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Childhood Abuse and Suicidal Ideation in a Cohort of Pregnant Peruvian Women

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Abstract

Background—Childhood abuse is a major global and public health problem associated with a myriad of adverse outcomes across the life course. Suicide is one of the leading causes of mortality during the perinatal period. However, few studies have assessed the relationship between experiences of childhood abuse and suicidal ideation in pregnancy.

Objective—To examine the association between exposure to childhood abuse and suicidal ideation among pregnant women.

Study Design—A cross-sectional study was conducted among 2,964 pregnant women attending prenatal clinics, in Lima, Peru. Childhood abuse was assessed using the Childhood Physical and Sexual Abuse Questionnaire. Depression and suicidal ideation were assessed using the Patient Health Questionnaire-9 scale. Logistic regression procedures were performed to estimate adjusted odds ratios and 95% confidence intervals adjusted for potential confounders.

Results—Overall, the prevalence of childhood abuse in this cohort was 71.8% and antepartum suicidal ideation was 15.8%. The prevalence of antepartum suicidal ideation was higher among women who reported experiencing any childhood abuse compared to those reporting none (89.3% vs. 10.7%, $P<0.0001$). After adjusting for potential confounders, including antepartum depression and lifetime intimate partner violence, those with history of any childhood abuse had a 2.9-fold (adjusted odds ratios; 95% confidence intervals: 2.12-3.97) increased odds of reporting suicidal ideation. Women who experienced both physical and sexual childhood abuse had much higher

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odds of suicidal ideation (adjusted odds ratios =4.04; 95% confidence intervals: 2.88-5.68). Women who experienced any childhood abuse and reported depression had 3.44-fold (adjusted odds ratios; 95% confidence intervals: 1.84-6.43) increased odds of suicidal ideation compared with depressed women with no history of childhood abuse. Finally, the odds of suicidal ideation increased with increased number of childhood abuse events experienced (P-value for trend<0.001).

Conclusion—Maternal history of childhood abuse was associated with increased odds of antepartum suicidal ideation. It is important for clinicians to be aware of the potential increased risk of suicidal behaviors among pregnant women with a history of childhood physical and sexual abuse.

Keywords

childhood abuse; depression; suicidal ideation; pregnant women

Introduction

Approximately 275 million children per year suffer acts of violence in their own home [1]. As many as 40 million children under 15 years of age in Latin America and the Caribbean countries have experienced violence, abuse, and neglect [1]. Childhood abuse includes all forms of physical and psychological maltreatment that pose harm to a child's health, development or dignity, and include physical abuse and sexual abuse [2]. Notably, childhood abuse is rarely a solitary incident rather, it appears to co-occur with one or more types of childhood maltreatment (i.e., physical neglect, emotional neglect, and emotional abuse) [3, 4]. Childhood abuse has been reported to be associated with adverse psychiatric and physical health conditions in adulthood [567-10]. In pregnant women, exposure to childhood abuse has been associated with psychiatric disorders [611], sleep disturbances [12], health risk behaviors [13], and unfavorable pregnancy outcomes [14]. However, few studies [15] have assessed the relationship between experiences of childhood abuse and suicidal ideation in pregnancy. Suicidal ideation and suicide attempt during pregnancy are associated with a myriad of adverse maternal and infant outcomes including psychiatric disorders such as depression, fetal growth restriction, premature labor, and cesarean delivery [111617, 1819]. Notably, an emerging body of evidence now implicates suicidal ideation as a precursor and important predictor of later suicide attempts and completions [20]. Given that suicide is one of the leading causes of mortality during the perinatal period [21, 2223, 24] and given the gap in the existing literature, we conducted the present analysis, in a large pregnancy cohort, to assess the extent to which, if at all, women's history of physical and/or sexual abuse in childhood is associated with antepartum suicidal ideation. Documentation of associations of childhood abuse with suicidal ideation in this population may have important clinical implications insofar as alerting health care providers to the need for evaluating and screening women for past abuse.

