HHS Public Access

Author manuscript

*J Fam Violence*. Author manuscript; available in PMC 2025 March 17.

Published in final edited form as:

*J Fam Violence*. 2024 March 17; 39: 705–722. doi:10.1007/s10896-023-00520-y.

# Path Analysis of Adverse Childhood Experiences, Early Marriage, Early Pregnancy, and Exposure to Intimate Partner Violence Among Young Women in Honduras

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## Abstract

**Purpose—**The pathways by which adverse childhood experiences (ACEs) are associated with early marriage and early pregnancy are poorly understood. Early marriage and early pregnancy may be risk factors for adulthood intimate partner violence (IPV). The aim of this study was to assess the relationships among ACEs, early marriage, early pregnancy, and IPV among women in Honduras.

**Method—**We used weighted data from 1,436 women aged 18–24 years from the nationally representative 2017 Honduras Violence Against Children and Youth Survey. We used path analysis to estimate relationships and accounted for sample design, non-response, and within-country clustering.

**Results—**We found that ACEs had differential relationships with outcomes of interest. For example, witnessing violence in the community was directly associated with increased probability of early pregnancy (10 percentage points (PP); 95% CI: 0.04, 0.15) and IPV (6 PP; 95% CI: 0.01, 0.10), while emotional violence was not directly or indirectly associated with any outcome. Early marriage and early pregnancy had no direct or indirect effect on IPV, but the total effect of early marriage on IPV was significant.

**Conclusions—**Understanding the relationship between ACEs, early marriage, early pregnancy, and IPV may help inform prevention efforts. For example, programs aiming to reduce early pregnancy may consider addressing sexual violence experienced in childhood.



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**Keywords**

Adverse childhood experiences; Early pregnancy; Early marriage; Intimate partner violence; Honduras

## Introduction

Globally, early marriage, defined as a formal marriage or an informal union before the age of 18 years, is widespread and disproportionately affects girls. Every year, 12 million girls are married before their 18th birthdays (United Nations, 2019). Not only is early marriage a violation of human rights, but it also puts girls at risk for a number of adverse health, social, and economic outcomes, such as low levels of educational attainment and exposure to intimate partner violence (IPV) (Kidman, 2017; Lloyd & Mensch, 2008). Without increased policy and programmatic efforts to end early marriage, it is estimated that by 2030 an additional 150 million girls will marry early (UNICEF, 2020), putting millions of girls at risk for violence and other negative health outcomes across their adult lives.

The discourse around early marriage in Honduras is changing. In 2017, Honduras increased the legal minimum age of marriage to 18 years for girls and boys without exceptions. While the policy change represents progress for child rights, most early marriages in Latin America and the Caribbean are informal unions rather than legal marriages (UNFPA, 2019; UNICEF, 2019), and policies against early marriage are often unknown or enforced inconsistently (UNFPA, 2019). Honduras experiences high prevalence of early marriage: 34% of women aged 20–24 years were married or in union before age 18 years and 8% were married or in union before age 15 years in 2019 (UNICEF, 2020). In Latin America and the Caribbean, the prevalence of early marriage has remained consistent for 25 years; consequently, the region will have the third highest prevalence of early marriage in the world by 2030 if the trend continues (UNICEF, 2019). Unlike early marriage in Asia and Africa, early marriage in Latin America has received far less attention, resulting in little data about how early marriage is manifested in the region (Population Council, 2016; UNFPA, 2019).

In Latin America and the Caribbean, early marriage often coincides with early childbearing: 58% of ever-married women aged 20–24 years who married early also began childbearing before age 18 years, compared to only 8% of ever-married women aged 20–24 years who married on or after their 18th birthdays (UNICEF, 2019). Early childbearing is associated with adverse neonatal outcomes, such as preterm birth and low birth weight, and with maternal complications (Ganchimeg et al., 2013; Gibbs et al., 2012). The relationship between early marriage and early childbearing is complex and correlated, but not necessarily causal. Research from the Latin American and Caribbean region suggests that while premarital sex is common, premarital childbearing is not. The general life-course pattern consists of girls having first intercourse in adolescence, entering into unions about one year later, and then giving birth about one year after union formation (Heaton et al., 2002). A study from Honduras suggests a similar pattern: that pregnancy has little impact on the type of union formed or the likelihood of union formation (Grace & Sweeney, 2014). However, recent qualitative studies suggest a more complex picture. While girls in Honduras may

marry early out of the desire for marriage and motherhood, their sexuality and relationships are tightly controlled by their families, thus, pushing girls into early sexual relationships (Murphy-Graham & Leal, 2015; Taylor et al., 2019). Consequently, marriage may be viewed as a "solution" to adolescent pregnancy or loss of "virginity" (Population Council, 2016; UNFPA, 2019).

A common theme between early marriage and early pregnancy is the way in which gender-based violence in childhood and other adverse childhood experiences (ACEs) (i.e., potentially traumatic events that occur before age 18 years (Felitti et al., 1998)) may increase risk of both outcomes. Girls may enter into marriages or intentionally become pregnant to escape violence in their homes, sexual abuse, and other forms of childhood adversity (UNFPA, 2019). Research from other low- and middle-income countries (LMICs), provide evidence that childhood violence and household challenges, such as parental abandonment, may increase girls' risk of early marriage and childbearing (Goicolea et al., 2009; Kappel, Livingston, Patel, Villaveces, & Massetti, 2021; Pallitto & Murillo, 2008; UNFPA, 2019). Adolescent childbearing has also been associated with exposure to childhood physical or sexual abuse (Goicolea et al., 2009; Guijarro et al., 1999; Pallitto & Murillo, 2008), IPV in adolescence (Pallitto & Murillo, 2008), and family disruption (e.g., migration) (Goicolea et al., 2009; Guijarro et al., 1999) in some Latin American countries. Further, adult-perpetrated child sexual abuse of adolescent girls, including in the context of early marriage, may be normalized and may be seen as a marker of masculinity for men (Taylor et al., 2019; UNFPA, 2019).

Girls who marry early may also face violence victimization by their partners. Honduras is characterized by high levels of violence and normalization of violence. Among ever-married Honduran women aged 20–24 years, 41% who married early versus 28% who married in adulthood reported any form of violence by a current or former intimate partner (UNICEF, 2019). Studies from other regions provide evidence of a positive association between early marriage and IPV, while other studies suggest that early marriage has differential effects on the types of IPV experienced; these effects may differ based on region and country (Kidman, 2017). For example, in Bangladesh, women married before age 18 years were at increased risk for physical IPV but not sexual IPV in the last year (Rahman et al., 2014). A study using 2011 Demographic and Health Survey (DHS) data from Honduras found that marriage before age 15 years was not associated with past year physical IPV, but marriage between ages 15–17 years was associated with past year sexual IPV (Kidman, 2017).

In addition to early marriage, the timing and intendedness of pregnancy may be a risk factor for later IPV victimization. A metanalysis of 35 prospective longitudinal studies found that unintended pregnancy was one of the strongest modifiable risk factors for any IPV (Yakubovich et al., 2018). However, globally most adolescent pregnancies are intended (55% of adolescent births are planned in Honduras (Guttmacher Institute & International Planned Parenthood Federation, 2014)). The link between early pregnancy and exposure to IPV in adulthood is not clear. We found no studies carried out in LMICs investigating whether pregnancy before age 18 years was a risk factor for any IPV in adulthood. However, a study carried out in Turkey found that women who experienced adolescent pregnancy were at increased risk for mental health problems, if they experienced sexual coercion by their

spouse (Sezgin & Punamäki, 2020). Another study in Turkey similarly found that adolescent mothers reported higher rates of IPV victimization than non-adolescent mothers (Edirne et al., 2010).

IPV victimization may also be intensified by exposure to ACEs. In a multi-country study, women who reported a history of childhood sexual abuse were at increased risk of past year IPV victimization (Abramsky et al., 2011). Another study using the same dataset found that witnessing violence against one's mother was associated with ever experiencing IPV victimization (Stöckl et al., 2014). In Viet Nam, a study examining the link between early marriage and IPV among ever-married women aged 14–25 years found that lifetime exposure to physical violence perpetrated by family members and to sexual abuse were associated with increased odds of any IPV (Le Hong et al., 2014). However, not all forms of childhood violence were associated with later IPV victimization. In the same study, exposure to physical violence perpetrated by nonfamily members was not significantly associated with IPV (Le Hong et al., 2014).

