Association of Childhood Physical and Sexual Abuse with Intimate Partner Violence, Poor General Health and Depressive Symptoms among Pregnant Women

The Harvard community has made this article openly available. Please share how this access benefits you. Your story matters

Citation
Barrios, Yasmin V., Bizu Gelaye, Qiuyue Zhong, Christina Nicolaides, Marta B. Rondon, Pedro J. Garcia, Pedro A. Mascaro Sanchez, Sixto E. Sanchez, and Michelle A. Williams. 2015. “Association of Childhood Physical and Sexual Abuse with Intimate Partner Violence, Poor General Health and Depressive Symptoms among Pregnant Women.” PLoS ONE 10 (1): e0116609. doi:10.1371/journal.pone.0116609. http://dx.doi.org/10.1371/journal.pone.0116609.

Published Version
doi:10.1371/journal.pone.0116609

Citable link
http://nrs.harvard.edu/urn-3:HUL.InstRepos:14065369

Terms of Use
This article was downloaded from Harvard University’s DASH repository, and is made available under the terms and conditions applicable to Other Posted Material, as set forth at http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA
Association of Childhood Physical and Sexual Abuse with Intimate Partner Violence, Poor General Health and Depressive Symptoms among Pregnant Women

Yasmin V. Barrios1, Bizu Gelaye1 *, Qiuyue Zhong1, Christina Nicolaidis2, Marta B. Rondon3, Pedro J. Garcia4, Pedro A. Mascaro Sanchez4, Sixto E. Sanchez5,6, Michelle A. Williams1

1 Department of Epidemiology, Harvard School of Public Health, Boston, MA, United States of America, 2 School of Social Work, Portland State University, Portland, OR, United States of America, 3 Department of Medicine, Section on Psychiatry and Mental Health, Cayetano Heredia Peruvian University, Lima, Peru, 4 Instituto Nacional Materno Perinatal, Lima, Peru, 5 Universidad Peruana de Ciencias Aplicadas, Lima, Peru, 6 Asociación Civil PROESA, Lima, Peru

* bgelaye@hsph.harvard.edu

Abstract

Objective

We examined associations of childhood physical and sexual abuse with risk of intimate partner violence (IPV). We also evaluated the extent to which childhood abuse was associated with self-reported general health status and symptoms of antepartum depression in a cohort of pregnant Peruvian women.

Methods

In-person interviews were conducted to collect information regarding history of childhood abuse and IPV from 1,521 women during early pregnancy. Antepartum depressive symptomatology was evaluated using the Patient Health Questionnaire-9. Multivariable logistic regression procedures were used to estimate adjusted odds ratios (aOR) and 95% confidence intervals (95%CI).

Results

Any childhood abuse was associated with 2.2-fold increased odds of lifetime IPV (95%CI: 1.72–2.83). Compared with women who reported no childhood abuse, those who reported both, childhood physical and sexual abuse had a 7.14-fold lifetime risk of physical and sexual IPV (95%CI: 4.15–12.26). The odds of experiencing physical and sexual abuse by an intimate partner in the past year was 3.33-fold higher among women with a history of childhood physical and sexual abuse as compared to women who were not abused as children (95%CI 1.60–6.89). Childhood abuse was associated with higher odds of self-reported poor
health status during early pregnancy (aOR = 1.32, 95%CI: 1.04–1.68) and with symptoms of antepartum depression (aOR = 2.07, 95%CI: 1.58–2.71).

**Conclusion**

These data indicate that childhood sexual and physical abuse is associated with IPV, poor general health and depressive symptoms in early pregnancy. The high prevalence of childhood trauma and its enduring effects on women’s health warrant concerted global health efforts in preventing violence.

**Introduction**

Childhood abuse has been shown to be associated with serious adverse health consequences across the life course [1–4]. Notably, childhood trauma and adverse experiences have been linked with increased risks of developmental difficulties, sensation seeking behaviors, as well as somatic and mental health outcomes including increased risks of asthma [5], early age at menarche [6,7] chronic systemic inflammation [8], substance abuse [9], mood and anxiety disorders [10], suicidal behaviors [2] and premature mortality [11]. Some investigative teams have reported that women with a history of childhood abuse, particularly childhood sexual abuse, may be at exceptionally high risk of revictimization in adulthood [12,13]. For example, Russell et al [12] reported that childhood incest victims were almost twice as likely to experience rape or attempted rape after age 14 years, as compared with a group of women with no history of incest. Similar associations of childhood abuse with increased risks of both physical and sexual abuse have been documented in population-based surveys, clinical samples and cohorts of college women [14,15]. Additionally, a history of childhood abuse has been linked to an increased risk of exposure to intimate partner violence (IPV) in adulthood by most [16–20], though not all [21] previous investigators.

Despite inconsistent findings across studies, available evidence suggests that women with a history of childhood abuse have an increased risk of IPV in adulthood. Many of the earlier studies, however, have been conducted in North American and European populations. Hence, relatively little is known about the epidemiology and association of childhood abuse and IPV among women in low- and middle-income countries such as Peru. In the recent World Health Organization [22] multi-country study on domestic violence, the lifetime prevalence of any physical or sexual partner violence varied from 15% to 71% [23–25]. Moreover, studies have also shown that victims of IPV are more likely to experience depression [26–28], anxiety [29], suicide ideation [30–33], and post-traumatic stress disorder [34–36] than those without such history. However, many studies have not quantified risk by type of abuse experienced at the hands of an intimate partner in relation to type of childhood abuse. In a large sample of low-income pregnant Peruvian women receiving routine prenatal care, we examined the associations of women’s childhood experiences of physical and sexual abuse with risk of physical and sexual abuse by an intimate partner. We also evaluated the extent to which, if at all, childhood physical and sexual abuse was associated with women’s self-reported general health status and symptoms of antepartum depression.

**Methods**

**The PrOMIS Study**

The population for the present study was drawn from participants of the ongoing Pregnancy Outcomes, Maternal and Infant Study (PrOMIS) Cohort, designed to examine maternal social
and behavioral risk factors of preterm birth and other adverse pregnancy outcomes among Peruvian women. The study population consists of women attending prenatal care clinics at the Instituto Nacional Materno Perinatal (INMP) in Lima, Peru. The INMP is the primary reference establishment for maternal and perinatal care operated by the Ministry of Health of the Peruvian government. Recruitment began in February 2012. Women eligible for inclusion were those who initiated prenatal care prior to 16 weeks gestation since, on average, less than 10% of women initiate prenatal care after 16 weeks of gestation at INMP. Women were ineligible if they were younger than 18 years of age, did not speak and read Spanish, or had completed more than 16 weeks gestation. The eligibility criteria threshold of initiating prenatal care prior to the completion of 16 weeks gestation was set so as to mitigate concerns about reverse causality and recall bias while enrolling a study population that is sufficiently generalizable to the source population of women seeking care at the study site. Before setting this threshold, we determined that over 90% of women delivering at INMP initiate prenatal care prior to 16 weeks gestation.

Enrolled participants were invited to take part in an interview where trained research personnel used a structured questionnaire to elicit information regarding maternal socio-demographic, lifestyle characteristics, medical and reproductive histories, and early life experiences of abuse and with symptoms of mood and anxiety disorders. All participants provided written informed consent. The institutional review boards of the INMP, Lima, Peru and the Harvard 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 those participants who enrolled in the PrOMIS Cohort Study between February 2012 and March 2013. During this period 1,810 eligible women were approached, and 1,556 (86%) agreed to participate. Thirty-five participants were excluded from the present analysis because of missing information concerning experience with abuse in childhood and/or missing information for IPV in adulthood. Women excluded from this analysis did not differ in regards to sociodemographic and lifestyle characteristics as compared with those included. A total of 1,521 women remained for analysis.

