

# The association between intimate partner violence and unintended pregnancy among married young women in Ethiopia

Awoke Gilete Wondie (✉ [awokegilete@yahoo.com](mailto:awokegilete@yahoo.com))

Debre Tabor University <https://orcid.org/0000-0001-7987-9860>

Gizachew Assefa Tessema

SoPH: Curtin University School of Public Health and University of Adelaide School of Public Health



---

## Research Article

**Keywords:** Unintended pregnancy, intimate partner violence, young women, Ethiopia

**Posted Date:** April 14th, 2021

**DOI:** <https://doi.org/10.21203/rs.3.rs-420909/v1>

**License:**   This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

---

# Abstract

## Background

Adolescent and young women aged 15–24 years experience higher rates of intimate partner violence (IPV). Even though IPV has been a common challenge in low-and middle-income countries, there is a paucity of research that explored the effect of intimate partner violence on unintended pregnancy in young women, despite their vulnerability. Therefore, investigating the association between IPV and unintended pregnancy in younger population is critical for developing a multifaceted intervention to reduce the rate of unintended pregnancy and its adverse consequences.

## Methods

Data were obtained from the 2016 Ethiopian Demographic and Health Survey (EDHS). A total of 706 ever married or in sexual union aged 15–24 who gave birth at least once in the last five years or became pregnant at the time of the survey were included in the final analysis. Bivariate and multiple logistic regression were carried out. SPSS version 20.0 was used for data analysis.

## Results

Adolescent and young women aged 15–24 years reported 21.1% (n = 149) unintended pregnancies and 64.2% experience at least one form of IPV (physical, sexual, emotional or marital control). Marital control (59.5%) and sexual violence (8.8%) were the most and least prevalent forms of reported IPV respectively. After adjusting for possible confounders, women who ever experienced physical violence (AOR: 1.54; 95% CI = 1.02–2.34), marital control (AOR: 1.68; 95% CI = 1.13–2.48) and emotional violence (AOR: 1.90; 95% CI = 1.25–2.89) had increased odds of unintended pregnancy, compared to those who had no history of the respective form of violence.

## Conclusion

Physical violence, marital control and emotional violence were an important predictors of unintended pregnancy among adolescent and young girls. Therefore, reducing unintended pregnancy among adolescent and young girls requires interventions beyond increasing access to contraceptive information and services; including empowering women, promoting men's involvement in fertility control and optimizing violent relationship is critical. Including intimate partner violence screening and treatment in reproductive health services is also necessary.

## Background

Violence against women is a significant public health problem as well as a fundamental violation of women's human rights (1). United Nations defines violence against women as “any act of gender based violence that results in, or is likely to result in, physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life” (2) p89. It occurs and is classified in various ways. It can be defined depending on the relationship between the perpetrator and victim (intimate partner and non-intimate partner), or by type of the act of violence, such as sexual, physical or emotional violence (3). Intimate partner violence (IPV) is the most common forms of violence against women and major public health and human rights issues that cause the most devastating problem on both the mother and the fetus (4). World Health Organization (WHO) reported a global lifetime prevalence of IPV among ever-partnered women as 30%. The life time prevalence was highest in the Africa (37%), Eastern Mediterranean (37.0%) and South-East Asia regions (38%) which compared with 23–25% in high-income and western Pacific regions (5). IPV affects all spheres of women's lives such as self-esteem, productivity, autonomy, capacity to care for themselves and their children, ability

to participate in social activities, and even death (6, 7). Evidence indicated that exposure to IPV is associated with a risk of unintended pregnancy (8) and acquiring HIV or sexually transmitted infections (5). It is also associated with alcohol use, depression and suicide, injuries, and death from homicide (5). Although the mechanism for how IPV is associated with unintended pregnancy is not clear; indirect mechanism through which the climate of fear and control surrounding violent relationships could limit women's ability to control their fertility which could lead to unintended pregnancies (9). Evidence also indicates that women are barely able to prevent pregnancies when sexually assaulted (10, 11).