Materials and Methods

Participants in this cross-sectional study were women who received prenatal care at the Instituto Nacional Materno Perinatal (INMP) from February 2012 to March 2014 and who enrolled in the ongoing Pregnancy Outcomes, Maternal and Infant Study (PrOMIS) cohort

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study. The INMP is the main reference establishment for maternal and perinatal care operated by the Ministry of Health (MINSA) of the Peruvian government. Eligible participants were pregnant women who were 18–49 years of age and who were under 16 weeks of gestational age during the prenatal care visit. Participants were ineligible if they were younger than 18 years of age, did not speak and read Spanish, or had completed more than 16 weeks of gestation. Details of the study setting and data collection procedures have been described previously [11]. Briefly, each participant was interviewed, in a private setting, by trained research personnel using a structured questionnaire. The questionnaire was used to elicit information regarding maternal socio-demographic, lifestyle characteristics, medical and reproductive histories, symptoms of depression and childhood abuse experiences. All participants provided written informed consent prior to interview. The institutional review boards of the INMP, Lima, Peru and the Harvard T. H. Chan School of Public Health Office of Human Research Administration, Boston, MA approved all procedures used in this study.

Analytical Population

The study population for this report is derived from information collected from participants who enrolled in the PrOMIS Study. During the study period a total of 3,045 participants completed the structured interview. For the analysis described here, we excluded participants with missing information on suicidal ideation (N=37), history of childhood abuse (N=69), and symptoms of depression (N=21). The final analysis included 2,964 participants. Excluded participants did not differ from the rest of the cohort with regards to socio-demographic or lifestyle characteristics.

Childhood Abuse Assessment

The Childhood Physical and Sexual Abuse Questionnaire was used to collect information concerning participants' experiences with physical and sexual abuse in childhood [25]. Participants were categorized as having experienced childhood physical abuse if, before the age of 18 years, they reported that an older person hit, kicked, pushed, or beat them and/or their life was seriously threatened. Participants were categorized as having experienced childhood sexual abuse if, before the age of 18 years, they reported that an older person touched them, they were made to touch someone else in a sexual way, or someone attempted or completed intercourse with them. Participants who responded "no" to all questions regarding childhood sexual and physical abuse were categorized as having experienced "no abuse".

Participants who experienced "any childhood physical or sexual abuse" were further classified into three groups: "childhood physical abuse only" if they only endorsed physical abuse questions, "childhood sexual abuse only" if they only endorsed sexual abuse questions, or "both childhood physical and sexual abuse" if they endorsed both physical abuse and sexual abuse questions. Furthermore, the frequency of childhood abuse events was assessed by summing responses to individual abuse questions and creating the following response categories: "0," "1," "2," or " 3."

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Lifetime Intimate Partner Violence (IPV) Assessment

Questions pertaining to intimate partner violence (IPV) were adapted from the protocol of Demographic Health Survey Questionnaires and Modules: Domestic Violence Module [26] and the World Health Organization (WHO) Multi-Country Study on Violence Against Women [27]. Participants were assessed for several physical and/or sexual coercive acts used against them by a current or former spouse or intimate partner during their lifetime. A participant was classified as having experienced physical violence if she endorsed any of the following acts: being slapped or having something thrown at her; being pushed, shoved, or having her hair pulled; being hit; being kicked, dragged, or beaten up; being choked or burnt on purpose; and being threatened or hurt with a weapon (such as a gun or knife). A participant was classified as having experienced sexual violence if she endorsed any of the following acts: being physically forced to have sexual intercourse; having had unwanted sexual intercourse because of fear of what the partner might do; or being forced to perform other sexual acts that she found degrading or humiliating. In the present analysis, we categorized participants as having experienced either “no physical and sexual violence” or “any physical or sexual violence” during lifetime.

Depression and Suicidal Ideation Assessments

The Patient Health Quetsionnaire-9 (PHQ-9) is a nine-item depression screening scale based on the criteria from the Diagnostic and Statistical Manual of Mental Disorder-IV (DSM-IV) [28, 29]. The questionnaire assesses nine depressive symptoms in the 14 days prior to evaluation. The PHQ-9 score is calculated by assigning a score of 0-3 to the response categories “not at all,” “several days,” “more than half the days,” and “nearly every day”. Suicidal ideation was assessed based on the PHQ-9 question inquiring as to patient having “thoughts that you would be better off dead or of hurting yourself in some way”. Participants responding to this question with “several days,” “more than half the days,” and “nearly every day” were categorized as affirmative for suicidal ideation. The question asking about suicidal ideation was not considered in the total score for depression. The first eight questions (PHQ-8) were used to calculate a depression score. Participants were categorized as “yes” for depression with a PHQ-8 score 10, similar to the cutoff for the PHQ-9. The use of PHQ-8 depression questionnaire has been demonstrated to minimally influence overall scale performance, mean scores or diagnostic cut points as compared with use of PHQ-9 [30, 31]. The utility and validity of PHQ-9 depression screening and item-9 suicidal ideation assessments have been established in the present study population [32, 33]