**Childhood Abuse Assessment**

We used the Childhood Physical and Sexual Abuse Questionnaire to elicit information concerning participants’ experiences with physical and sexual abuse in childhood [37]. The instrument consists of eight questions concerning abuse taken from the Centers for Disease Control and Prevention (CDC) Adverse Childhood Experiences Study. Participants were rated as having experienced childhood 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 intercourse was attempted or completed (sexual abuse); or that they were hit, kicked, or beaten often and/or their life was seriously threatened (physical abuse). Participants who responded ‘no’ to all questions regarding sexual and physical abuse were categorized as ‘no abuse’. Those responding ‘yes’ to only physical abuse questions were categorized as ‘physical abuse only’ and those responding ‘yes’ to only sexual abuse questions were categorized as ‘sexual abuse only’. Those responding ‘yes’ to any physical abuse questions and ‘yes’ to any sexual abuse questions were categorized as having experienced ‘both physical and sexual abuse’. Participants who responded ‘yes’ to any questions of physical abuse or ‘yes’ to any questions of sexual abuse or yes to both abuse types were categorized as having experienced ‘any abuse’.
IPV Assessment

Questions on IPV were adapted from the protocol of Demographic Health Survey Questionnaires and Modules: Domestic Violence Module [38] and the WHO Multi-Country Study on Violence Against Women [23]. Women were assessed for a range of physical and/or sexual coercive acts used against them by a current or former husband or intimate partner without their consent. Women were classified as having experienced moderately severe physical violence if they endorsed any of the following acts: being slapped, having her arms twisted or something thrown at her, being pushed or shoved. Participants were classified as having experienced severe physical violence if they reported experiencing any of the following acts: being hit, kicked, dragged or beaten up, being choked or burnt on purpose, or being threatened or hurt with a weapon (such as, gun, knife, or other object). Participants were classified as having experienced sexual violence if they endorsed any of the following: being physically forced to have sexual intercourse, having had unwanted sexual intercourse because of fear of what the partner might do, and being forced to perform other sexual acts that the respondent found degrading or humiliating. In this study, women were categorized as having experienced one or more acts of physical or sexual violence, physical violence only, sexual violence only, or both physical and sexual violence at any time from a current or former male partner. All study personnel were trained on interviewing skills, contents of the questionnaire, and ethical conduct of violence research (including issues of safety and confidentiality). Interviewers were trained to refer participants found to be in physically dangerous situations and/or in immediate need for counseling to psychologists at local women’s organizations, hospital psychiatrists, and battered women’s shelters.

Depressive Symptoms

Depressive symptomatology during pregnancy was evaluated using the Patient Health Questionnaire-9 (PHQ-9) [39]. The PHQ-9 has been demonstrated to be a reliable tool for assessing depressive disorders among a diverse group of obstetrics-gynecology patients [40,41] and in Spanish-speaking women [42]. The 9-item instrument asks respondents to rate the relevancy of each statement comprising emotional, cognitive, and functional somatic symptoms over the past two weeks on a four-point scale a) never; b) several days; c) more than half the days; or d) nearly everyday. The PHQ-9 total score is the sum of scores for the nine items for each participant, and ranged from 0–27. Participants were assigned to one of five depressive symptom categories based on total PHQ-9 score, (a) no depressive symptoms (0–4), (b) mild (5–9), (b) moderate (10–14), (c) moderately severe (15–19) and (d) severe (20–27) depressive symptoms. For the purpose of this study, we assigned participants to one of two categories of depressive symptoms based on total PHQ-9 score, (a) no depressive symptoms (0–9) and (b) moderate to severe depressive symptoms (10–27) [39,43,44]. A meta-analysis of 14 studies support the use of a PHQ-9 score of ≥10 to classify subjects with major depressive disorder [45]. Briefly, the authors reported that a cut-off of ≥10 had a sensitivity and specificity of 0.80 and 0.92, respectively [45].

Other Covariates

Participants’ age was categorized as follows: 18–20, 20–29, 30–34, and ≥35 years. Other sociodemographic variables were categorized as follows: maternal ethnicity (Hispanic vs. others); educational attainment (≤6, 7–12, and >12 completed years of schooling); marital status (married and living with partner vs. others); employment status (employed vs. not employed); access to basic foods (very hard/hard, somewhat hard, not very hard); parity (nulliparous vs. multiparous); planned pregnancy (yes vs. no); self-reported health in the last year (good vs. poor) and gestational age at interview.
Statistical Analyses
Frequency distributions of maternal sociodemographic and reproductive characteristics were examined. Chi-square tests for categorical variables and Student’s t tests for continuous variables were conducted to determine whether there were statistically significant differences in the association between socio demographic and reproductive characteristics and history of any childhood abuse. Multivariate adjusted logistic regression procedures were used to calculate maximum likelihood estimates of odds ratios (ORs) and 95% confidence intervals (CIs) of history of lifetime IPV (any lifetime physical or sexual violence, physical violence only, sexual violence only, and both physical and sexual violence) in relation to history of childhood abuse. We included covariates of a priori interest (i.e., maternal age, education, employment status, parity and difficulty paying for the very basics) in the final multivariate adjusted logistic regression models. Multinomial logistic regression procedures were used to estimate odds of lifetime IPV in relation to types of history of childhood abuse (e.g., physical abuse only, sexual abuse only, and both physical and sexual abuse). These analyses were important for identifying heterogeneity in risk of IPV in relation to prior history of abuse. For these analyses, women who had no history of childhood abuse (either physical or sexual) and no history of IPV constituted the reference group. All statistical analyses were performed using SAS 9.3 (SAS Institute, Cary, NC, USA). All reported P-values are 2-tailed with statistical significance set at 0.05.

Results
In this cohort, the vast majority of participants reported exposure to physical or sexual abuse as a child. As shown in Fig. 1, 61.1% of exposed women reported experience of physical abuse; and 32.2% reported experience with sexual abuse. Overall, 37.3% of the cohort reported childhood physical abuse only, 24.3% of the cohort reported experience with both physical and sexual abuse; and 7.8% experienced sexual abuse only in childhood. Of the 489 women who experienced sexual abuse in childhood, 24% were victims of rape. Additionally, of the 489 women who were sexually abused in childhood, 93.3% reported that an adult sexually abused them.

Sociodemographic and reproductive characteristics of the study population are summarized in Table 1. Approximately 70.0% of study participants reported a history of physical or sexual abuse in childhood (<18 years of age). Individuals who were exposed to physical or sexual abuse as a child were older, more likely to have difficulty paying for basic needs, and to report poor health status as compared with those who were not abused as a child. Participants who were abused as children were less likely to be nulliparous as compared to those not abused as a child. The two study groups were similar with regards to educational attainment, gestational age at interview, race/ethnicity and employment status. Of note, individuals abused in childhood were more likely to have a positive lifetime history of physical or sexual abuse by an intimate partner in adulthood (44.9% vs. 25.8%, p-value <0.01).