Unintended pregnancies are generally referred to as unwanted or mistimed pregnancies (12). It is a major global concern due to its association with adverse physical, mental, social and economic outcomes. Despite it affects all segments of the community and contributes greatly to maternal and infant mortality (13), young women are highly vulnerable for IPV and potential consequences including unintended pregnancy (14, 15). There were 21 million pregnancies among adolescent girls aged 15–19 years in LMICs (Lower and Middle Income Countries) in 2016; nearly half (49%) were unintended (16). While women aged 15–24 year is associated with a highest risk of unintended pregnancy the WHO report indicated that life time prevalence of IPV is higher among young women aged 15–19 years which can cause long-lasting harm (14, 15).

Adolescent and young women aged 15–24 years experience higher rates of IPV, where high risk of unintended pregnancy is reported (14, 15). Although a substantial body of literature explores the adverse health consequences and associated factors of IPV and unintended pregnancy respectively, only a limited body of research has explored the effect of IPV on unintended pregnancy in this vulnerable population (9). While Ethiopia has put in place appropriate and effective legal policies to promote the rights of women (17), IPV continues to be a major challenge where the national rate of IPV is 34% of which the rate increases to 65.7% in young and adolescent women aged 15–24 years. Although Ethiopia is a country with high total fertility rate (4.6 children per woman), low contraceptive use (36%), and high rates of unintended pregnancy (25%) (18), there is limited evidence investigating the association between IPV and unintended pregnancies in younger population (19, 20). Hence, this study investigated the association between IPV and unintended pregnancy in Ethiopia using nationally representative data. The findings will provide evidence for developing a multifaceted intervention to reduce unintended pregnancy and its consequences.

## **Methods**

### **Data sources**

This study used data from the 2016 Ethiopian Demographic and Health Survey (EDHS), which is nationally representative household surveys assessing various measures of population health and nutrition. The 2016 EDHS is the fourth survey conducted in Ethiopia which was designed to provide a representative data on overview of population, maternal, and child health issues for the country as a whole and for nine regional states and two city administrations of Ethiopia. Details of the survey published elsewhere (18).

### **Sampling and sample size**

The EDHS 2016 used two stages sampling for participant recruitment. In the first stage, each region was stratified into urban and rural areas and clusters were selected from both rural and urban areas based on the 2007 Ethiopian population and housing census using a probability proportional to size selection. A list of all the households was prepared in all the selected clusters. The second stage of selection used the list of households as a sampling frame and systematically selected a fixed number of households per cluster. Then, all women age 15–49 who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey

were included. Only one eligible woman per household was randomly selected for interviewing, and the module was not implemented if privacy could not be obtained (18).

The 2016 EDHS implemented a module of questions on domestic violence for the first time. This module targeted women aged 15–49 years on their experience of different forms of violence committed by their current or former husbands/partner for ever married women and by others for women who had never married (18). For this study, those ever-married adolescent and young women aged 15–24 years who had been requested on their experience of different forms of IPV was considered. From a total of 5,860 women who has been invited to respond for questions on the domestic violence module, a total of 852 ever married women aged 15–24 who gave birth at least once in the last five years or currently pregnant at time of survey were selected and finally 706 (weighted) sample were included in the analysis (Fig. 1).

## Measurement

### Outcome variable

Pregnancy intention for current pregnancy or recent birth was the outcome variable. Those women responding their current pregnancy or recent birth was ‘wanted later’ or ‘not wanted at all’ were regarded as an *unintended pregnancy* and those who responded ‘wanted then’ were considered as an *intended pregnancy*.

### Independent variable

Ever experience of any form of violence and the specified acts of physical, sexual, emotional violence and marital control was the primary exposures of interest. Violence committed by the current/recent husband/partner for currently married or partnered women around the time of current pregnancy was measured by asking all ever-married women if their husband/partner ever did the following:

#### Physical intimate partner violence

push you, shake you, or throw something at you; slap you; twist your arm or pull your hair; punch you with his fist or with something that could hurt you; kick you, drag you, or beat you up; try to choke you or burn you on purpose; or threaten or attack you with a knife, gun, or any other weapon.

#### Sexual intimate partner violence

physically force you to have sexual intercourse with him even when you did not want to; physically force you to perform any other sexual acts you did not want to; or force you with threats or in any other way to perform sexual acts you did not want to.