Other Covariates

Maternal age was categorized as 18–19, 20–29, 30–34, and 35 years. Educational attainment was categorized as 6, 7–12, and 12 completed years of schooling. Other socio-demographic variables were categorized as: marital status (married, living with partner vs. other), employment status (employed vs. not employed), race/ethnicity (Mestizo vs. other), difficulty accessing basic foods (hard vs. not very hard), parity (nulliparous vs. multiparous), and planned pregnancy (yes vs. no). Gestational age was based on the date of the last menstrual period and ultrasound assessment. Maternal early pregnancy body mass

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index (BMI; kg/m^2) was categorized as <18.5, 18.5-24.9, 25-29.9, and 30 using directly measured weight and height taken at the first study visit by trained research personnel.

Statistical Analysis

Frequency distributions of maternal socio-demographic characteristics according to types of childhood abuse events were examined. Student's *t*-tests were used to assess differences in means of continuous variables, while Chi-Square test was used to compare percentages of categorical variables according to history of childhood abuse. Multivariate logistic regression procedures were used to calculate maximum likelihood estimates of odds ratios (ORs) at 95% confidence intervals (CIs) for the presence of suicidal ideation in relation to childhood abuse (none, physical abuse only, sexual abuse only, physical and sexual abuse) and number of childhood abuse events, respectively. Potential confounders were selected *a priori* based on their hypothesized relationship with childhood abuse and suicidal ideation during early pregnancy. These included maternal age, maternal race/ethnicity, IPV exposure, and depression status [11, 34, 35]. Because depression might modify the association between childhood abuse and suicidal ideation, analyses were repeated after stratifying the cohort according to depression status (yes vs. no). Participants with “no abuse” served as the reference group across all analyses. All reported P-values are two sided with a statistical significance set at 0.05. Statistical analyses were performed using SAS 9.4 (SAS Institute, Cary, NC, USA). All figures were plotted using R 3.1.0 (package “ggplot2”).

Results

Selected socio-demographic data and reproductive characteristics of participants are presented in Table 1. Of the 2,964 study participants, 71.8% reported experiencing any type of childhood physical or abuse. Approximately 36.7% of participants reported experiencing intimate partner abuse in their lifetime. Further, 26.3% of participants were found to have depression (PHQ-8 score 10) and 15.8% reported suicidal ideation during early pregnancy. The mean age of participants was 28.1 years (standard deviation [SD] = 6.3 years); and the mean gestational age at interview was 9.2 weeks (SD = 3.5 weeks). The majority of participants (75.2%) identified themselves as Mestizo (mixed European and Indigenous ancestry) and 95.6% had at least 7 years of education. Characteristics of the study cohort according to childhood abuse groups are also presented in Table 1. Age, access to basics, being nulliparous, experiencing IPV, and depression were statistically significantly associated with any type childhood abuse experienced (*P*-value <0.05). The groups were otherwise similar for other covariates.

The association between history of childhood abuse and suicidal ideation during pregnancy is presented in Table 2. After adjusting for potential confounders, compared with participants reporting no history of childhood abuse, those who experienced any childhood abuse had a 3.85-fold (aOR = 3.85; 95% CI: 2.84-5.23) increased odds of reporting suicidal ideation during early pregnancy. Further adjustment for lifetime IPV and depression attenuated the magnitude of association (aOR = 2.90; 95% CI: 2.12-3.97). We next evaluated the association of specific types of childhood abuse with suicidal ideation. After adjusting for confounders including depression and lifetime IPV, compared with women who

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experienced no abuse during childhood, the odds of suicidal ideation was 2.30-fold for those who reported physical abuse only (aOR = 2.30; 95%CI: 1.64-3.22); 2.58-fold for those who reported sexual abuse (aOR = 2.58; 95%CI: 1.62-4.09); and 4.04-fold for those who reported experiencing both physical and sexual abuse (aOR = 4.04; 95%CI: 2.88-5.68). We next examined the association between number of childhood abuse events and suicidal ideation. There was a strong positive linear relationship between odds of suicidal ideation and the number of childhood abuse events (P-value for trend<0.001). Compared with women who experienced no abuse during childhood, those who experienced more than six childhood abuses had a 5.3-fold increased odds of (aOR=5.30; 95%CI: 3.36-8.37) suicidal ideation (Figure 1).