Table 2, shows adjusted odds ratio (aOR) and 95% confidence interval (95% CI) of experiencing lifetime IPV in relation to childhood abuse history. Women with a history of experiencing any childhood abuse had 2.2-fold increased odds of suffering from any lifetime IPV (aOR = 2.20; 95%CI: 1.72–2.83). Compared to women who reported no history of childhood abuse those who experienced any childhood abuse also had increased odds of experiencing lifetime physical IPV only (aOR = 1.94; 95%CI: 1.45–2.58), lifetime sexual IPV only (aOR = 2.27; 95%CI: 1.30–3.95) and lifetime physical and sexual IPV (aOR = 3.29; 95%CI: 2.01–5.38). The association of experiencing IPV during lifetime was particularly strong among women with a history of both physical and sexual abuse during childhood (aOR = 7.14; 95%CI: 4.15–12.26) lifetime IPV. Associations of childhood abuse with IPV during the past year were similar in direction as lifetime IPV, but lower in magnitude (Table 3). Compared to women
who had no childhood abuse history, those women who suffered from both physical and sexual childhood abuse had the highest odds of experiencing any IPV (aOR = 3.00; 95%CI: 2.07–4.35), physical IPV only (aOR = 2.73; 95%CI: 1.77–4.20), sexual IPV only (aOR = 4.24; 95%CI: 1.77–10.17) and both physical and sexual IPV (aOR = 3.33; 95%CI: 1.60–6.89) in the past year.

Table 4 shows the association of childhood abuse with self-reported health status in the past year and during the current pregnancy. Compared to women with no childhood abuse history, those women who experienced any childhood abuse had increased odds of reporting their health as poor in the past year (aOR = 1.63; 95%CI: 1.26–2.11) and during the current pregnancy (aOR = 1.32; 95%CI: 1.04–1.68). We found elevated odds of poor self-reported health in the past year among abused women, specifically for women with a history of both physical and sexual childhood abuse (aOR = 2.12; 95%CI: 1.56–2.89). Of note, the association remained virtually unchanged when we included women’s experience with IPV in the current pregnancy into the model (aOR = 2.02; 95% CI: 1.42–2.87). A similar association, but lower in magnitude, was found for self-reported poor health status during the current pregnancy.

We also evaluated the prevalence of antepartum depression, measured using the PHQ-9 instrument, according to childhood abuse. As shown in Table 5, compared to women who had no childhood experience with physical or sexual abuse, those who experienced any childhood
abuse had 2.1-fold increased odds of experiencing antepartum depression (aOR = 2.07; 95%CI: 1.58–2.71). We observed elevated odds of antepartum depression among women with a history of both physical and sexual childhood abuse (aOR = 2.47; 95%CI: 1.79–3.40); and this association remained even when exposure to IPV during the index pregnancy was accounted for in multivariable models (aOR = 2.14; 95%CI: 1.47–3.11). Of note, the odds of antepartum depression were not elevated in women with a history of only sexual childhood abuse.

Finally, we wanted to evaluate the phenomenon of re-victimization, and therefore repeated multinomial logistic regression to identify whether women who reported childhood physical

| Characteristic                        | Participants (N = 1521) | Childhood Physical or Sexual Abuse |
|---------------------------------------|-------------------------|-----------------------------------|
|                                       | Yes (N = 1056)          | No (N = 465)                      |
|                                       | n  %                    | n  %                            |
| Age (years)*                          | 28.0 ± 6.2              | 28.3 ± 6.2                       | 27.3 ± 6.2 | <0.01 |
| Age (years)                           |                         |                                  |
| 18–20                                 | 88 5.8                  | 59 5.6                           | 29 6.2    | 0.03  |
| 20–29                                 | 869 57.1                | 579 54.8                         | 290 62.4  |
| 30–34                                 | 300 19.7                | 222 21.0                         | 78 16.8   |
| ≥35                                   | 264 17.4                | 196 18.6                         | 68 14.6   |
| Education (years)                     |                         |                                  |
| ≤6                                    | 68 4.5                  | 47 4.5                           | 21 4.5    | 0.93  |
| 7–12                                  | 852 56.0                | 588 55.7                         | 264 56.8  |
| >12                                   | 596 39.2                | 417 39.5                         | 179 38.5  |
| Mestizo                               | 1143 75.2               | 788 74.6                         | 355 76.3  | 0.41  |
| Married/living with a partner         | 1237 81.3               | 853 80.8                         | 384 82.6  | 0.48  |
| Employed                              | 660 43.4                | 461 43.7                         | 199 42.8  | 0.74  |
| Access to basic foods                 |                         |                                  |
| Very hard/hard                        | 281 18.5                | 216 20.5                         | 65 14.0   | <0.01 |
| Somewhat hard                         | 492 32.4                | 357 33.8                         | 135 29.0  |
| Not very hard                         | 747 49.1                | 482 45.6                         | 265 57.0  |
| Nulliparous                           | 765 50.3                | 503 47.6                         | 262 56.3  | <0.01 |
| Planned pregnancy                     | 640 42.1                | 435 41.2                         | 205 44.1  | 0.53  |
| Gestational age at interview*         | 9.8 ± 3.4               | 9.8 ± 3.3                        | 9.6 ± 3.4 | 0.15  |
| Self-reported health status in last year|                         |                                  |
| Good                                  | 1043 68.6               | 690 65.3                         | 353 75.9  |
| Poor                                  | 453 29.8                | 349 33.1                         | 104 22.4  |
| Self-reported health status during pregnancy |                 |                                  |
| Good                                  | 483 31.8                | 313 29.6                         | 170 36.6  | 0.01  |
| Poor                                  | 990 65.1                | 709 67.1                         | 281 60.4  |
| Depression**                          | 442 29.1                | 352 33.3                         | 90 19.4   | <0.01 |
| Any lifetime sexual or physical abuse by intimate partner | | | |
| No                                    | 927 61.0                | 582 55.1                         | 345 74.2  | <0.01 |
| Yes                                   | 594 39.1                | 474 44.9                         | 120 25.8  |

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

*mean ± SD (standard deviation)

** Depression is defined as a score ≥10 on PHQ-9 scale

doi:10.1371/journal.pone.0116609.t001
only, sexual abuse only or both physical and sexual abuse had distinctly different odds of experiencing subsequent intimate partner violence in adulthood. In Fig. 2 we can see that the odds of revictimization by an intimate partner increased for all women who experienced any childhood abuse. The association was particularly strong for those who experienced both physical and sexual abuse. For example, compared to women never abused, those women who experience childhood sexual abuse only had a 3.4-fold increased odds of suffering physical

**Table 2. Risk of intimate partner violence during lifetime according to reports of childhood abuse experience** (N = 1, 521).

| Childhood Abuse | No Abuse (N = 927) | Any Lifetime IPV (N = 594) | Lifetime IPV Physical Abuse (N = 363) | Lifetime IPV Sexual Abuse (N = 84) | Lifetime IPV Physical and Sexual Abuse (N = 147) |
|-----------------|--------------------|-----------------------------|--------------------------------------|----------------------------------|-----------------------------------------------|
|                 | n (%)              | n (%)                       | aOR (95% CI)                         | n (%)                           | aOR (95% CI)                                  |
| No Abuse        | 345 (37.22)        | 120 (20.20)                 | Reference                            | 82 (22.59)                     | Reference                                     |
| Any Abuse       | 582 (62.78)        | 474 (79.80)                 | 2.20 (1.72–2.83)                     | 281 (77.41)                    | 1.94 (1.45–2.58)                              |
|                 |                    |                             |                                      |                                 |                                               |
| Types of Abuse  |                    |                             |                                      |                                 |                                               |
| No Abuse        | 345 (37.22)        | 120 (20.20)                 | Reference                            | 82 (22.59)                     | Reference                                     |
| Physical Abuse  | 361 (38.94)        | 206 (56.68)                 | 1.57 (1.19–2.07)                     | 145 (39.94)                    | 1.63 (1.19–2.24)                              |
| Sexual Abuse    | 68 (7.34)          | 51 (75.00)                  | 2.14 (1.39–3.29)                     | 30 (8.26)                      | 1.88 (1.13–3.13)                              |
| Physical & Sexual Abuse | 153 (16.50) | 217 (36.53)                 | 3.73 (2.75–5.04)                     | 106 (29.20)                    | 2.68 (1.88–3.83)                              |

CI = confidence interval; aOR = adjusted odds ratio; Bold = statistically significant values.