In this study, we investigated the relationships among early marriage, early pregnancy, IPV in young adulthood, and ACEs in Honduras. In line with the Sustainable Development Goals, Honduras has committed to ending early marriage by 2030 (Girls Not Brides, 2021a), and through the 2010 ministerial declaration "Preventing through Education" (First Meeting of Ministers of Health and Education to Stop HIV and STIs in Latin America and the Caribbean, 2010), Honduras has committed to expanding youth's access to contraception and comprehensive sexuality education in efforts to reduce adolescent pregnancy and early marriage. Further, Honduras has the highest rate of femicide in Latin America. As of 2022, the Centro de Estudios de la Mujer-Honduras (CEM-H) is working to strengthen the capacities of organizations and networks to promote context-specific strategies to end violence against women and girls. Understanding the context in which young women are exposed to IPV will strengthen these efforts. Lastly, the United Nations regional offices recommend strengthening the evidence on the causes and consequence of early marriage to better inform decision-making and advocacy and to organize evidence-based campaigns that will generate public debate towards ending early marriage (UNICEF, 2019). We respond to this call and fill prior gaps in the literature by examining violence-related correlates and consequences of early marriage, early pregnancy, and IPV.

## Conceptual Framework and Path Analysis

We draw upon the Life Course Framework in theorizing the ways through which exposure to ACEs relate to early marriage, early pregnancy, and IPV victimization in young adulthood, and the pathways between each outcome of interest. The Life Course Framework highlights the importance in the sequencing and timing of life events (Elder, 1998). Life transition – such as marriage, births, and first sex – are all common topics understood within and evaluated using this framework (Heaton et al., 2002). Life events are seen not as isolated but rather as interconnected parts within an individual's life, and thus, the identification of differing pathways is an important aspect of the approach (Elder, 1998).

Figure 1 provides a visual representation of the conceptual associations between ACEs, early marriage, early pregnancy, and IPV victimization. The six ACEs of interest in this study include sexual, emotional, and physical violence, witnessing violence in the home, witnessing violence in the community, and parental separation. We propose the following hypotheses: (1) each ACE is positively associated with early marriage, early pregnancy, and IPV; (2) early marriage and early pregnancy are both predictive of IPV, and act as confounders between ACEs and IPV outcomes; and (3) early pregnancy is predicted by early marriage, given previous research of the life course pattern of first sexual intercourse, marriage, and then childbearing in the region (Grace & Sweeney, 2014; Heaton et al., 2002).

## Materials and Methods

### Data

This study used data from the 2017 Honduras Violence Against Children and Youth Survey (VACS) (Government of El Salvador & Ministry of Justice and Public Security, 2019; Government of Honduras, 2019). The Honduras VACS was a cross-sectional, nationally representative household survey of non-institutionalized girls and boys aged 13 to 24 years. The VACS aimed to measure exposure to physical, sexual, and emotional violence in childhood and young adulthood to inform prevention strategies and service provision for survivors of violence (Nguyen et al., 2019).

The Honduras VACS used a three-stage cluster sampling design and split sample approach to randomly select eligible girls and boys. The sampling frame was based on the 2013 national census. Enumeration areas (i.e., the primary sampling units) were randomly selected from the census data, and an additional stratum was selected to include five urban areas (Tegucigalpa, San Pedro Sula, Choloma, Tela and La Ceiba). Based on a complete list of all households within each selected area, a sample of households was randomly selected. One individual was randomly selected from each selected household. Local trained field staff administered the VACS face-to-face in Spanish. The response rate was 83.8% for females (n = 2,537) and 74.6% for males (n = 2,659) (Government of Honduras, 2019). This study focused on females aged 18–24 (n = 1,436).

The survey was independently reviewed and approved by national ethics boards and the CDC Institutional Review Board. Ethical and safety procedures were adapted from World Health Organization (WHO) and UNICEF guidelines for research on violence (World Health Organization, 2001). Field staff received training on interviewing children on sensitive topics, such as sexual behaviors and exposure to violence. All interviewers were sex-matched with participants. All participants provided written consent. A list of free local youth-friendly resources and services were provided to all study participants, irrespective of whether they disclosed violence victimization or perpetration (Centers for Disease Control & Prevention, 2017). Tiered response protocols were in place to provide referrals for psychosocial counseling and other services for children who disclosed violence and requested services.

## Measures

ACEs were retrospectively recorded and included emotional violence by a parent, sexual violence by anyone, physical violence by anyone, witnessed physical violence in the home, witnessed physical violence in the community, and parental separation before age 18 years. Exposure to emotional violence by a parent was a binary variable measured by asking participants whether a parent, adult caregiver, or other adult relative ever told the participant that they were not loved or did not deserve to be loved, said they wished the participant had never been born or were dead, or ever ridiculed or put them down, before age 18 years. Exposure to sexual violence by anyone was measured as a binary variable indicating whether a participant reported that a romantic partner, spouse, or anyone else ever tried to make them have sex against their will but did not succeed, ever physically forced them to have sex and did succeed, ever pressured them to have sex, through harassment, threats or tricks and did succeed or if anyone had touched them in a sexual way without permission, but did not try and force them to have sex, before age 18 years. Exposure to physical violence by anyone was a binary variable measured by asking participants whether anyone (i.e., a parent, adult caregiver, other adult relative, romantic partner, spouse, person their own age, or adult in their community) ever pushed, shoved, shook, or intentionally threw something at them, pushed, kicked, whipped, or beat them with an object, chocked, smothered, tried to drown them, or burned them intentionally, or whether a person their own age or adult in their community ever used or threatened them with a knife, gun or other weapon, before age 18 years. Witnessed physical violence in the home was a binary variable measured by asking participants whether they had heard or saw their parent punch, kick, or beaten up by their other parent or romantic partner or punch, kick, or beat their siblings before age 18 years. Witnessed physical violence in the community was a binary variable measured by asking participants whether outside their home and family environment, they had ever seen anyone get attacked before age 18 years. Parental separation was a binary variable indicating whether their biological mother or father ever physically lived away from them for six months or more or had died before age 18 years.

Early marriage was a binary variable indicating whether a participant reported that she was legally married or lived with someone as if married before the age of 18 years. Early pregnancy was a binary variable indicating whether a participant reported that she had first become pregnant before the age of 18 years. We made the cut-off for early pregnancy before age 18 years to maintain consistency with previous Honduras VACS analyses (see Kappel et al., 2021) and to adhere to common definitions of early pregnancy (UNICEF, 2022). Adolescent pregnancy is often defined as pregnancy occurring prior to age 20 years (World Health Organization, 2022). We instead chose to focus our analysis on early pregnancy prior to legal adulthood, rather than adolescent pregnancy, because of the associated health risks of early pregnancy (UNICEF, 2022).

IPV victimization in young adulthood (defined as ages 18–24 years) included sexual and/or physical IPV. Sexual and physical violence were combined into one variable, because only 51 women (3.2%) reported exposure to sexual IPV victimization. IPV in young adulthood was a binary variable indicating whether a participate reported that a romantic partner or spouse ever touched them in a sexual way without permission, but did not try to force them

to have sex, tried to make them have sex against their will but did not succeed, physically forced them to have sex and did succeed, or pressured them to have sex through harassment, threats or tricks and did succeed or whether a participant reported that a romantic partner or spouse ever slapped, pushed, shoved, shook, or intentionally threw something at them to hurt them, punched, kicked, whipped, or beat them with an object, or chocked, smothered, tried to drown them, or burned them intentionally, or used or threatened them with a weapon on or after age 18 years.

### Covariates

We controlled for the following individual characteristics: age measured as continuous in years, education (less than primary, primary, secondary, higher than secondary), ethnicity (Mestizo, Native/Indigenous, Afro-Honduran, Lenca, Maya Ch'ortí, other, don't know), household economic status (low, middle, high), and early sexual debut (first sex before age 15 years or not). Characteristics were selected based on their potential associations with early marriage, adolescent pregnancy, and IPV in young adulthood. Household economic status was created using a modified version of the Simple Poverty Scorecard™ Honduras (Schreiner, 2010). We used six indicators to tally a total household score, including: number of household members < 14 years; number of bedrooms; construction material of floors; source of water; refrigerator ownership; television ownership. Household economic status was assigned as lowest tertile, middle tertile, or highest tertile based on the overall score distribution.