The association between a history of childhood abuse and suicidal ideation was assessed after stratifying the study cohort according to the presence or absence of depression (Table 3**).** As can be seen in Table3, the odds of suicidal ideation was increased among women with a history of any childhood abuse irrespective of their depression status. Among women with no depression the OR for suicidal ideation was 2.73 (95% CI: 1.90-3.92); the corresponding OR among depressed women was 3.44 (95%CI: 1.84-6.43). The direction and magnitude of associations of suicidal ideation in relation to the type of abuse and the number of abuse events were also largely similar for depressed and non-depressed women (Table 3, bottom panels).

Comment

The prevalence of childhood abuse (71.8%) and suicidal ideation (15.8%) was high in our study population. Any childhood abuse was associated with nearly three-fold increase fold (aOR = 2.90; 95% CI: 2.12-3.97) in reporting suicidal ideation during early pregnancy even with adjustment for lifetime IPV and depression. Women who experienced both physical and sexual abuse during childhood were more likely to report suicidal ideation than women experiencing only one type of abuse. The proportion of reporting suicidal ideation increased linearly with increasing number of childhood abuse events.

Our results are largely consistent with findings of other studies conducted among men and non-pregnant women. These earlier studies showed that exposure to childhood abuse is predictive of suicidal behaviors (including suicidal ideation) later in life [36-39]. Results from four major reviews articles have consistently shown that adults with a history of childhood abuse are more likely to engage in suicidal behavior [36-39]. However, few studies have focused on the effects of childhood abuse on suicidal ideation among pregnant women [15]. In a population-based study of pregnant teens in Brazil, Coelho et al. [41] found increased odds for suicidality among teens who reported physical abuse within the 12-month period prior to interview (OR=2.36, 95% CI: 1.24-4.47) as compared with their non-abused counterparts. Our observation of increased odds of antepartum suicidal ideation with increased number of different types of childhood abuse, typically known as “poly-victimization”, is also consistent with earlier studies that have principally focused on adolescents [40, 41]. Collectively our findings and those of others [40, 41] have important public health and clinical implications. Historically there has been a misconception that pregnancy might have a protective effect against suicide [42]. However, an accumulating body of high quality

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epidemiological evidence now suggests that suicidal ideation is relatively common among pregnant women [43].

Exposure to early-life adversity such as childhood abuse has been reported to lead to persistent hyperactivity of corticotropin-releasing hormone (CRH) circuits and sensitization of the hypothalamic-pituitary-adrenal (HPA) axis and deficit of non-neuronal cells [44, 45]. There is also emerging animal and human evidence suggesting that early-life adversity leads to epigenetic changes in genes in genes involved in the regulation of the stress-response systems [45]. Of note, in studies of postmortem brain tissues of individuals who died by suicide, investigators have observed that individuals who reported childhood abuse had more DNA methylation in the glucocorticoid receptor promoter regions of their genome and reduced glucocorticoid receptor gene expression in the hippocampus than did those who did not report a history of childhood abuse [44, 46]. On balance, available neurophysiological, genetic, genomic and neuroimaging studies highlight the wide range of neurobiological processes that are altered in response to experience of childhood abuse. These early mechanistic studies help to illustrate how early life stressors may disrupt the development of the central nervous system, affect brain structures, biochemistry and function in manners that may account for the diverse and enduring adverse mental health affects experienced across the life course.