*Odds ratio adjusted for maternal age (years), education (years), employment status (yes vs. no), parity (nulliparous vs. multiparous) and difficulty paying for the very basics (very hard or hard, somewhat hard, not very hard)

only, sexual abuse only or both physical and sexual abuse had distinctly different odds of experiencing subsequent intimate partner violence in adulthood. In Fig. 2 we can see that the odds of revictimization by an intimate partner increased for all women who experienced any childhood abuse. The association was particularly strong for those who experienced both physical and sexual abuse. For example, compared to women never abused, those women who experience childhood sexual abuse only had a 3.4-fold increased odds of suffering physical

**Table 3. Risk of intimate partner violence during the past year according to reports of childhood abuse experiences** (N = 1, 226).

| Childhood Abuse | No IPV (N = 937) | Any Past Year IPV (N = 289) | Past Year IPV Physical Abuse (N = 196) | Past Year IPV Sexual Abuse (N = 38) | Past Year IPV Physical and Sexual Abuse (N = 55) |
|-----------------|-----------------|------------------------------|----------------------------------------|-------------------------------------|-----------------------------------------------|
|                 | n (%)           | n (%)                        | aOR (95% CI)                           | n (%)                              | aOR (95% CI)                                  |
| No Abuse        | 345 (36.82)     | 68 (23.53)                   | Reference                              | 47 (23.98)                         | Reference                                     |
| Any Abuse       | 592 (63.18)     | 221 (76.47)                  | 1.79 (1.31–2.44)                       | 149 (76.02)                        | 1.76 (1.23–2.53)                              |
| Types of abuse  |                 |                              |                                       |                                     |                                               |
| No Abuse        | 345 (36.82)     | 68 (23.53)                   | Reference                              | 47 (23.98)                         | Reference                                     |
| Physical Abuse  | 364 (38.85)     | 89 (24.00)                   | 1.20 (0.84–1.71)                       | 65 (33.16)                         | 1.27 (0.84, 1.91)                             |
| Sexual Abuse    | 68 (7.26)       | 28 (9.69)                    | 2.05 (1.21, 3.48)                      | 20 (10.20)                         | 2.14 (1.16, 3.92)                             |
| Physical & Sexual Abuse | 160 (17.08) | 104 (35.99)                  | 3.00 (2.07, 4.35)                      | 64 (32.65)                         | 2.73 (1.77, 4.20)                             |

CI = confidence interval; aOR = adjusted odds ratio; Bold = statistically significant values.

*Odds ratio adjusted for maternal age (years), education (years), employment status (yes vs. no), parity (nulliparous vs. multiparous) and difficulty paying for the very basics (very hard or hard, somewhat hard, not very hard)

only, sexual abuse only or both physical and sexual abuse had distinctly different odds of experiencing subsequent intimate partner violence in adulthood. In Fig. 2 we can see that the odds of revictimization by an intimate partner increased for all women who experienced any childhood abuse. The association was particularly strong for those who experienced both physical and sexual abuse. For example, compared to women never abused, those women who experience childhood sexual abuse only had a 3.4-fold increased odds of suffering physical
and sexual abuse IPV during lifetime (OR = 3.44; 95%CI: 1.64–7.22). Notably, those who experienced both types of childhood abuse, physical and sexual, had a 6.9-fold increased odds of subsequently also experiencing both types of adulthood IPV (aOR = 6.88; 95%CI: 4.03–11.76). These results indicate that women with a history of childhood abuse, particularly those physically and sexually abused, are at increased risk for revictimization by an intimate partner during their lifetime.

**Discussion**

Our study extends the literature by adding evidence of increased odds of adult physical and sexual abuse among pregnant Peruvian women with a history of childhood physical and sexual abuse. Strengths of our study include having a large sample size, the relatively high participation rate (86%), and the use of structured questionnaires including a validated instrument for

| Table 5. Risk of depressive symptoms according to reports of childhood abuse experiences* (N = 1,503). |
|-----------------------------------------------|
| **Childhood Abuse** | **No Depression (N = 1061)** | **Depression** **(N = 442)** | **aOR (95% CI)** |
|---------------------|-------------------------------|-----------------------------|------------------|
| **No Abuse**        | 371 (34.97)                  | 90 (20.36)                  | Reference       |
| **Any Abuse**       | 690 (65.03)                  | 352 (79.64)                 | 2.07 (1.58–2.71) |
| **Types of Abuse**  |                               |                             |                  |
| **No Abuse**        | 371 (34.97)                  | 90 (20.36)                  | Reference       |
| **Physical Abuse**  | 373 (35.16)                  | 186 (42.08)                 | 2.05 (1.53–2.75) |
| **Sexual Abuse**    | 91 (8.58)                    | 27 (6.11)                   | 1.20 (0.73–1.96) |
| **Physical & Sexual** | 226 (21.30)                | 139 (31.45)                 | 2.47 (1.79–3.40) |

CI = confidence interval; aOR = adjusted odds ratio; Bold = statistically significant values.
* Odds ratio adjusted for maternal age (years), education (years), employment status (yes vs. no), parity (nulliparous vs. multiparous) and difficulty paying for the very basics (very hard or hard, somewhat hard, not very hard)

**presence of antepartum depression is defined as a score ≥10 on PHQ-9 scale

doi:10.1371/journal.pone.0116609.t005
assessing maternal antepartum depression. Furthermore, multivariable regression analyses are conducted to evaluate the type/types of childhood abuse that are associated with IPV, health status and antepartum depression. Because exposure to physical and sexual abuse is highly interrelated, we conducted statistical analyses to simultaneously consider the impact of independent and joint experiences on each outcome.

Several limitations, however, should be considered when interpreting the results from our study. First, experience of childhood abuse, IPV, and maternal antepartum depressive symptoms were assessed based on self-report in this cross-sectional study. Therefore, these measures may be subjected to non-systematic errors in recall, as well as systematic non-disclosure leading to misclassification. Investigators have noted that individuals are likely to minimize experiences of past violence rather than suggest that they had experienced violence in their lifetime [46]. Errors in recall may have led to an underestimation of reported associations. Indeed, investigators who have conducted longitudinal studies of adults whose childhood abuse was documented have reported that participants’ retrospective reports of childhood abuses are likely to underestimate actual experiences [47,48]. In addition, since the exact age of onset for childhood abuse was not collected in our study, it is possible that younger study participants whose onset was closer to the interview period might have recalled their experiences more accurately than older participants. To help mitigate the likelihood of systematic reporting errors,
well-trained interviewers used a standard questionnaire to collect information from all study participants. Additionally, our investigative team worked to make sure that neither the interviewers nor study participants were aware of specific study hypotheses. Furthermore, instruments used in this study to characterize participants’ violence exposure histories [i.e., The Childhood Physical and Sexual Abuse Questionnaire [37], the Demographic Health Survey Questionnaires and Modules: Domestic Violence Module [38] and the WHO Multi-Country Study on Violence Against Women [23] have been shown to be broadly applicable in ascertaining violence exposures in multicultural settings. Additionally, maternal antepartum depression was determined using an instrument that has well-established psychometric properties in diverse Spanish-speaking study populations [42,45,49,50]. Second, we did not have information on the temporal relationship between the onset and end of the reported violence, which precludes the determination of causality in this relationship. In addition, we did not have data on onset of depression or lifetime history of depression. Prospective studies that include clinical evaluation of participants’ mental health status are needed to confirm causal inferences. Third, although 81% of women reporting IPV in the index pregnancy are married and/or lived with their partner, we cannot with certainty claim the perpetrator of IPV was the father of the child. Finally, despite controlling for potential confounders, residual confounding by factors not measured in our study (e.g., witnessing of parental violence, family conflict and social networks) may have influenced reported estimation of associations. Lastly, results from our hospital-based study may not be applicable to the general population of women because women seeking care at INMP are primarily from a low socioeconomic background and may have high-risk pregnancies. However, our study provides data on an important population in Peru, a population of pregnant women that has been documented to have a high burden of social, medical and mental health problems [24,51–54].