### Analyses

We first calculated univariate statistics to describe demographic characteristics, and prevalence of ACEs, early marriage, early pregnancy, and IPV in young adulthood. Next, we conducted a path analysis using Stata SE version 16 (StataCorp, 2019) with full information maximum likelihood (FIML) estimation. FIML is a method of handling missing values that assumes multivariate normality and that missing values are missing at random (MAR) or missing completely at random (MCAR) (Lee & Shi, 2021). Linear probability models were used to regress the three endogenous variables (i.e., early marriage, early pregnancy, and IPV in young adulthood) on the exogenous variables. We obtained normal-based bootstrapped confidence intervals around the indirect effects. Sampling weights were used to account for sample design, non-response, and within-country clustering (see Nguyen et al., 2018 for a description of methodology). Standard errors were clustered at the primary sampling unit (PSU) level to account for possible correlated unobserved factors. Statistical significance was set at $p < 0.05$.

## Results

### Background characteristics

On average, women were 20.8 years (95% Confidence Interval (CI): 20.7, 20.9) (Table 1). Most women had completed either primary (36.6%; 95% CI: 33.0, 40.4) or secondary (37.2%; 95% CI: 33.8, 40.8) school. Approximately 35% of women were categorized as having a low household economic status (95% CI: 30.2, 39.9). The majority of women did

not know their ethnicity (56.4%; 95% CI: 52.8, 60.1), and 31.7% identified as Mestizo (95% CI: 28.3, 35.3).

In total, 27.5% of women were married early (95% CI: 24.6, 30.6), and 33.8% became pregnant before age 18 years (95% CI: 30.7, 37.1). Eight and a half percent of women had sex before age 15 years (95% CI: 6.8, 10.7). Many women experienced ACEs. For instance, 50.4% of women experienced parental separation (95% CI: 46.9, 53.9) and 33.6% witnessed physical violence in their communities (95% CI: 30.4, 37.0). A smaller proportion of women experienced exposure to IPV in young adulthood (12.3%; 95% CI: 10.4, 14.4).

## Exposure to multiple key events

Among women who were exposed to a key event (e.g., ACEs, early marriage, early pregnancy, IPV), many also experienced an additional event (Table 2). Of note, large proportions of women who experienced either physical violence by anyone, sexual violence by anyone, or emotional violence by a parent in childhood also witnessed physical violence in their homes and communities. For example, 49.9% of women who experienced physical violence in childhood also witnessed physical violence in their communities, and 36.9% of women who experienced sexual violence in childhood also witnessed physical violence in their homes.

Large proportions of women who experienced one of the ACEs types also reported early marriage or early pregnancy. For example, 35.4% of women who experienced emotional violence in childhood also experienced early pregnancy. About 33% of women who experienced sexual violence in childhood also experienced early marriage.

Many women who were exposed to IPV victimization in early adulthood also experienced high prevalence of physical violence, parental separation, and witnessing physical violence in their homes and communities in childhood. For example, 60.8% and 52.0% of women who experienced early adult IPV victimization also experienced childhood physical violence by anyone and witnessing physical violence in their communities, respectively. Large proportions of these women also experienced early marriage and early pregnancy. Among women who experienced IPV victimization in early adulthood, 40.9% experienced early pregnancy and 40.0% experienced early marriage.

## Path analysis

Figure 2 illustrates the significant direct and indirect effects of the overall path model (Table 3 provides total effects, significant and non-significant standardized estimates, 95% CIs, and *p*-values). Physical violence by anyone and parental separation in childhood resulted in increased probability of early marriage, 9 percentage points (PP) (95% CI: 0.03, 0.14) and 8 PP (95% CI: 0.04, 0.11), respectively. Women were more likely to report early pregnancy if they witnessed physical violence in their community (10 PP; 95% CI: 0.04, 0.15) and married early (42 PP; 95% CI: 0.36, 0.49). Physical violence by anyone and parental separation in childhood were indirectly significantly associated with early pregnancy, 4 PP (95% CI: 0.01, 0.06) and 3 PP (95% CI: 0.02, 0.05), respectively. Women who reported childhood sexual violence by anyone were 9 PP (95% CI: −0.17, −0.01) less likely to report early pregnancy.

The direct estimates between sexual violence by anyone (10 PP; 95% CI: 0.04, 0.16), physical violence by anyone (11 PP; 95% CI: 0.06, 0.16), witnessing physical violence in the home (6 PP; 95% CI: 0.00, 0.12), and witnessing physical violence in the community (6 PP; 95% CI: 0.01, 0.10) and IPV in young adulthood were significant. Yet, neither early marriage nor early pregnancy were significantly directly or indirectly related to IPV in young adulthood. As a result of these relationships, the total effect of early marriage on IPV was significant (Table 3). Women who married early were 5 PP (95% CI: 0.01, 0.10) more likely to experience IPV victimization in young adulthood, as a partial indirect and direct function.

### Sensitivity analysis

Given the unexpected inverse relationship between childhood sexual violence by anyone and early pregnancy, we conducted a sensitivity analysis to understand how types of childhood sexual violence (i.e., unwanted sexual touch, coerced sex, attempted rape, and rape) were independently associated with early pregnancy (see Appendices for full results). In total, 1.5% of women experienced coerced sex, attempted rape, and rape (95% CI: 0.01, 0.02), while 11.4% of women reported unwanted sexual touch (95% CI: 0.10, 0.14) (results not shown in Appendix Tables 4, 5). Given the significantly larger prevalence of unwanted sexual touch, as compared to the other forms of sexual violence, we included it as a separate variable in the model.

Overall, the results of the path analysis remained unchanged (Appendix Figure 3 and Table 1). The childhood sexual violence variable inclusive of coerced sex, attempted rape, and rape was not associated with early marriage, early pregnancy or exposure to IPV victimization. However, unwanted sexual touch was negatively associated with early pregnancy (−11 PP; 95% CI: −0.21, −0.00) and positively associated with exposure to IPV victimization (8 PP; 95% CI: 0.02, 0.15).

## Conclusions

We examined the direct, indirect, and total effects of pathways between ACEs, early marriage, early pregnancy, and exposure to IPV victimization (which included both physical and sexual IPV) among young adult women in Honduras. This novel contribution is important to understanding violence- and adversity-related correlates of early marriage and early pregnancy in LMICs for research, policy, and practice. In sum, we found differential associations between ACEs of interest and endogenous variables (early marriage, early pregnancy and IPV). For example, childhood physical violence by anyone was directly associated with several outcomes of interest, while childhood emotional violence by a parent was not. Early marriage and early pregnancy had no significant direct or indirect associations with IPV victimization. However, the total effect of early marriage on IPV victimization was significant.

We found that women who experienced physical violence in childhood or separated from their biological parents were more likely to marry early, consistent with qualitative research conducted in the region highlighting the role of exposure to violence by family members and economic hardship created by loss or separation from parents in marriage decisions

(UNFPA, 2019). Some women and girls who participated in these qualitative studies reported that they entered into early marriages to escape physical abuse by parents, siblings, or other adult relatives (UNFPA, 2019). However, many women also reported that emotional and sexual violence played a role in early marriage decisions (UNFPA, 2019). In our study, we did not find significant associations between emotional violence by parents and sexual violence by anyone in childhood and early marriage. Potential differences may be due to study design, as past research on this topic in Latin America and the Caribbean is largely qualitative which is not generalizable. Nevertheless, early marriage is a global public health concern. Understanding the mechanisms between exposure to childhood physical violence and parental separation, and early marriage could improve the already limited interventions available (Kes et al., 2017) and allow governments to prevent early marriage before it occurs.