Several limitations should be considered when interpreting our results. First, retrospective, self-reported childhood abuse may be subject to systematic non-disclosure, resulting in an underestimation of reported associations[11]. As suggested by previous longitudinal studies of adults whose childhood abuse experiences have been documented, participants' retrospective reports of childhood abuse are likely to underestimate actual experiences[47]. In addition, recall bias may also result from the use of retrospective self-reported data because individuals currently experiencing psychiatric disorders were more prone to recall and disclosure prior abuse[48], which could lead to an inflation of the observed association[48]. Future studies are warranted to develop statistical models to examine the extent and nature of misclassification in abuse reports and to develop abuse classifications taking into account misclassification in the reported data[49]. Second, we only used a single item asking about suicidal ideation to assess suicidality. For more precise risk assessment during pregnancy, other dimensions of suicidal behaviors (for example, suicide plan and attempt) and the context in which suicidal ideation occurs should also be examined[32]. Third, in our study population, the relatively high prevalence of childhood abuse and poverty may limit the generalizability of results from this high risk population to other obstetric populations. Fourth, only physical and sexual abuse during childhood were measured in our study; other types of adverse childhood events, such as childhood emotional abuse and neglect were not measured. Considering more than 70% of our participants experienced childhood physical or sexual abuse, we speculate that emotional abuse and neglect was very likely to be ubiquitous in this population. The potential impact of emotional abuse and neglect during childhood on maternal suicidal ideation should be investigated in future studies.

In summary, childhood abuse is a major global and public health problem associated with a myriad of adverse outcomes across the life course [11, 12, 50, 51]. We found that a history of childhood abuse is associated with increased odds of suicidal ideation during pregnancy.

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Given the multiple adverse perinatal outcomes associated with childhood abuse [14, 52-55], identifying women with a history of childhood abuse and providing these women assistance to mitigate suicidal behavior is critical. Asking pregnant women during early prenatal care visits about their experience of childhood violence [56] and providing them with support during this potentially vulnerable period may help mitigate adverse psychiatric, psychosocial, perinatal and other adverse health outcomes associated with a history of childhood abuse.

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Condensation

Clinicians should be aware of the potential increased risk of suicidal behaviors among pregnant women with a history of childhood physical and sexual abuse.

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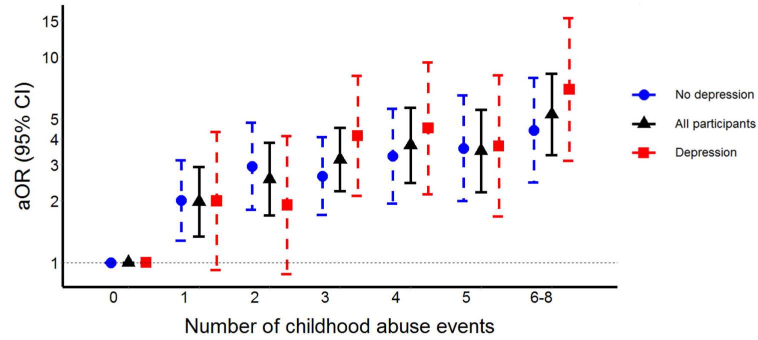

Figure 1. Association between number of childhood abuse events and suicidal ideation (SI) assessed by the Patient Health Questionnaire - 9 (PHQ - 9) during pregnancy according to depression status [a]

[a]: All *P*-value for linear trend is <0.0001.

Abbreviations: aOR, adjusted odds ratio; CI, confidence interval

Y axis has been log transformed.

Depression is defined as Patient Health Questionnaire -8 (PHQ - 8) 10.

For all participants, we have adjusted for maternal age (years) at interview, maternal ethnicity (Mestizo vs. other), lifetime intimate partner violence (no vs. yes), and depression (PHQ-8<10 vs. PHQ-8 10);

For the analyses stratified by depression status, we have adjusted for maternal age (years) at interview, maternal ethnicity (Mestizo vs. other), and lifetime intimate partner violence (no vs. yes).

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Table 1

Characteristics of the study population according to types of childhood abuse in Lima, Peru (N = 2,964)