The prevalence of childhood physical and sexual abuse and lifetime exposure to physical and sexual abuse by an intimate partner in our study sample is largely consistent with estimates previously reported in the literature [23,24,55–59]. Our finding of increased odds of IPV among women with a history of childhood sexual abuse is consistent with several studies that have documented high risks of violence re-victimization among individuals with a history of childhood sexual abuse [18,60–62]. For example, in their study of pregnant women receiving prenatal care in Soweto, South Africa, Dunkle and colleagues [61] reported that women who were sexually abused as children had an increased risk of being sexually abused by an intimate partner. In their study of urban pregnant women in the US, Nelson et al, reported that women reporting any type of childhood violence were 2.5-fold as likely to be experiencing violence in their study pregnancy (OR = 2.5, 95%CI: 1.8–2.7) [62]. Our findings are also consistent with reports from Arata et al [60] and Trickett et al [18] who reported elevated risks of re-victimization among women who were sexually abused in childhood. Our study extends the existing literature by documenting particularly elevated odds of lifetime risk of physical and sexual abuse by an intimate partner among low-income pregnant women with a history of childhood physical and sexual abuse.

In the present study we found that childhood abuse was associated with 30% higher odds of self-reported poor health status. These findings are consistent with earlier reports. For example, other investigators have reported that survivors of childhood sexual abuse tend to have more negative perceptions of their general health [63,64] and mental health status [65]. In a study of 179 Brazilian women, investigators reported that women who were sexually abused children had poorer perception of health status, including mental health status as compared with non-abused women [65].

In addition to self-reported health, childhood physical and sexual abuse has been shown to be associated with a number of adverse health outcomes in adulthood. For example, childhood
sexual abuse has been associated with increased risks of depression [66–68] and suicidal behavior [69–71]. Of note among pregnant women, a history of childhood sexual abuse has been associated with antepartum depression [72,73]. Our finding showing increased odds of antepartum depression among women with a history of childhood physical or sexual abuse (OR = 2.1; 95%CI: 1.6–2.7) is generally consistent with the existing literature. For example, in their study of Israeli pregnant women, Yampolsky et al [74], women with a history of childhood sexual abuse had a 1.5-fold increased risk of depression as compared with women who reported no abuse as a child. In a sample of 357 pregnant US women, Benedict et al. found that history of childhood sexual abuse was associated with more than two-fold increased odds of antepartum depression (OR = 2.4; 95%CI: 1.1–5.3) [75]. Bonomi et al, in a Seattle-based health maintenance organization, found that women with history of psychical and sexual childhood abuse had significantly lower functional health and well-being scores (as measured using the 36-Item Short Form Survey Instrument) (2.32–4.52 points lower), increased odds of fair/poor health (prevalence odds ratio = 1.84; 95%CI: 1.3–2.6) and increased odds of depressive symptoms (prevalence odds ratio = 2.2; 95% CI: 1.8–2.6) (assessed using Center for Epidemiological Studies-Depression Scale) [76]. In sum, our findings and those of others [72,73,76] indicate that childhood abuse has long lasting implications for general and mental health.

Child abuse, a severe early life stressor, is thought to disrupt neurodevelopmental processes that contribute to physical, behavioral and mental health problems later in life. The influences of early life abuse are thought to be modulated, in part, via three neurobiological stress response systems: (1) the serotonin system; (2) the sympathetic nervous system; and (3) the hypothalamic–pituitary–adrenal axis [77–79]. Disruptions to any or all of these systems are known to promote a cascade of physiological, neurochemical, and hormonal changes, which can lead to alterations in brain structure and function and contribute to a myriad of enduring behavioral and cognitive problems [77,78]. For instance, childhood abuse has been linked to behavioral outcomes including internalizing behavioral problems such as limited stress tolerance, anxiety, affective instability, dissociative disturbances, depression and suicidality; as well as externalizing behavioral symptoms including poor impulse control, episodic aggression, substance abuse, attention deficit hyperactivity disorder and conduct disorder [78,80–84]. Childhood abuse has also been associated with a number of cognitive problems including low academic performance and IQ, as well as language, memory, and attention deficits [85]. Taken together, evidence of neuropsychological impairments associated with childhood abuse are consistent with the thesis that early childhood stressors and trauma predispose individuals to subconscious beliefs of unworthiness which may lead to the avoidance of those who truly care and instead a tendency to gravitate towards chaotic relationships [86,87]. In addition findings from structural neuroimaging studies provide evidence of deficits in brain volume, gray and white matter of several regions, most prominently the dorsolateral and ventromedial prefrontal cortex but also hippocampus, amygdala, and corpus callosum among victims of childhood abuse [78]. These data also add biological plausibility to our findings and those of others [2,16,19].

Our study reinforces numerous previous studies confirming high prevalence of childhood abuse [57,88] and high prevalence of lifetime IPV [23,24]. The high frequencies of exposure coupled with the complexity and interrelationships among the types of exposure support arguments for much more systematic, frequent, and intensive efforts to monitor the epidemiology of violence across the life course. Considering that victimization experiences accumulate across the life course, intervention should also target child victims and aim to prevent their future re-victimization. Policies and programs for preventing childhood abuse and its underlying causes are needed. There is a limited but promising body of evidence for preventative intervention programs for childhood abuse such as training in parenting and home visitations [22,89–91].
Careful cross-cultural adaptation of these programs and rigorous evaluation to monitor their impact is warranted. Our findings also suggest that childhood abuse and abuse by an intimate partner in adulthood are factors associated with maternal self-reported health status and antepartum depression. Asking pregnant women during early prenatal care visits about their experience with current and childhood violence may open a discussion about the potential risk of coping with these traumatic events through substance use during the pregnancy. Providing treatment for depression early in pregnancy may significantly improve pregnancy and early child developmental outcomes. The high prevalence of childhood abuse and the enduring effects of early trauma on women’s health warrant concerted global health efforts in preventing violence. Women abused as children are set on a trajectory for subsequent abuse and are a particularly vulnerable population. Public health efforts should be made to prevent childhood abuse, identify women with a history of childhood abuse and provide these women assistance with management of risky health behaviors, mental health issues and ongoing IPV.

**Supporting Information**

S1 Table. **Supplemental Table for Fig. 2.** Risk of intimate partner violence (by type of abuse) according to type of childhood abuse*.