#### Emotional intimate partner violence

say or do something to humiliate you in front of others; threaten to hurt or harm you or someone close to you; or insult you or make you feel bad about yourself.

#### Marital control

is jealous or angry if she talks to other men; frequently accuses her of being unfaithful; does not permit her to meet her female friends; tries to limit her contact with her family; and insists on knowing where she is at all times.

Ever experience of any form of violence was derived from the response to above listed questions. In each component of violence, if a women answered 'yes' to at least one of the above questions, then the respective component of violence was considered (*any violence, physical, sexual, emotional violence and marital control*). If a woman answered 'No' to all questions in each component of violence, then it was considered as no experience of IPV.

Other covariates we used for adjustment included socio-demographic characteristics of women (age, residence, education, wealth, and employment status), fertility preference and control measures (ever use of contraceptive, ideal family size, descision maker for using contraceptives and maternal health care), and husbands/partners socio-demographic and behavioural characterstics (education, employment status and alchol consumption) were used in the analyses which were drawn from the literature.

## Data analysis

Data cleaning and management were carried out using SPSS version 20. Variables were re-coded to meet the desired classification. Descriptive statistics were used to describe the characteristics of respondents with regard to IPV and unintended pregnancy.

Binary logistic regression analysis was used to assess the association of different form of IPV and other covariates with unintended pregnancy. Multivariate logistic regression analysis was used to derive the adjusted effects of IPV on unintended pregnancy. Initially, different form of IPV (physical, sexual, emotional violence, marital control and any of IPV) were included to estimate the association between different form of IPV and unintended pregnancy. In the subsequent models, each components of IPV in separate model was adjusted for covariates that showed significance ( $p < 0.2$ ) in binary analysis including sociodemographic, fertility control and preference, and autonomy related variables. P-values less or equal to 0.05 were employed to declare statistical significance. Odds ratios and 95% confidence intervals were presented in the results. Multicollinearity was checked using variance inflation factors (VIF). To account non response rate and sampling design, we used sample weight in all the analysis.

## Results

### Socio-demographic characteristics

The mean age of participants were 21.2 year (SD = 0.37) and most (77.6%) were between the age of 20 and 24 year. Most (88.4%) of the study participants were rural residents. Almost half (48.8%) were classified in the lower wealth status (Table 1).

Table 1  
Socio-demographic characteristics of ever married women age 15–24 who gave at least one birth in the last 5 years or pregnant at time of survey, 2016 EDHS (n = 706)

Variables		Number	Percent
<b>Geographical/Household characteristics</b>			
Residence	Urban	82	11.6
	Rural	624	88.4
Household Wealth	Low	344	48.8
	Middle	130	18.5
	High	231	32.8
<b>Women's Characteristics</b>			
Age	15–19	158	22.4
	20–24	548	77.6
Education	No education	244	34.5
	Primary	377	53.4
	Secondary	64	9.0
	Higher	21	3.0
Ever used contraception	No	343	48.6
	Yes	363	51.4
Decision maker for using FP	Women or Jointly	209	29.6
	Husband only or others	496	70.4
Decision maker for using MHC	Women or Jointly	493	69.9
	Husband only or others	213	30.1
Ideal family size	0–3	176	24.9
	4+	530	75.1
Woman's current work status	Jobless	539	76.4
	Working	167	23.6
<b>Husband's characteristics</b>			
Husband's work status	Jobless	32	4.5
	Working	600	85.1
	Missing	73	10.4
Alcohol consumption	No	511	72.4
FP = Familyplanning, MHC = Maternal health care			

Variables		Number	Percent
Husband's education	Yes	195	27.6
	No education	204	28.9
	Primary	303	43.0
	Secondary	101	14.4
	Higher	29	4.1
	Missing	68	9.7
FP = Familyplanning, MHC = Maternal health care			

## Experience of intimate partner violence and unintended pregnancy

Over all, 64.2% ever married women aged 15–24 experience at least one form of IPV. From the total respondents, 165 (23.4%) women ever experienced physical violence; 62 (8.8%) ever experience sexual violence; 153 (21.6%) ever experienced emotional violence; and 420 (59.5%) reported that their current or former husband/partner demonstrated at least one controlling behaviour. Of all respondents included in the study, 142 (21.1%) reported that either their current pregnancy or recent birth were unintended (Table 2).