Characteristics	All participants (N= 2,964)		No abuse (N = 836)		Physical abuse only (N = 1,146)		Sexual abuse only (N = 231)		Physical and sexual abuse (N = 751)		*P*-value
	N	**%**	**N**	**%**	**n**	**%**	**n**	**%**	**N**	**%**	
Age (years) [a]	28.1 ± 6.3		27.7 ± 6.1		28.0 ± 6.4		28.2 ± 6.5		28.7 ± 6.3		0.02
Age (years)											0.02
18-19	162	5.5	39	4.7	67	5.8	15	6.5	41	5.5	
20-29	1658	55.9	512	61.2	633	55.2	128	55.4	385	51.3	
30-34	609	20.5	154	18.4	236	20.6	40	17.3	179	23.8	
35	535	18.0	131	15.7	40	18.3	48	20.8	146	18.0	
Education (years)											0.68
6	125	4.2	37	4.4	48	4.2	5	2.2	35	4.7	
7-12	1621	54.7	467	55.9	623	54.4	123	53.2	408	54.3	
>12	1211	40.9	330	39.5	473	41.3	101	43.7	307	40.9	
Mestizo ethnicity	2226	75.1	640	76.6	853	74.4	180	77.9	553	73.6	0.34
Married/living with a partner	2390	80.6	688	82.3	928	81.0	177	76.6	597	79.5	0.20
Employed	1367	46.1	382	45.7	516	45.1	111	48.1	358	47.7	0.65
Access to basic foods											<0.0001
Hard	1474	49.7	350	41.9	559	48.8	126	54.5	439	58.5	
Not very hard	1488	50.2	486	58.1	585	51.0	105	45.5	312	41.5	
Nulliparous	1448	48.9	452	54.1	548	48.0	115	49.8	333	44.3	0.001
Planned pregnancy	1222	41.2	367	43.9	480	41.9	90	39.0	285	37.9	0.10
Gestational age interview [a]	9.2 ± 3.5		9.3 ± 3.4		9.3 ± 3.5		9.3 ± 3.3		9.2 ± 3.6		0.91
Early pregnancy body mass index (kg/m^2)											0.52
<18.5	59	2.0	21	2.5	23	2.0	4	1.7	11	1.5	
18.5-24.9	1423	48.0	383	45.8	563	49.1	120	51.9	357	47.5	
25-29.9	1088	36.7	323	38.6	414	36.1	76	32.9	275	36.6	
30	362	12.2	93	11.1	141	12.3	26	11.3	102	13.6	
Intimate partner violence [b]	1087	36.7	203	24.3	382	33.3	99	42.9	403	53.7	<0.0001

Characteristics	All participants (N= 2,964)		No abuse (N = 836)		Physical abuse only (N = 1,146)		Sexual abuse only (N = 231)		Physical and sexual abuse (N = 751)		*P*-value
	N	%	N	%	n	%	n	%	N	%	
Depression (PHQ-8 10)	781	26.3	125	15.0	338	29.5	48	20.8	270	36.0	<0.0001

Due to missing data, percentages may not add up to 100%;

[a] mean ± SD (standard deviation);

[b] Lifetime intimate partner violence.

For continuous variables, *P*-value was calculated using the ANOVA; for categorical variables, *P*-value was calculated using the Chi-square test.

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Table 2

Association between childhood abuse and suicidal ideation assessed by the Patient Health Questionnaire - 9 (PHQ - 9) during pregnancy (N = 2,964).

Childhood abuse	No suicidal ideation (N = 2,495)		Suicidal ideation (N = 469)				
	N	%	N	%	Unadjusted OR (95% CI)	Adjusted OR (95% CI) [a]	Adjusted OR (95% CI) [b]
No abuse	786	31.5	50	10.7	Reference	Reference	Reference
Any abuse	1709	68.5	419	89.3	3.85 (2.84-5.23)	3.85 (2.84-5.23)	2.90 (2.12-3.97)
Types of abuse							
No abuse	786	31.5	50	10.7	Reference	Reference	Reference
Physical abuse only	971	38.9	175	37.3	2.83 (2.04-3.93)	2.82 (2.03-3.92)	2.30 (1.64-3.22)
Sexual abuse only	191	7.7	40	8.5	3.29 (2.11-5.14)	3.33 (2.13-5.19)	2.58 (1.62-4.09)
Physical & sexual abuse	547	21.9	204	43.5	5.86 (4.22-8.14)	5.90 (4.25-8.20)	4.04 (2.88-5.68)
Number of childhood abuse events							
0	786	31.5	50	10.7	Reference	Reference	Reference
1	503	20.2	67	14.3	2.09 (1.42-3.06)	2.11 (1.44-3.10)	1.97 (1.34-2.92)
2	303	12.1	61	13.0	3.15 (2.12-4.69)	3.07 (2.06-4.56)	2.40 (1.59-3.64)
3	484	19.4	130	27.7	4.22 (2.98-5.95)	4.27 (3.02-6.04)	3.16 (2.21-4.51)
4	186	7.5	63	13.4	5.30 (3.54-7.95)	5.38 (3.59-8.06)	3.69 (2.43-5.60)
5	130	5.2	45	9.6	5.42 (3.48-8.45)	5.38 (3.45-8.41)	3.51 (2.21-5.56)
6-8	103	4.1	53	11.3	8.06 (5.20-12.48)	8.27 (5.33-12.83)	5.30 (3.36-8.37)
P-value for linear trend					<0.0001	<0.0001	<0.0001