(DOCX)

**Acknowledgments**

This research was supported by an award from the National Institutes of Health (NIH), the Eunice Kennedy Shriver Institute of Child Health and Human Development (R01-HD-059835). The NIH had no further role in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the paper for publication. The authors wish to thank the dedicated staff members of Asociacion Civil Proyectos en Salud (PROESA), Peru and Instituto Materno Perinatal, Peru for their expert technical assistance with this research.

**Author Contributions**

Conceived and designed the experiments: MAW. Performed the experiments: MAW SES. Analyzed the data: MAW QZ YVB BG. Contributed reagents/materials/analysis tools: MAW PJG PAMS SES. Wrote the paper: MAW YVB BG QZ CN MBR PJG PAMS SES.

**References**

1. Danese A, Moffitt TE, Harrington H, Milne BJ, Polanczyk G, et al. (2009) Adverse childhood experiences and adult risk factors for age-related disease: depression, inflammation, and clustering of metabolic risk markers. Arch Pediatr Adolesc Med 163: 1135–1143. doi:10.1001/archpediatrics.2009.214 PMID: 19996051
2. Dube SR, Anda RF, Felitti VJ, Chapman DP, Williamson DF, et al. (2001) Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the life span: findings from the Adverse Childhood Experiences Study. JAMA 286: 3089–3096. doi: 10.1001/jama.286.24.3089 PMID: 11754674
3. Fang X, Brown DS, Florence CS, Mercy JA (2012) The economic burden of child maltreatment in the United States and implications for prevention. Child Abuse Negl 36: 156–165. doi: 10.1016/j.chiabu.2011.10.006 PMID: 22300910
4. Sachs-Ericsson N, Blazer D, Plant EA, Arnow B (2005) Childhood sexual and physical abuse and the 1-year prevalence of medical problems in the National Comorbidity Survey. Health Psychol 24: 32–40. doi: 10.1037/0278-6139.24.1.32 PMID: 15631560
5. Coogan PF, Wise LA, O’Connor GT, Brown TA, Palmer JR, et al. (2013) Abuse during childhood and adolescence and risk of adult-onset asthma in African American women. J Allergy Clin Immunol 131: 1058–1063. doi: 10.1016/j.jaci.2012.10.023 PMID: 23219171
6. Kendall-Tackett KA, Simon AF (1988) Molestation and the onset of puberty: data from 365 adults molested as children. Child Abuse Negl 12: 73–81. doi: 10.1016/0145-2134(88)90009-9 PMID: 3365584

7. Wise LA, Palmer JR, Rothman EF, Rosenberg L (2009) Childhood abuse and early menarche: findings from the black women’s health study. Am J Public Health 99 Suppl 2: S460–466. doi: 10.2105/AJPH.2008.149005 PMID: 19443822

8. Bertone-Johnson ER, Whitcomb BW, Missmer SA, Karlson EW, Rich-Edwards JW (2012) Inflammation and early-life abuse in women. Am J Prev Med 43: 611–620. doi: 10.1016/j.amepre.2012.08.014 PMID: 23159256

9. Banducci AN, Hoffman EM, Lejuez CW, Koenen KC (2014) The impact of childhood abuse on inpatient substance users: specific links with risky sex, aggression, and emotion dysregulation. Child Abuse Negl 38: 928–938. doi: 10.1016/j.chiabu.2013.12.007 PMID: 24521524

10. Hornor G (2010) Child sexual abuse: consequences and implications. J Pediatr Health Care 24: 358–364. doi: 10.1016/j.pedhc.2009.07.003 PMID: 20971410

11. Russell DE (1983) The incidence and prevalence of intrafamilial and extrafamilial sexual abuse of female children. Child Abuse Negl 7: 133–146. doi: 10.1016/0145-2134(83)90065-0 PMID: 6605793

12. Schaaf KK, McCanee TR (1998) Relationship of childhood sexual, physical, and combined sexual and physical abuse to adult victimization and posttraumatic stress disorder. Child Abuse Negl 22: 1119–1133. doi: 10.1016/S0145-2134(98)00090-8 PMID: 9827317

13. Siegel JM, Sorenson SB, Golding JM, Burnam MA, Stein JA (1987) The prevalence of childhood sexual assault. The Los Angeles Epidemiologic Catchment Area Project. Am J Epidemiol 126: 1141–1153. PMID: 3500638

14. Schaff KK, McCanne TR (1998) Relationship of childhood sexual, physical, and combined sexual and physical abuse to adult victimization and posttraumatic stress disorder. Child Abuse Negl 22: 1119–1133. doi: 10.1016/S0145-2134(98)00090-8 PMID: 9827317

15. Barnes JE, Noll JG, Putnam FW, Trickett PK (2009) Sexual and physical revictimization among victims of severe childhood sexual abuse. Child Abuse Negl 33: 412–420. doi: 10.1016/j.chiabu.2008.09.013 PMID: 19596434

16. Campbell J (2002) Health consequences of intimate partner violence. Lancet 359: 1331–1336. doi: 10.1016/S0140-6736(02)08336-8 PMID: 11965295
27. Nicolaidis C, Curry M, McFarland B, Gerrity M (2004) Violence, mental health, and physical symptoms in an academic internal medicine practice. J Gen Intern Med 19: 819–827. doi: 10.1111/j.1525-1497.2004.30382.x PMID: 15242466

28. Pico-Alfonso MA, Garcia-Linares MI, Celda-Navarro N, Blasco-Ros C, Echeburua E, et al. (2006) The impact of physical, psychological, and sexual intimate male partner violence on women’s mental health: depressive symptoms, posttraumatic stress disorder, state anxiety, and suicide. J Womens Health (Larchmt) 15: 599–611. doi: 10.1089/jwh.2006.15.599 PMID: 16796487

29. Hedin LW, Grimstad H, Moller A, Schei B, Janson PO (1999) Prevalence of physical and sexual abuse before and during pregnancy among Swedish couples. Acta Obstet Gynecol Scand 78: 310–315. doi: 10.1080/1600-0412.1999.780407.x PMID: 10203298

30. Kernic MA, Wolf ME, Holt VL (2000) Rates and relative risk of hospital admission among women in violent intimate partner relationships. Am J Public Health 90: 1416–1420. doi: 10.2105/AJPH.90.9.1416 PMID: 10983199

31. Roberts GL, Lawrence JM, O’Toole BI, Raphael B (1997) Domestic violence in the Emergency Department: I. Two case-control studies of victims. Gen Hosp Psychiatry 19: 5–11. doi: 10.1016/S0163-8343(96)00119-3 PMID: 9034805

32. Bergman B, Brismar B (1991) Suicide attempts by battered wives. Acta Psychiatr Scand 83: 380–384. doi: 10.1111/j.1600-0447.1991.tb05560.x PMID: 1853731

33. Thompson MP, Kaslow NJ, Kingree JB (2002) Risk factors for suicide attempts among African American women experiencing recent intimate partner violence. Violence Vict 17: 283–295. doi: 10.1891/vivi.17.3.283.33658 PMID: 12102054

34. Frank JB, Rodowski MF (1999) Review of psychological issues in victims of domestic violence seen in emergency settings. Emerg Med Clin North Am 17: 657–677. viii. doi: 10.1016/S0733-8627(05)70089-4 PMID: 10516845

35. Golding J (1999) Intimate partner violence as a risk factor for mental disorders: A meta-analysis. Journal of Family Violence 14: 99–132.