Inconsistent with previous quantitative research from the region (Goicolea et al., 2009; Pallitto & Murillo, 2008), we did not find that childhood sexual violence was positively associated with early pregnancy. In fact, we found a significant negative association. First, study differences could be due to differences in study populations and measurement of sexual violence. Goicolea et al. (2009) included Ecuadorian girls aged 10 to 19 years, and Pallitto and Murillo (2008) included Salvadoran women and girls aged 15 to 24 years. We limited our sample to adult Honduran women aged 18 to 24 years. In terms of measurement, Goicolea et al. (2009) used one question to determine sexual violence and defined sexual violence as unwanted sexual touch, attempted rape, and rape with an adult or person at least 5 years older. Pallitto and Murillo (2008) defined sexual violence as “sexual abuse both with and without penetration” before any pregnancy and by someone other than the participants’ spouse, partner, boyfriend, or ex-boyfriend. We measured sexual violence with a series of four questions that addressed unwanted sexual touch, coerced sex, attempted rape, and rape. We did not consider the relationship of the perpetrator to the participant nor the perpetrator’s age. Second, our sensitivity analysis revealed that only unwanted sexual touch was inversely associated with early pregnancy. Since we cannot disentangle whether unwanted sexual touch occurred before or after a pregnancy, it is possible that early pregnancy resulted in a decreased risk of unwanted sexual touch in this sample of women. Alternatively, unwanted sexual touch victimization could have led women and girls to avoid sex and therefore to avoid early pregnancy. In a broad review of childhood maltreatment and adolescent pregnancy in the U.S., Blinn-Pike et al. (2002) failed to conclude whether a direct relationship exists between childhood maltreatment and adolescent pregnancy (Blinn-Pike et al., 2002). However, a meta-analysis published in 2009 of 14 studies conducted in high-income countries concluded that childhood sexual abuse significantly increased the odds of adolescent pregnancy (Noll et al., 2009). Another meta-analysis published in 2014 that included countries outside the United States, including one study from Brazil, one study from Jamaica, two studies from Ecuador, and one study from El Salvador that examined childhood sexual abuse, suggested that adolescents with histories of sexual abuse are approximately twice as likely to become pregnant as adolescents without histories of sexual abuse (Madigan et al., 2014).

Mixed conclusions about the relationship between sexual violence in childhood and early pregnancy are not surprising given that the operational definition of childhood sexual

abuse varies, as we previously noted and as other researchers have highlighted (Blinn-Pike et al., 2002; Noll et al., 2009), and that the context of childhood sexual violence and early pregnancy varies by region, country, and community. Few other studies discern the differences between various forms of sexual violence and adolescent pregnancy (Noll et al., 2009, 2019). Noll et al. (2019) found that childhood sexual abuse was significantly positively associated with adolescent motherhood, even with several other risk factors taken into account, among U.S. adolescent females 14–17 years old. These studies are limited to the United States. Thus, our study makes a significant contribution in starting to disentangle some of these relationships in Honduras.

We found that separation from biological parents and childhood physical violence were indirectly associated with early pregnancy, consistent with previous studies in the region (Goicolea et al., 2009; Guijarro et al., 1999). Past studies from other regions and Latin America and the Caribbean provide evidence that strong parent–child relationships, parental monitoring, and parent–child communication about sexuality and reproductive health decrease the risk of adolescent pregnancy (Guijarro et al., 1999; Kassa et al., 2018; Miller et al., 2001). Thus, it is reasonable that having one or both biological parents die or being separated for a period of six months or more from one or both biological parents, could result in a weakened parent–child bond, less parental monitoring, and missed conversations about sexual relationships and reproductive health. However, in the case of our analysis, we only considered whether either parent was separated from the child rather than both. The other parent or another caregiver could have theoretically provided parental monitoring on sexual and reproductive health education.

We also found that witnessing physical violence in the community was directly associated with early pregnancy. While no other studies in Latin America and the Caribbean have investigated the relationship between community violence exposure and early pregnancy, a 2020 study conducted in Chicago, U.S. found that girls who were exposed to higher levels of community violence had an increased likelihood of adolescent pregnancy (Laursen, Hebert, Newton, Norcott, & Gilliam, 2020). Although there are methodological differences between Laursen et al. (2020) and our study (e.g., Laursen et al. (2020) measured community violence exposure using the Exposure to Community Violence Probe – an eight-item tool used to measure the frequency of witnessing or personally experiencing violent acts), both suggest that community violence may play an important role in sexual and reproductive health outcomes. The mechanisms by which this occurs are unclear; past studies indicate that community violence exposure may influence sexual behaviors broadly through aggression and negative peer norms (Voisin et al., 2008, 2018) and gang membership (Voisin et al., 2008). These findings suggest addressing structural factors that influence health decision making, and specifically sexual and reproductive health, may be important to reduce early pregnancy and its associated sequela. Future research should investigate the role of exposure to community violence in sexual and reproductive decision-making related factors, such as timing and intendedness of pregnancies, fertility trends, pregnancy outcomes, and contraceptive use.

We also found that sexual and physical violence and witnessing physical violence in the home and community were direct risk factors for physical/sexual IPV victimization, similar

to past studies carried out in LMICS countries (Abramsky et al., 2011; Stöckl et al., 2014). However, in contrast to previous studies (Le Hong et al., 2014; Kidman, 2017; Oshiro et al., 2011; Speizer & Pearson, 2011; Yakubovich et al., 2018), we did not find that early marriage or early pregnancy had significant direct or indirect effects on IPV victimization.

We found that many women experienced the co-occur-rence of multiple forms of violence and other ACEs, consistent with other research from Honduras (Kappel et al., 2021). The cumulative effect of ACEs and the continued exposure of ACEs increases risk for multiple adverse health outcomes in adulthood (Felitti et al., 1998; Kalmakis & Chandler, 2015). We did not examine the dose–response relationship between ACEs and our outcomes of interest. However, the consistency of these relationships and patterns worldwide demonstrate a need to prevent ACEs and mitigation their associated harms (World Health Organization, 2016).

## Limitations

The VACS was an interviewer-administered survey and reports may be subject to social desirability bias. However, interviewers were extensively trained on ethical issues, including maintaining confidentiality and privacy, and how to interview children about sensitive topics. The study utilized a cross-sectional survey design, and thus, we are not able to disentangle cause-effect relationships (in other words, some events in this study might have happened around the same time or an inversed order and thus, we cannot establish cause and effect). The associations we assess and describe cannot be described as causal or as mediation for explanation. Rather, the analytic approach allows us to estimate the magnitude and significance of hypothesized relationships between a set of variables simultaneously. However, because participants reported the age at which ACEs, early marriage, early pregnancy, and IPV in young adulthood occurred, the associations between events occurring before age 18 years and after 18 years are likely linear. On the other hand, we cannot know the pattern of the relationships between events occurring before age 18 years. Of particular importance, is the relationship between early marriage and early pregnancy. If a participant, for example, reported that she was married and became pregnant at age 16 years, we cannot know which even came first. The lack of specificity about the timeline of events is a limitation of this analysis.

The survey retrospectively asked participants about their exposure to ACEs, early marriage, early pregnancy, and IPV in young adulthood. Thus, reports may also be subject to recall bias. Some ACEs were also measured imprecisely, specifically parental separation. Parental separation included whether either biological parent moved away from the participant for six months or more. However, it is not clear whether the participant had contact (physical or verbal) with a parent during these six months or more if they moved away. Further, some potential additional confounders were not asked about in the survey, such as contraceptive use history, other potentially relevant individual, social and cultural factors (e.g., religiosity, machismo, region of residence, urban/rural residence), which may bias the results. We also note that reproductive coercion – meaning physical, sexual, or psychological tactics that interfere with an individual's reproductive goals – may also play an underlying role in the observed associations. For instance, it could be possible that ACEs increase risk for reproductive coercion victimization, leading to pregnancy when one is not desired and

increasing risk for intimate partner violence victimization. However, there is a dearth of literature on these relationships in LMICs. Future research could explore these relationships in more depth.

Our analysis is limited in that we do not know the intendedness of the early pregnancy reported by women or any information about fertility desires or contraceptive histories. We might assume that many of the pregnancies reported were intended and, thus we did not observe any association. In addition, our sample includes women aged 18–24 years. While age is protective of IPV victimization, it may be that surveying women in young adulthood resulted in too short of a time frame to detect differences, and prevalence of IPV victimization was less than reported in other LMICs (Kidman, 2017). Lastly, we did not distinguish between very early marriage (marriage before age 15 years) and marriage at ages 15–17 years. A comparative analysis of early marriage and past year physical and sexual IPV in 34 countries found that girls married very early were more likely to report past year sexual IPV; however, the same was not true for past year physical IPV (Kidman, 2017). The effects of early marriage and adolescent pregnancy on risk of IPV victimization may differ based on region and country (Kidman, 2017).