Abbreviations: OR, odds ratio; CI, confidence interval

[a] Adjusted for maternal age (years) at interview and maternal ethnicity (Mestizo vs. other); four women had missing information on maternal ethnicity, leaving 2960 women in this analysis

[b] Adjusted for maternal age (years) at interview, maternal ethnicity (Mestizo vs. other), lifetime intimate partner violence (no vs. yes), and depression (PHQ-8<10 vs. PHQ-8   10); four women had missing information on maternal ethnicity, 10 women had missing information on the lifetime intimate partner violence, 21 women had missing information on the PHQ-8, leaving 2929 women in this analysis.

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Table 3

Association between childhood abuse and suicidal ideation assessed by the Patient Health Questionnaire - 9 (PHQ - 9) during pregnancy according to depression status (N = 2,943).

Childhood abuse	No depression				Depression			
	No SI (N = 1,904)	SI (N = 258)			No SI (N = 577)	SI (N = 204)		
	n	n	Unadjusted OR (95% CI)	Adjusted OR (95% CI) [a, b]	n	n	Unadjusted OR (95% CI)	Adjusted OR (95% CI) [a, c]
No abuse	669	38	Reference	Reference	113	12	Reference	Reference
Any abuse	1235	220	3.14 (2.19-4.48)	2.73 (1.90-3.92)	464	192	3.90 (2.10-7.23)	3.44 (1.84-6.43)
Types of abuse								
No abuse	669	38	Reference	Reference	113	12	Reference	Reference
Physical abuse only	704	94	2.35 (1.59-3.48)	2.21 (1.49-3.28)	261	77	2.78 (1.46-5.31)	2.59 (1.35-4.98)
Sexual abuse only	154	27	3.09 (1.83-5.21)	2.52 (1.46-4.33)	35	13	3.50 (1.46-8.36)	2.96 (1.22-7.18)
Physical & sexual abuse	337	99	4.62 (3.12-6.86)	3.75 (2.50-5.63)	168	102	5.72 (3.00-10.89)	4.85 (2.52-9.33)
Number of childhood abuse events								
0	669	38	Reference	Reference	113	12	Reference	Reference
1	406	47	2.03 (1.30-3.17)	1.98 (1.26-3.10)	93	20	2.01 (0.93-4.32)	2.02 (0.93-4.38)
2	209	37	3.11 (1.93-5.01)	2.86 (1.75-4.68)	93	20	2.01 (0.93-4.32)	1.94 (0.89-4.20)
3	343	61	3.12 (2.04-4.78)	2.69 (1.74-4.15)	138	67	4.56 (2.35-8.86)	4.08 (2.09-7.99)
4	125	29	4.07 (2.42-6.85)	3.31 (1.94-5.62)	61	34	5.20 (2.51-10.78)	4.49 (2.15-9.40)
5	82	22	4.71 (2.66-8.35)	3.61 (2.00-6.50)	47	23	4.57 (2.10-9.93)	3.69 (1.67-8.12)
6-8	70	24	6.02 (3.41-10.61)	4.54 (2.53-8.14)	32	28	8.17 (3.74-17.85)	6.93 (3.12-15.39)
P-value for linear trend			<0.0001	<0.0001			<0.0001	<0.0001

Abbreviations: SI, suicidal ideation; OR, odds ratio; CI, confidence interval

[a] Adjusted for maternal age (years) at interview, maternal ethnicity (Mestizo vs. other), and lifetime intimate partner violence (no vs. yes)

[b] Two women had missing information on maternal ethnicity and seven women had missing information on the lifetime intimate partner violence, leaving 2153 women in this analysis

[c] Two women had missing information on maternal ethnicity and three women had missing information on the lifetime intimate partner violence, leaving 776 women in this analysis.