36. Woods SJ (2000) Prevalence and patterns of posttraumatic stress disorder in abused and postabused women. Issues Ment Health Nurs 21: 309–324. doi: 10.1080/16128400248112 PMID: 11075070

37. Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, et al. (1998) Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults. The Adverse Childhood Experiences (ACE) Study. Am J Prev Med 14: 245–258. doi: 10.1016/S0749-3797(98)00017-8 PMID: 9653069

38. DHS (2005) Demographic Health Survey questionnaires and modules: Domestic violence module. [Accessed on September 19, 2014.]. Available: http://www.measuredhs.com/aboutsurveys/dhs/modules_archive.cfm.

39. Kroenke K, Spitzer RL, Williams JB (2001) The PHQ-9: validity of a brief depression severity measure. J Gen Intern Med 16: 606–613. doi: 10.1046/j.1525-1497.2001.016009606.x PMID: 11556941

40. Harrison PA, Sidebottom AC (2008) Systematic prenatal screening for psychosocial risks. J Health Care Poor Underserved 19: 258–276. doi: 10.1353/hpu.2008.0003 PMID: 18264001

41. Spitzer RL, Williams JB, Kroenke K, Hornyak R, McMurray J (2000) Validity and utility of the PRIME-MD patient health questionnaire in assessment of 3000 obstetric-gynecologic patients: the PRIME-MD Patient Health Questionnaire Obstetrics-Gynecology Study. Am J Obstet Gynecol 183: 759–769. doi: 10.1067/mob.2000.106580 PMID: 10992206

42. Wulsn L, Somoza E, Heck J (2002) The Feasibility of Using the Spanish PHQ-9 to Screen for Depression in Primary Care in Honduras. Prim Care Companion J Clin Psychiatry 4: 191–195. PMID: 15014707

43. Cripe SM, Sanchez SE, Sanchez E, Ayala Quintanilla B, Hernandez Alarcon C, et al. (2010) Intimate partner violence during pregnancy: a pilot intervention program in Lima, Peru. J Interpers Violence 25: 2054–2076. doi: 10.1177/0886260509354517 PMID: 20145196

44. Gomez-Beloz A, Williams MA, Lam N (2009) Intimate partner violence and risk for depression among postpartum women in Lima, Peru. Violence Vict 24: 380–398. doi: 10.1891/0886-6708.24.3.380 PMID: 19634363

45. Gilbody S, Richards D, Brealey S, Hewitt C (2007) Screening for depression in medical settings with the Patient Health Questionnaire (PHQ): a diagnostic meta-analysis. J Gen Intern Med 22: 1596–1602. doi: 10.1007/s11606-007-0333-y PMID: 17874169

46. Ellisberg MC, Winkvist A, Pena R, Stenlund H (2001) Women’s strategic responses to violence in Nicaragua. J Epidemiol Community Health 55: 547–555. doi: 10.1136/jech.55.8.547 PMID: 11449011

47. Della Femina D, Yeager CA, Lewis DO (1990) Child abuse: adolescent records vs. adult recall. Child Abuse Negl 14: 227–231. doi: 10.1016/0145-2134(90)90033-P PMID: 2340430
48. Williams LM (1995) Recovered memories of abuse in women with documented child sexual victimization histories. J Trauma Stress 8: 649–673. doi: 10.1002/jts.2490080408 PMID: 8564277

49. Zhong Q, Gelaye B, Fann JR, Sanchez SE, Williams MA (2014) Cross-cultural validity of the Spanish version of PHQ-9 among pregnant Peruvian women: a Rasch item response theory analysis. J Affect Disord 158: 148–153. doi: 10.1016/j.jad.2014.02.012 PMID: 24655779

50. Zhong Q, Gelaye B, Rondon M, Sanchez SE, Garcia PJ, et al. (2014) Comparative performance of Patient Health Questionnaire-9 and Edinburgh Postnatal Depression Scale for screening antepartum depression. J Affect Disord 162: 1–7. doi: 10.1016/j.jad.2014.03.028 PMID: 24766996

51. Cripe SM, Sanchez SE, Gelaye B, Sanchez E, Williams MA (2011) Association between intimate partner violence, migraine and probable migraine. Headache 51: 208–219. doi: 10.1111/j.1526-4610.2010.01777.x PMID: 20946432

52. de Paz NC, Sanchez SE, Huaman LE, Chang GD, Pacora PN, et al. (2011) Risk of placental abruption in relation to maternal depressive, anxiety and stress symptoms. J Affect Disord 130: 280–284. doi: 10.1016/j.jad.2010.07.024 PMID: 20692040

53. Gelaye B, Lam N, Cripe SM, Sanchez SE, Williams MA (2010) Correlates of violent response among Peruvian women abused by an intimate partner. J Interpers Violence 25: 136–151. doi: 10.1177/0886260509349022 PMID: 19252073

54. Miranda JJ, Lopez-Rivera LA, Quisberg DA, Rosales-Mayor E, Gianella C, et al. (2014) Epidemiology of road traffic incidents in Peru 1973–2008: incidence, mortality, and fatality. PLoS One 9: e99662. doi: 10.1371/journal.pone.0099662 PMID: 24927195

55. Barth J, Bernetz L, Heim E, Trelle S, Tonia T (2013) The current prevalence of child sexual abuse worldwide: a systematic review and meta-analysis. Int J Public Health 58: 469–483. doi: 10.1007/s00038-012-0426-1 PMID: 23178922

56. Cyr K, Clement ME, Chamberland C (2014) Lifetime prevalence of multiple victimizations and its impact on children’s mental health. J Interpers Violence 29: 616–634. doi: 10.1177/0886260513505220 PMID: 24158747

57. Finkelhor D, Turner HA, Shattuck A, Hamby SL (2013) Violence, crime, and abuse exposure in a national sample of children and youth: an update. JAMA Pediatr 167: 614–621. doi: 10.1001/jamapediatrics.2013.42 PMID: 23700186

58. Stoltenborgh M, van Ijzendoorn MH, Euser EM, Bakermans-Kranenburg MJ (2011) A global perspective on child sexual abuse: meta-analysis of prevalence around the world. Child Maltreat 16: 79–101. doi: 10.1177/1077559511403920 PMID: 21511741

59. Pereda N, Guiera G, Forns M, Gomez-Benito J (2009) The prevalence of child sexual abuse in community and student samples: a meta-analysis. Clin Psychol Rev 29: 328–338. doi: 10.1016/j.cpr.2009.02.007 PMID: 19371992

60. Arata CM (2000) From child victim to adult victim: a model for predicting sexual revictimization. Child Maltreat 5: 28–38. doi: 10.1177/1077559500005001004 PMID: 11232060

61. Dunkle KL, Jewkes RK, Brown HC, Yoshihama M, Gray GE, et al. (2004) Prevalence and patterns of gender-based violence and revictimization among women attending antenatal clinics in Soweto, South Africa. Am J Epidemiol 160: 230–239. doi: 10.1093/aje/kwh194 PMID: 15257996

62. Nelson DB, Uscher-Pines L, Staples SR, Grisso JA (2010) Childhood violence and behavioral effects among urban pregnant women. J Womens Health (Larchmt) 19: 1177–1183. doi: 10.1089/jwh.2009.1539 PMID: 20392141

63. Gonzalez A, Boyle MH, Kuy HH, Georgiades K, Duncan L, et al. (2012) Childhood and family influences on depression, chronic physical conditions, and their comorbidity: findings from the Ontario Child Health Study. J Psychiatr Res 46: 1475–1482. doi: 10.1016/j.jpsychires.2012.08.004 PMID: 22959202

64. Irish L, Kobayashi I, Delahanty DL (2010) Long-term physical health consequences of childhood sexual abuse: a meta-analytic review. J Pediatr Psychol 35: 450–461. doi: 10.1093/jpepsy/jsp118 PMID: 20022919