## Summary

Long-term, sustainable efforts that address potential root causes, such as exposure to childhood violence and other household challenges, may have the potential to reduce the incidence of early marriage, early pregnancy, and exposure to physical/sexual IPV victimization. The World Health Organization's (WHO; the United Nations international public health agency) INSPIRE Strategies for Ending Violence Against Children (World Health Organization, 2016), Girls not Brides (a global network of civil society organizations committed to ending child marriage) (Girls Not Brides, 2021b), and the United Nations Population Fund (UNFPA; the United Nations sexual and reproductive health agency) (UNFPA, 2019) call for the implementation and enforcement of laws that prevent violence against children. Honduras raised the legal minimum age of marriage to 18 years without exceptions. However, many girls enter into informal marriages, sometimes with older men (Taylor et al., 2019; UNFPA, 2019). Laws that criminalize sexual violence of children may prevent early marriage, given that many girls begin sexual relationships before marriage (Heaton et al., 2002), and these laws could also help reduce exposure to IPV in young adulthood based on our study findings. Additionally, Girls not Brides calls for multi-sectoral services, including improvements in economic supports, to reinforce one another and be tailored to the specific needs of girls at risk of early marriage and married girls (Girls Not Brides, 2021b). Recognizing the association of some ACEs, such as physical violence, in early marriage and early pregnancy in service screening could help with the provision and targeting of services and programs (World Health Organization, 2016), leading to the prevention of early marriage and reductions in early pregnancy. Trauma-informed services that involve social welfare services for girls who are orphaned or experience parental separation may also be effective in preventing early marriage and early pregnancy, particularly in contexts with high rates of internal and external migration (World Health Organization, 2016).

Lastly, addressing social norms about violence, early marriage, and related gender and sexuality norms, may also help reduce children's exposure to ACEs (including witnessing violence in the home and in communities) (World Health Organization, 2016), early marriage (Girls Not Brides, 2021b; UNFPA, 2019), early pregnancy, and IPV victimization. Programs that work to change social norms and empower girls and their families have proven successful in reducing risk of early marriage (Girls Not Brides, 2021b; Lee-Rife et al., 2012). However, these interventions could potentially be more successful by recognizing the role of trauma, violence, and early adversity in girls' and their family's decisions about early marriage and childbearing.

## Acknowledgements

The findings and conclusions in this paper are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention. USAID Central America Regional Security Initiative (CARSI) funded the VACS in Honduras. The authors would like to acknowledge the Subsecretaría de Seguridad en Prevención who led the effort in country, the Instituto Nacional de Estadística (INE) who collected the data, and the International Organization for Migration Northern Triangle of Central America (NTCA) Office who coordinated this process in country.

## Data Availability

The public data that support the findings of this study are available upon request from Together for Girls (https://www.togetherforgirls.org/en/analyzing-public-vacs-data).

## Appendix

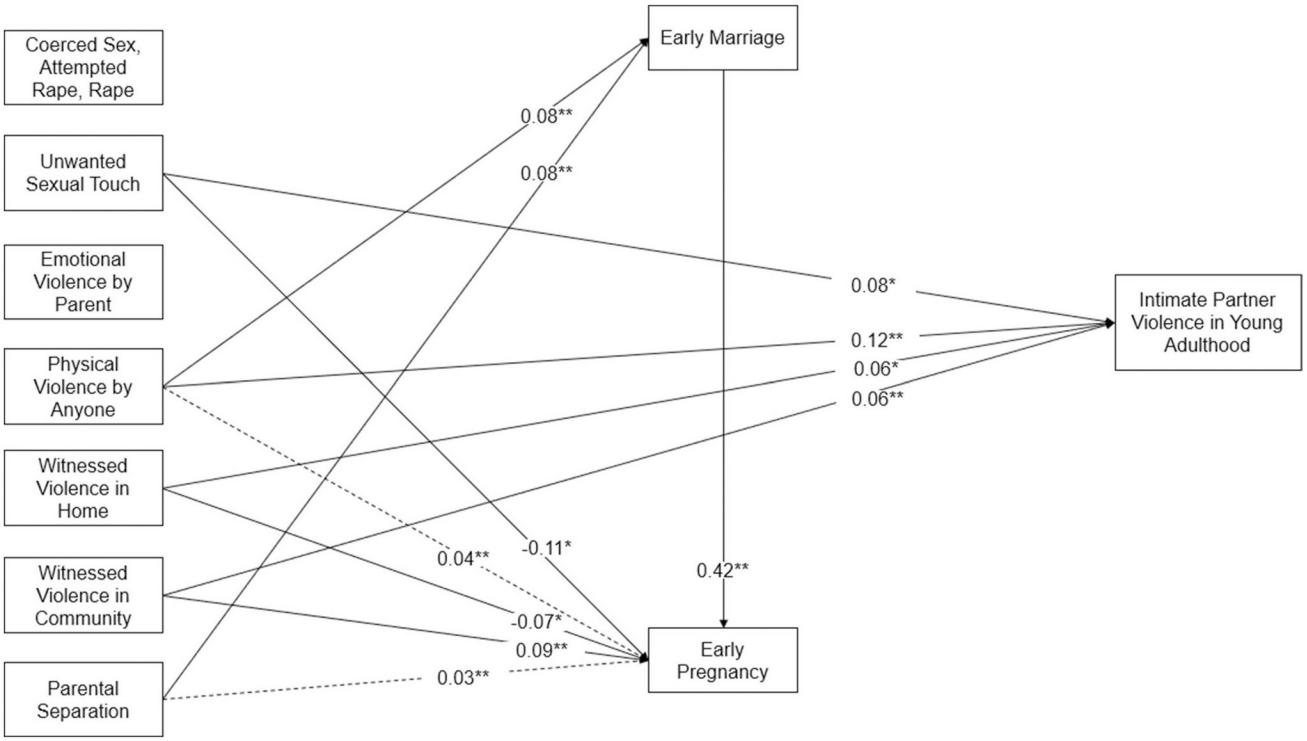


**Fig. 3.**

Sensitivity analysis of overall path model of significant direct and indirect effects. Standardized estimates of relationships between adverse childhood experiences, early marriage, early pregnancy, and exposure to intimate partner violence in young adulthood. Honduras Violence Against Children and Youth Survey, 2017. Notes: Solid lines represent direct effects, and dotted lines represent indirect effects. Insignificant relationships between variables omitted to enhance readability. *$p < .05$ **$p < .01$

**Table 4**

Standardized parameter estimated derived from the path analysis sensitivity analysis. Honduras Violence Against Children and Youth Survey, 2017

| Path | *B* | 95% CI | *p* value |
|---|---|---|---|
| Physical violence by anyone → Early Marriage | | | |
| Direct effect | 0.08 | 0.03, 0.14 | .003 |
| Total effect | 0.08 | 0.03, 0.14 | .003 |
| Emotional violence by anyone → Early Marriage | | | |
| Direct effect | −0.02 | −0.10, 0.05 | .545 |
| Total effect | −0.02 | −0.10, 0.05 | .545 |
| Coerced sex, attempted rape, rape → Early Marriage | | | |
| Direct effect | 0.10 | −0.11, 0.30 | .357 |
| Total effect | 0.10 | −0.11, 0.30 | .357 |
| Unwanted sexual touch → Early Marriage | | | |
| Direct effect | −0.01 | −0.09, 0.08 | .897 |
| Total effect | −0.01 | −0.09, 0.08 | .897 |
| Parental separation → Early Marriage | | | |
| Direct effect | 0.08 | 0.04, 0.11 | .000 |
| Total effect | 0.08 | 0.04, 0.11 | .000 |
| Witnessed physical violence in home → Early Marriage | | | |
| Direct effect | −0.03 | −0.09, 0.02 | .214 |
| Total effect | −0.03 | −0.09, 0.02 | .214 |
| Witnessed physical violence in community → Early Marriage | | | |
| Direct effect | 0.00 | −0.04, 0.04 | .961 |
| Total effect | 0.00 | −0.04, 0.04 | .961 |
| Physical violence by anyone → Early Pregnancy | | | |
| Direct effect | 0.01 | −0.04, 0.07 | .602 |
| Indirect effect | 0.03 | 0.01, 0.06 | .003 |
| Total effect | 0.05 | −0.01, 0.11 | .088 |
| Emotional violence by anyone → Early Pregnancy | | | |
| Direct effect | −0.01 | −0.10, 0.08 | .897 |
| Indirect effect | −0.01 | −0.04, 0.02 | .550 |
| Total effect | −0.02 | −0.10, 0.07 | .708 |
| Coerced sex, attempted rape, rape → Early Pregnancy | | | |
| Direct effect | 0.16 | −0.02, 0.35 | .084 |
| Indirect effect | 0.04 | −0.05, 0.13 | .365 |

