sexual abuse (CSA) rely on retrospective self-report of CSA.
- This birth cohort study also had prospective data on government CSA notification.
- Most CSA that was self-reported in adulthood had not been notified to the authorities.
- Adverse psychiatric outcomes occurred when the CSA exposure was defined either way.

Table 1
 Characteristics of birth cohort – participation in 21-year follow-up (main youth questionnaire).

Characteristic	N (of 7214)	Completed questionnaire (%)	χ^2, p	Maltreatment notification (%)	χ^2, p
<i>Maltreatment notification</i>					
No notifications	6425	54.4	92.3, <0.001	0	N/A
Any notification	789	36.2		100.0	
<i>Gender</i>					
Male	3745	47.8	65.3, <0.001	10.1	5.3, 0.021
Female	3469	57.3		11.8	
<i>Race</i>					
White	6250	54.3	91.4, <0.001	10.7	23.5, <0.001
Aboriginal-Islander	444	32.0		17.6	
Asian	307	44.3		7.8	
<i>Maternal age at birth of child</i>					
13–19	993	41.1	59.4, <0.001	20.5	
20–34	5865	54.0		9.6	113.1, <0.001
35+	356	56.2		6.2	
<i>Relationship status at birth of child</i>					
Not in relationship	991	39.3	79.2, <0.001	20.9	116.8, <0.001
Living together	6223	54.5		9.4	
<i>Family income (annual) prior to birth</i>					
≤\$10399	2304	46.0	71.3, <0.001	16.1	106.8, <0.001
>\$10400	4436	56.8		7.9	
<i>Maternal education status in pregnancy</i>					
Incomplete high school	1304	45.9	49.4, <0.001	19.1	
Completed high school	4601	52.2		10.0	132.8, <0.001
Post high school	1256	59.8		5.4	

Table 2

Major depressive disorder odds ratios (CIDI-Auto, DSM-IV) according to self-reported CSA and agency-documented CSA notification.

	Major depressive disorder (lifetime) adjusted OR ^I (n=2304) (95%CI)		Major depressive disorder (last month) adjusted OR ^I (n=2304) (95% CI)	
		<i>p</i>		<i>p</i>
No self-reported CSA	1.0 (prevalence = 16.1%)		1.0 (prevalence = 2.1%)	
Any self-reported CSA	2.05 (1.64, 2.57)	<0.001	1.65 (0.96, 2.83)	0.071
Penetrative	1.45 (1.23, 1.70)	<0.001	1.34 (0.91, 1.96)	0.137
Non-penetrative	2.02 (1.55, 2.62)	<0.001	1.53 (0.81, 2.88)	0.198
No notified CSA	1.0		1.0	
Notified CSA	1.88 (1.10, 3.21)	0.02	1.91 (0.65, 5.67)	0.242
Substantiated CSA	2.20 (1.12, 4.31)	0.021	3.36 (1.09, 10.32)	0.035

^I Variables used in adjustment: gender, parental race, maternal age, maternal relationship status, family income, and maternal education.

Table 3

Any anxiety disorder odds ratios (CIDI-Auto, DSM-IV) according to self-reported CSA and agency-documented CSA notification.

	Anxiety disorder (lifetime) - Adjusted OR ^I (n=2298) (95% CI)		Anxiety disorder (last month) - Adjusted OR ^I (n=2298) (95% CI)	
		<i>p</i>		<i>p</i>
No self-reported CSA	1.0 (prevalence = 19.9%)		1.0 (prevalence = 9.1%)	
Any self-reported CSA	2.66 (2.12, 3.28)	<0.001	2.74 (2.12, 3.55)	<0.001
Penetrative	1.81 (1.55, 2.11)	<0.001	1.69 (1.41, 2.03)	<0.001
Non-penetrative	2.33 (1.82, 2.99)	<0.001	2.62 (1.94, 3.54)	<0.001
No notified CSA	1.0		1.0	
Notified CSA	1.75 (1.04, 2.95)	0.034	1.60 (0.88, 2.88)	0.121
Substantiated CSA	1.51 (0.78, 2.93)	0.225	1.44 (0.68, 3.06)	0.344

^I Variables used in adjustment: gender, parental race, maternal age, maternal relationship status, family income, and maternal education.

Table 4

PTSD odds ratios (CIDI-Auto, DSM-IV) according to self-reported CSA and agency-documented CSA notification

	PTSD (lifetime) – Adjusted OR ^I (n=2292) (95% CI)		PTSD (last month) – Adjusted OR (n=2292) (95% CI)	
		<i>p</i>		<i>p</i>
No self-reported CSA	1.0 (prevalence = 3.2%)		1.0 (prevalence = 1.2%)	
Any self-reported CSA	4.90 (3.46, 6.96)	<0.001	5.81 (3.42, 9.88)	<0.001
Penetrative	2.71 (2.18, 3.37)	<0.001	3.05 (2.24, 4.14)	<0.001
Non-penetrative	3.70 (2.45, 5.59)	<0.001	3.95 (2.08, 7.47)	<0.001
No notified CSA	1.0		1.0	
Notified CSA	4.34 (2.37, 7.95)	<0.001	5.44 (2.44, 12.12)	<0.001
Substantiated CSA	3.41 (1.57, 7.40)	0.002	4.24 (1.52, 11.78)	0.006

^I Variables used in adjustment: gender, parental race, maternal age, maternal relationship status, family income, and maternal education.