65. Aquino NM, Sun SY, Oliveira EM, Martins Mda G, Silva Jde F, et al. (2009) Sexual violence and its association with health self-perception among pregnant women. Rev Saude Publica 43: 954–960. doi: 10.1590/S0034-89102009005000068 PMID: 19967257

66. Kendler KS, Bulik CM, Silberg J, Hettema JM, Myers J, et al. (2000) Childhood sexual abuse and adult psychiatric and substance use disorders in women: an epidemiological and cotwin control analysis. Arch Gen Psychiatry 57: 953–959. doi: 10.1001/archpsyc.57.10.953 PMID: 1105813

67. Lindert J, von Ehrenstein OS, Grashow R, Gal G, Braehler E, et al. (2014) Sexual and physical abuse in childhood is associated with depression and anxiety over the life course: systematic review and meta-analysis. Int J Public Health 59: 359–372. PMID: 24122075
68. Dinwiddie S, Heath AC, Dunne MP, Bucholz KK, Madden PA, et al. (2000) Early sexual abuse and lifetime psychopathology: a co-twin-control study. Psychol Med 30: 41–52. doi: 10.1017/S0033291799001373 PMID: 10722174
69. Devries KM, Mak JY, Child JC, Falder G, Bacchus LJ, et al. (2014) Childhood Sexual Abuse and Suicidal Behavior: A Meta-analysis. Pediatrics.
70. Molnar BE, Berkman LF, Buka SL (2001) Psychopathology, childhood sexual abuse and other child- hood adversities: relative links to subsequent suicidal behaviour in the US. Psychol Med 31: 965–977. doi: 10.1017/S0033291701004329 PMID: 11513382
71. Easton SD, Renner LM, O’Leary P (2013) Suicide attempts among men with histories of child sexual abuse: examining abuse severity, mental health, and masculine norms. Child Abuse Negl 37: 380–387. doi: 10.1016/j.chiabu.2012.11.007 PMID: 23313078
72. Seng JS, Sperlich M, Low LK (2008) Mental health, demographic, and risk behavior profiles of pregnant survivors of childhood and adult abuse. J Midwifery Womens Health 53: 511–521. doi: 10.1016/j.jmwh.2008.04.013 PMID: 18984507
73. Leeners B, Rath W, Block E, Gorres G, Tschudin S (2014) Risk factors for unfavorable pregnancy outcome in women with adverse childhood experiences. J Perinat Med 42: 171–178. doi: 10.1515/jpm-2013-0003 PMID: 24334452
74. Yampolsky L, Lev-Wiesel R, Ben-Zion IZ (2010) Child sexual abuse: is it a risk factor for pregnancy? J Adv Nurs 66: 2025–2037. doi: 10.1111/j.1365-2648.2010.05387.x PMID: 20636469
75. Benedict M, Paine LL, Paine LA, Brandt D, Stallings R (1999) The association of childhood sexual abuse with depressive symptoms during pregnancy, and selected pregnancy outcomes. Child Abuse Negl 23: 659–670. doi: 10.1016/S0145-2134(99)00040-X PMID: 10442831
76. Bonomi AE, Cannon EA, Anderson ML, Rivara FP, Thompson RS (2008) Association between self-reported health and physical and/or sexual abuse experienced before age 18. Child Abuse Negl 32: 693–701. doi: 10.1016/j.chiabu.2007.10.004 PMID: 18602692
77. Teicher MH, Samson JA, Polcari M, McGreenery CE (2006) Sticks, stones, and hurtful words: relative effects of various forms of childhood maltreatment. Am J Psychiatry 163: 993–1000. doi: 10.1176/appi.ajp.163.6.993 PMID: 16741199
78. Hart C, de Vet R, Moran P, Hatch SL, Dean K (2012) A UK population-based study of the relationship between mental disorder and victimisation. Soc Psychiatry Psychiatr Epidemiol 47: 1581–1590. doi: 10.1007/s00127-011-0464-7 PMID: 22029793
79. Watts-English T, Fortson BL, Gibler N, Hooper SR, De Bellis MD (2006) The Psychobiology of Maltreatment in Childhood. Journal of Social Issues 62: 717–736.
80. Brodsky BS, Mann JJ, Stanley B, Tin A, Oquendo M, et al. (2008) Familial transmission of suicidal behavior: factors mediating the relationship between childhood abuse and offspring suicide attempts. J Clin Psychiatry 69: 584–596. doi: 10.4088/CP.v69n0410 PMID: 18373384
81. Clark DB, De Bellis MD, Lynch KG, Cornelius JR, Martin CS (2003) Physical and sexual abuse, depression and alcohol use disorders in adolescents: onsets and outcomes. Drug Alcohol Depend 69: 51–60. doi: 10.1016/S0396-8716(02)00254-5 PMID: 12536066
82. Heffernan K, Cloitre M (2000) A comparison of posttraumatic stress disorder with and without borderline personality disorder among women with a history of childhood sexual abuse: etiological and clinical characteristics. J Nerv Ment Dis 188: 589–595. doi: 10.1097/00005053-200009000-00005 PMID: 11009332
83. Kendall-Tackett KA, Williams LM, Finkelhor D (1993) Impact of sexual abuse on children: a review and synthesis of recent empirical studies. Psychol Bull 113: 164–180. doi: 10.1037/0033-2909.113.1.164 PMID: 8426874
84. Kessler RC, Berglund PA, Foster CL, Saunders WB, Stang PE, et al. (1997) Social consequences of psychiatric disorders, II: Teenage parenthood. Am J Psychiatry 154: 1405–1411. PMID: 9326823
85. Pechtel P, Pizzagalli DA (2011) Effects of early life stress on cognitive and affective function: an integrated review of human literature. Psychopharmacology (Berl) 214: 55–70. doi: 10.1007/s00213-010-0200-9 PMID: 20865251
86. Briere J, Runz M (1990) Differential adult symptomatology associated with three types of child abuse histories. Child Abuse Negl 14: 357–364. doi: 10.1016/0145-2134(90)90007-G PMID: 22078044
87. Stern AE, Lynch DL, Oates RK, O’Toole BI, Cooney G (1995) Self esteem, depression, behaviour and family functioning in sexually abused children. J Child Psychol Psychiatry 36: 1077–1089. doi: 10.1111/j.1469-7610.1995.tb01352.x PMID: 7593400
88. Pineda-Lucatero AG, Trujillo-Hernandez B, Millan-Guerrero RO, Vasquez C (2009) Prevalence of childhood sexual abuse among Mexican adolescents. Child Care Health Dev 35: 184–189. doi: 10.1111/j.1365-2214.2008.00888.x PMID: 18991975
89. Fraser JA, Armstrong KL, Morris JP, Dadds MR (2000) Home visiting intervention for vulnerable families with newborns: follow-up results of a randomized controlled trial. Child Abuse Negl 24: 1399–1429. doi: 10.1016/S0145-2134(00)00193-9 PMID: 11128173

90. Knox M, Burkhart K, Cromly A (2013) Supporting positive parenting in community health centers: The Act Raising Safe Kids Program. Journal of Community Psychology 41: 395–407.

91. Sanders MR, Montgomery DT, Brechman-Toussaint ML (2000) The mass media and the prevention of child behavior problems: the evaluation of a television series to promote positive outcomes for parents and their children. J Child Psychol Psychiatry 41: 939–948. doi: 10.1111/1469-7610.00681 PMID: 11079436