| Path | *B* | 95% CI | *p* value |
|---|---|---|---|
| Total effect | 0.20 | 0.01, 0.39 | .036 |
| Unwanted sexual touch → Early Pregnancy | | | |
| Direct effect | −0.11 | −0.21, −0.00 | .040 |
| Indirect effect | −0.00 | −0.04, 0.03 | .897 |
| Total effect | −0.11 | −0.20, −0.01 | .025 |
| Parental separation → Early Pregnancy | | | |
| Direct effect | −0.03 | −0.07, 0.02 | .230 |
| Indirect effect | 0.03 | 0.02, 0.05 | .000 |
| Total effect | 0.01 | −0.04, 0.05 | .792 |
| Witnessed physical violence in home → Early Pregnancy | | | |
| Direct effect | −0.07 | −0.13, 0.00 | .040 |
| Indirect effect | −0.01 | −0.04, 0.01 | .213 |
| Total effect | −0.08 | −0.15, −0.02 | .015 |
| Witnessed physical violence in community → Early Pregnancy | | | |
| Direct effect | 0.09 | 0.04, 0.15 | .001 |
| Indirect effect | 0.00 | −0.02, 0.02 | .961 |
| Total effect | 0.09 | 0.04, 0.15 | .002 |
| Early marriage → Early Pregnancy | | | |
| Direct effect | 0.42 | 0.36, 0.49 | .000 |
| Total effect | 0.42 | 0.36, 0.49 | .000 |
| Physical violence by anyone → Exposure to Intimate Partner Violence Victimization in Young Adulthood | | | |
| Direct effect | 0.12 | 0.07, 0.17 | .000 |
| Indirect effect | 0.00 | −0.00, 0.01 | .082 |
| Total effect | 0.12 | 0.07, 0.17 | .000 |
| Emotional violence by anyone → Exposure to Intimate Partner Violence Victimization in Young Adulthood | | | |
| Direct effect | −0.00 | −0.07, 0.07 | .956 |
| Indirect effect | −0.00 | −0.01, 0.00 | .485 |
| Total effect | −0.00 | −0.07, 0.07 | .962 |
| Coerced sex, attempted rape, rape ^ Exposure to Intimate Partner Violence Victimization in Young Adulthood | | | |
| Direct effect | 0.14 | −0.05, 0.34 | .142 |
| Indirect effect | 0.01 | −0.01, 0.02 | .194 |
| Total effect | 0.15 | −0.04, 0.35 | .123 |
| Unwanted sexual touch → Exposure to Intimate Partner Violence Victimization in Young Adulthood | | | |
| Direct effect | 0.08 | 0.02, 0.15 | .013 |
| Indirect effect | −0.00 | −0.01, 0.00 | .297 |
| Total effect | 0.08 | 0.01, 0.15 | .018 |
| Parental separation ^ Exposure to Intimate Partner Violence Victimization in Young Adulthood | | | |
| Direct effect | 0.01 | −0.02, 0.05 | .460 |
| Indirect effect | 0.00 | −0.00, 0.01 | .150 |
| Total effect | 0.02 | −0.02, 0.05 | .363 |
| Witnessed physical violence in home → Exposure to Intimate Partner Violence Victimization in Young Adulthood | | | |
| Direct effect | 0.06 | 0.00, 0.12 | .038 |

| Path | *B* | 95% CI | *p* value |
|---|---|---|---|
| Indirect effect | −0.00 | −0.01, 0.00 | .121 |
| Total effect | 0.06 | −0.00, 0.11 | .051 |
| Witnessed physical violence in community → Exposure to Intimate Partner Violence Victimization in Young Adulthood | | | |
| Direct effect | 0.06 | 0.02, 0.10 | .006 |
| Indirect effect | 0.00 | −0.00, 0.01 | .299 |
| Total effect | 0.06 | 0.02, 0.11 | .004 |
| Early marriage → Exposure to Intimate Partner Violence Victimization in Young Adulthood | | | |
| Direct effect | 0.04 | −0.01, 0.09 | .120 |
| Indirect effect | 0.01 | −0.01, 0.03 | .233 |
| Total effect | 0.05 | 0.01, 0.10 | .022 |
| Early pregnancy → Exposure to Intimate Partner Violence Victimization in Young Adulthood | | | |
| Direct effect | 0.03 | −0.02, 0.08 | .229 |
| Total effect | 0.03 | −0.02, 0.08 | .229 |

Model adjusted for age, education, ethnicity, household economic status, and early sexual debut *CI* Confidence Interval

**Table 5**

Number and percentage of missing values for model variables

| Variable | Number Missing | Total | % Missing |
|---|---|---|---|
| Early marriage | 4 | 1,436 | 0.28 |
| Early pregnancy | 377 | 1,436 | 26.25 |
| Intimate partner violence in young adulthood | 0 | 1,436 | 0 |
| Physical violence by anyone in childhood | 23 | 1,436 | 1.6 |
| Emotional violence by parent in childhood | 3 | 1,436 | 0.21 |
| Sexual violence by anyone in childhood | 1 | 1,436 | 0.07 |
| Parental separation in childhood | 1 | 1,436 | 0.07 |
| Witnessed physical violence in home in childhood | 4 | 1,436 | 0.28 |
| Witnessed physical violence in community in childhood | 5 | 1,436 | 0.35 |
| Age in years | 0 | 1,436 | 0 |
| Early sexual debut | 18 | 1,436 | 1.25 |
| Ethnicity | | | |
| Indigenous or other Native | 12 | 1,436 | 0.84 |
| Afro-Honduran | 12 | 1,436 | 0.84 |
| Don’t know | 12 | 1,436 | 0.84 |
| Other | 12 | 1,436 | 0.84 |
| Lenca | 12 | 1,436 | 0.84 |
| Maya Ch’orti | 12 | 1,436 | 0.84 |
| Education | | | |
| Less than primary | 11 | 1,436 | 0.77 |
| Primary | 11 | 1,436 | 0.77 |
| Secondary | 11 | 1,436 | 0.77 |
| Household economic status | | | |
| Low | 45 | 1,436 | 3.13 |

| Variable | Number Missing | Total | % Missing |
|---|---|---|---|
| Middle | 45 | 1,436 | 3.13 |

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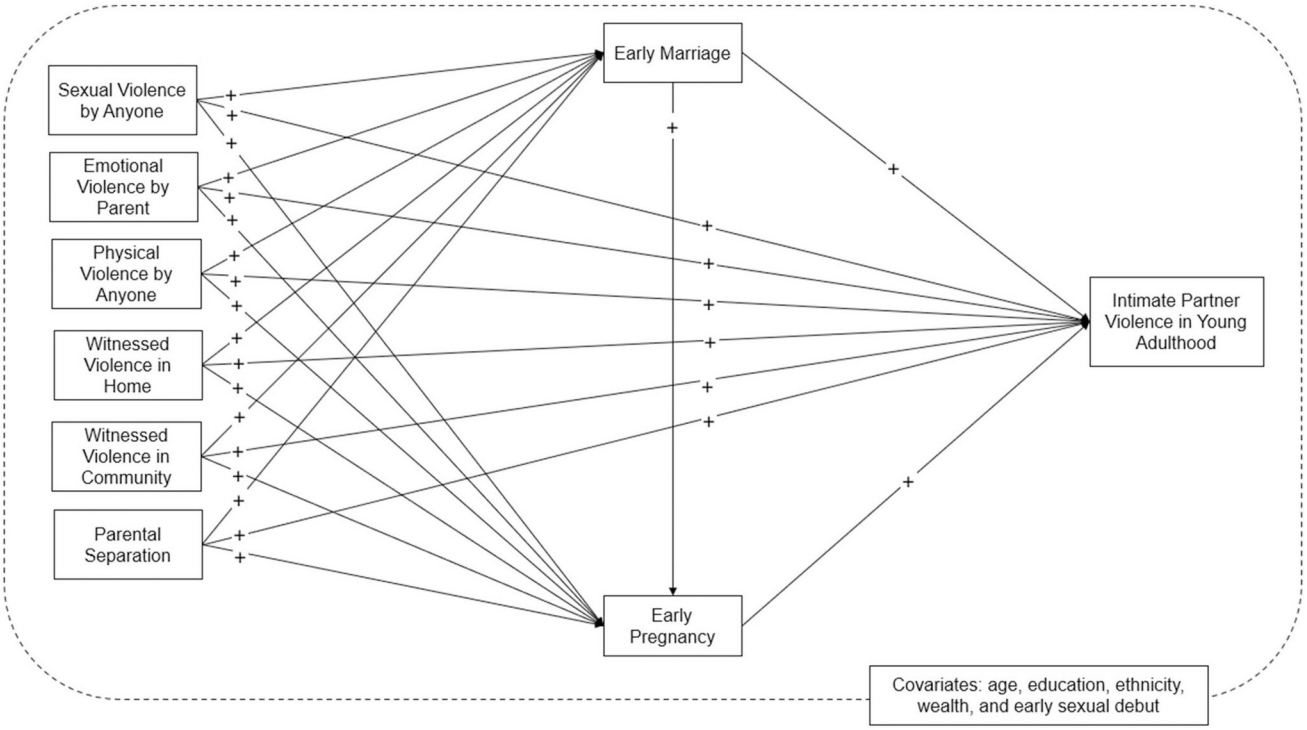


**Fig. 1.**

Conceptual model of associations between adverse childhood experiences (ACEs), early marriage, early pregnancy, and exposure to physical/sexual intimate partner violence victimization in young adulthood. Notes: Plus signs (+) indicate a positive relationship

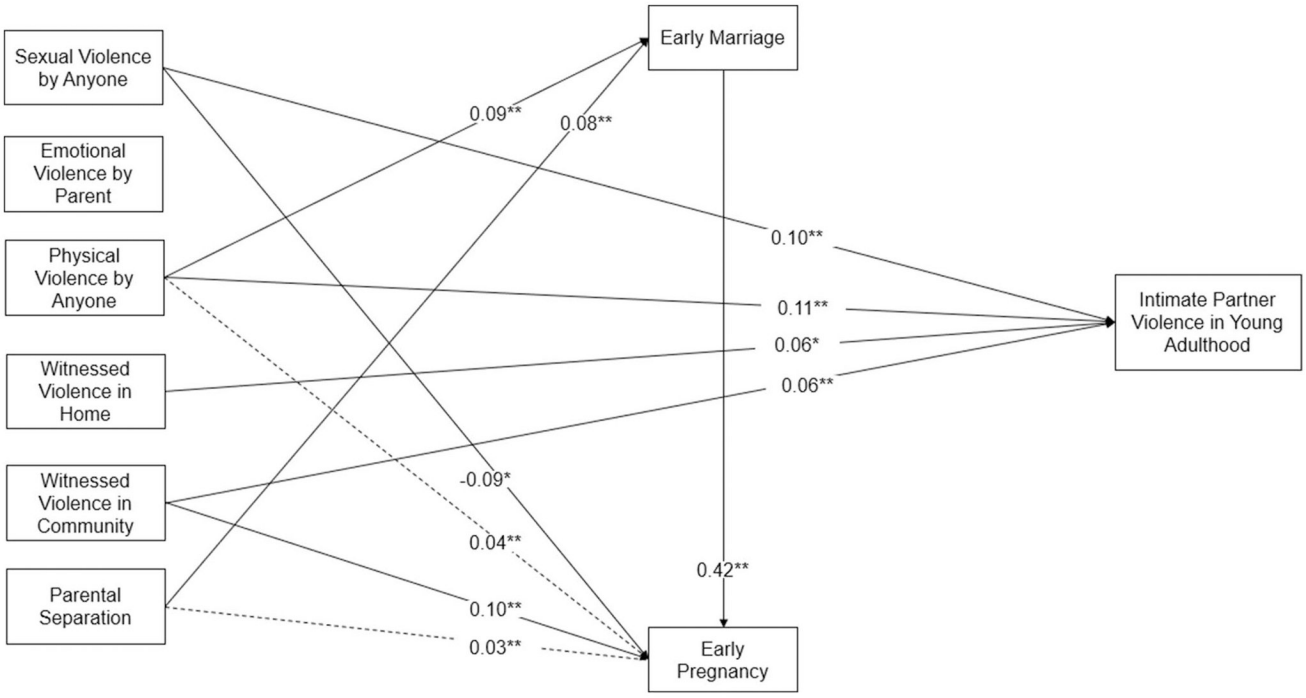


**Fig. 2.**

Overall path model of significant direct and indirect effects. Standardized estimates of relationships between adverse childhood experiences, early marriage, early pregnancy, and intimate partner violence victimization in young adulthood. Honduras Violence Against Children and Youth Survey, 2017. Notes: Solid lines represent direct effects, and dotted lines represent indirect effects. Insignificant relationships between variables omitted to enhance readability. *$p < .05$ **$p < .01$

**Table 1**

Characteristics of female youth aged 18–24 years. Honduras Violence Against Children and Youth Survey, 2017

| Characteristic | *n* | weighted % | 95% CI |
|---|---|---|---|
| Age in years, weighted mean | 1436 | 20.8 | 20.7, 20.9 |
| Education | | | |
| Less than primary | 133 | 9.8 | 7.2, 13.1 |
| Primary | 524 | 36.6 | 33.0, 40.4 |
| Secondary | 531 | 37.2 | 33.8, 40.8 |
| Higher than secondary | 237 | 16.4 | 13.7, 19.4 |
| Household economic status | | | |
| Low | 468 | 34.9 | 30.2, 39.9 |
| Middle | 481 | 33.6 | 30.3, 37.1 |
| High | 442 | 31.5 | 28.0, 35.3 |
| Ethnicity | | | |
| Mestizo | 449 | 31.7 | 28.3, 35.3 |
| Indigenous or other Native | 21 | 1.6 | 0.9, 2.9 |
| Afro-Honduran | 19 | 0.9 | 0.5, 1.5 |
| Lenca | 53 | 4.3 | 2.2, 8.0 |
| Maya Ch’ortl | 16 | 1.2 | 0.7, 2.2 |
| Other | 64 | 3.8 | 2.6, 5.4 |
| Don’t know | 802 | 56.4 | 52.8, 60.1 |
| Early sexual debut | | | |
| No | 1295 | 91.5 | 89.3, 93.2 |
| Yes | 123 | 8.5 | 6.8, 10.7 |
| **ACES** | | | |
| Physical violence by anyone in childhood | | | |
| No | 950 | 67.6 | 64.1, 71.0 |
| Yes | 463 | 32.4 | 29.0, 35.9 |
| Emotional violence by parent in childhood | | | |
| No | 1249 | 87.3 | 85.0, 89.4 |
| Yes | 184 | 12.7 | 10.6, 15.0 |

| Characteristic | *n* | weighted % | 95% CI |
|---|---|---|---|
| Sexual violence by anyone in childhood | | | |
| No | 1197 | 83.8 | 81.4, 85.9 |
| Yes | 238 | 16.2 | 14.1, 18.6 |
| Parental separation in childhood | | | |
| No | 685 | 49.6 | 46.1, 53.1 |
| Yes | 750 | 50.4 | 46.9, 53.9 |
| Witnessed physical violence in home in childhood | | | |
| No | 1085 | 77.0 | 74.4, 79.4 |
| Yes | 347 | 23.0 | 20.6, 25.6 |
| Witnessed physical violence in community in childhood | | | |
| No | 939 | 66.4 | 63.0, 69.6 |
| Yes | 492 | 33.6 | 30.4, 37.0 |
| Early marriage | | | |
| No | 1007 | 72.5 | 69.4, 75.4 |
| Yes | 425 | 27.5 | 24.6, 30.6 |
| Early pregnancy | | | |
| No | 689 | 66.2 | 62.9, 69.3 |
| Yes | 370 | 33.8 | 30.7, 37.1 |
| Intimate partner violence in young adulthood | | | |
| No | 1250 | 87.7 | 85.6, 89.6 |
| Yes | 186 | 12.3 | 10.4, 14.4 |

*CI* Confidence Interval

Early sexual debut is defined as sexual intercourse before age 15 years. Parental separation is defined as either biological parent dying or living away from either biological parent for six months or more before age 18 years. Early marriage is defined as formal or informal marriage before the age of 18 years. Early pregnancy is defined as first pregnancy before age 18 years

**Table 2**

Percent of female youth aged 18–24 years exposed to key events by exposure to a first event. Honduras Violence Against Children and Youth Survey, 2017

| First event | % exposed to an additional event | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Physical violence by anyone in childhood | Emotional violence by parent in childhood | Sexual violence by anyone in childhood | Parental separation in childhood | Witnessed physical violence in home in childhood | Witnessed physical violence in community in childhood | Early marriage | Early pregnancy | Intimate partner violence in young adulthood |
| Physical violence by anyone in childhood | - | 21.4 | 30.7 | 58.8 | 39.0 | 49.9 | 32.6 | 35.2 | 23.2 |
| Emotional violence by parent in childhood | 54.4 | - | 30.1 | 66.7 | 34.7 | 53.2 | 29.2 | 35.4 | 17.6 |
| Sexual violence by anyone in childhood | 60.9 | 23.4 | - | 61.3 | 36.9 | 55.8 | 33.2 | 32.0 | 25.4 |
| Parental separation in childhood | 37.4 | 16.6 | 19.7 | - | 27.3 | 38.6 | 31.8 | 33.5 | 14.2 |
| Witnessed physical violence in home in childhood | 54.8 | 19.0 | 26.0 | 59.8 | - | 46.0 | 29.4 | 29.7 | 21.5 |
| Witnessed physical violence in community in childhood | 48.4 | 20.3 | 27.0 | 57.8 | 31.4 | - | 23.9 | 34.4 | 19.1 |
| Early marriage | 38.1 | 13.4 | 19.7 | 58.3 | 24.6 | 29.3 | - | 66.2 | 17.9 |
| Early pregnancy | 36.2 | 13.7 | 17.1 | 55.2 | 23.1 | 33.1 | 76.5 | - | 19.0 |
| Intimate partner violence in young adulthood | 60.8 | 18.1 | 33.6 | 58.8 | 40.2 | 52.0 | 40.0 | 40.9 | - |

Percentages are weighted

Early sexual debut is defined as sexual intercourse before age 15 years. Parental separation is defined as either biological parent dying or living away from either biological parent for six months or more before age 18 years. Early marriage is defined as formal or informal marriage before the age of 18 years. Early pregnancy is defined as first pregnancy before age 18 years

## Table 3

Standardized parameter estimates derived from path analysis. Honduras Violence Against Children and Youth Survey, 2017

| Path | *B* | 95% CI | *p* value |
|---|---|---|---|
| Physical violence by anyone → Early Marriage | | | |
| Direct effect | 0.09 | 0.03, 0.14 | .003 |
| Total effect | 0.09 | 0.03, 0.14 | .003 |
| Emotional violence by anyone → Early Marriage | | | |
| Direct effect | −0.02 | −0.10, 0.05 | .568 |
| Total effect | −0.02 | −0.10, 0.05 | .568 |
| Sexual violence by anyone → Early Marriage | | | |
| Direct effect | 0.00 | −0.07, 0.07 | .993 |
| Total effect | 0.00 | −0.07, 0.07 | .993 |
| Parental separation → Early Marriage | | | |
| Direct effect | 0.08 | 0.04, 0.11 | .000 |
| Total effect | 0.08 | 0.04, 0.11 | .000 |
| Witnessed physical violence in home → Early Marriage | | | |
| Direct effect | −0.03 | −0.09, 0.02 | .227 |
| Total effect | −0.03 | −0.09, 0.02 | .227 |
| Witnessed physical violence in community → Early Marriage | | | |
| Direct effect | 0.00 | −0.04, 0.04 | .961 |
| Total effect | 0.00 | −0.04, 0.04 | .961 |
| Physical violence by anyone → Early Pregnancy | | | |
| Direct effect | 0.02 | −0.04, 0.07 | .545 |
| Indirect effect | 0.04 | 0.01, 0.06 | .003 |
| Total effect | 0.05 | −0.01, 0.11 | .074 |
| Emotional violence by anyone → Early Pregnancy | | | |
| Direct effect | −0.00 | −0.09, 0.09 | .995 |
| Indirect effect | −0.01 | −0.04, 0.02 | .572 |
| Total effect | −0.01 | −0.09, 0.08 | .827 |
| Sexual violence by anyone → Early Pregnancy | | | |
| Direct effect | −0.09 | −0.17, −0.01 | .036 |
| Indirect effect | 0.00 | −0.03, 0.03 | .993 |
| Total effect | −0.09 | −0.17, −0.01 | .031 |
| Parental separation → Early Pregnancy | | | |
| Direct effect | −0.02 | −0.06, 0.02 | .325 |
| Indirect effect | 0.03 | 0.02, 0.05 | .000 |
| Total effect | 0.01 | −0.03, 0.15 | .629 |
| Witnessed physical violence in home → Early Pregnancy | | | |
| Direct effect | −0.06 | −0.13, 0.00 | .053 |
| Indirect effect | −0.01 | −0.04, 0.01 | .226 |
| Total effect | −0.08 | −0.14, −0.01 | .022 |

| Path | *B* | 95% CI | *p* value |
|---|---|---|---|
| Witnessed physical violence in community → Early Pregnancy | | | |
| Direct effect | 0.10 | 0.04, 0.15 | .001 |
| Indirect effect | 0.00 | −0.02, 0.02 | .961 |
| Total effect | 0.10 | 0.04, 0.02 | .001 |
| Early marriage → Early Pregnancy | | | |
| Direct effect | 0.42 | 0.36, 0.49 | .000 |
| Total effect | 0.42 | 0.36, 0.49 | .000 |
| Physical violence by anyone → Intimate Partner Violence in Young Adulthood | | | |
| Direct effect | 0.11 | 0.06, 0.16 | .000 |
| Indirect effect | 0.01 | −0.00, 0.01 | .080 |
| Total effect | 0.12 | 0.07, 0.17 | .000 |
| Emotional violence by anyone → Intimate Partner Violence in Young Adulthood | | | |
| Direct effect | −0.00 | −0.07, 0.07 | .918 |
| Indirect effect | −0.00 | −0.01, 0.00 | .578 |
| Total effect | −0.00 | −0.08, 0.07 | .892 |
| Sexual violence by anyone ^ Intimate Partner Violence in Young Adulthood | | | |
| Direct effect | 0.10 | 0.04, 0.16 | .001 |
| Indirect effect | −0.00 | −0.01, 0.00 | .324 |
| Total effect | 0.09 | 0.04, 0.15 | .002 |
| Parental separation → Intimate Partner Violence in Young Adulthood | | | |
| Direct effect | 0.01 | −0.02, 0.05 | .487 |
| Indirect effect | 0.00 | −0.00, 0.01 | .138 |
| Total effect | 0.02 | −0.02, 0.05 | .383 |
| Witnessed physical violence in home → Intimate Partner Violence in Young Adulthood | | | |
| Direct effect | 0.06 | 0.00, 0.12 | .039 |
| Indirect effect | −0.00 | −0.01, 0.00 | .112 |
| Total effect | 0.06 | −0.00, 0.11 | .054 |
| Witnessed physical violence in community → Intimate Partner Violence in Young Adulthood | | | |
| Direct effect | 0.06 | 0.01, 0.10 | .010 |
| Indirect effect | 0.00 | −0.00, 0.01 | .252 |
| Total effect | 0.06 | 0.02, 0.04 | .007 |
| Early marriage → Intimate Partner Violence in Young Adulthood | | | |
| Direct effect | 0.04 | −0.01, 0.09 | .135 |
| Indirect effect | 0.01 | −0.01, 0.04 | .180 |
| Total effect | 0.05 | 0.01, 0.10 | .021 |
| Early pregnancy → Intimate Partner Violence in Young Adulthood | | | |
| Direct effect | 0.03 | −0.02, 0.08 | .175 |
| Total effect | 0.03 | −0.02, 0.08 | .175 |

Model adjusted for age, education, ethnicity, household economic status, and early sexual debut

*CI* Confidence Interval