Table 2

IPV and unintended pregnancy among ever married women age 15–24 who gave at least one birth in the last 5 years or pregnant at time of survey, 2016 EDHS

Variables	Number	Percent
<b>Physical violence</b>	<b>165</b>	<b>23.4</b>
Push you, shake you, or throw something at you	82	11.5
Slap you	119	16.9
Twist your arm or pull your hair	25	3.5
Punch you with his fist or with something that could hurt you	40	5.7
Kick you, drag you, or beat you up	57	8.0
Try to choke you or burn you on purpose	8	1.1
Threaten or attack you with a knife, gun, or any other weapon	6	0.8
<b>Sexual violence</b>	<b>62</b>	<b>8.8</b>
Physically forced her to have sexual intercourse with him when she did not want to	44	6.2
Physically forced her to perform any other sexual acts she did not want to	32	4.4
Forced her with threats or in any other way to perform sexual acts she did not want to	26	3.6
<b>Emotional violence</b>	<b>153</b>	<b>21.6</b>
Say or do something to humiliate you in front of others	75	10.6
Threaten to hurt or harm you or someone close to you	54	7.6
Insult you or make you feel bad about yourself	115	16.3
<b>Marital control</b>	<b>420</b>	<b>59.5</b>
Jealous or angry if she talks to other men	302	42.8
Frequently accuses her of being unfaithful	67	9.5
Does not permit her to meet her female friends	111	15.7
Tries to limit her contact with her family	95	13.5
Insists on knowing where she is at all times	267	37.9
<b>Any form of IPV (composite score)</b>	<b>453</b>	<b>64.2</b>
<b>Unintended pregnancy</b>	<b>149</b>	<b>21.1</b>

## The association between intimate partner violence and unintended pregnancy

In the bivariate analysis age, parity, residence, education, wealth, employment status, ever use of contraceptive, ideal family size, and decision maker for using maternal health care were significantly associated with unintended pregnancy. The final model of analysis showed the adjusted effects of IPV on unintended pregnancy. As a result physical violence, marital control and emotional violence was strongly associated with unintended pregnancy, while any form of violence and sexual violence have no significant relation with unintended pregnancy. After adjusting for



possible confounders (age, parity, residence, education, wealth, employment status, ever use of contraceptive, ideal family size, and decision maker for using maternal health care), women who ever experienced physical violence (AOR: 1.54; 95% CI = 1.02–2.34), marital control (AOR: 1.68; 95% CI = 1.13–2.48) and emotional violence (AOR: 1.90; 95% CI = 1.25–2.89) had increased odds of experiencing unintended pregnancy, compared to those who had no history of the respective form of violence (Table 3).

Table 3  
Bivariate and multivariate logistic regression analyses showing the relationship between IPV and unintended pregnancy in Ethiopia, 2016

Type of violence		Unadjusted			Model 1			Model 2*					
		COR	CI (95%)		P value	AOR	CI (95%)		P value	AOR	CI (95%)		P value
Any form of violence	No	1			.000	1			.000	1			.072
	Yes	0.31	0.25	0.38		0.58	.016	.212		1.44	0.96	2.15	
Physical violence	No	1			.018	1			.639	1			.040
	Yes	1.62	1.08	2.43		1.13	0.66	1.94		1.54	1.02	2.34	
Sexual violence	No	1			.403	1			.830	1			.524
	Yes	1.29	0.71	2.36		0.93	0.48	1.78		1.22	0.65	2.28	
Emotional violence	No	1			.000	1			.018	1			.003
	Yes	2.09	1.39	3.13		1.89	1.11	3.23		1.90	1.25	2.89	
Marital control	No	1			.002	1			.023	1			.009
	Yes	1.84	1.25	2.72		4.40	1.22	15.8		1.68	1.13	2.48	
* Adjusted for age, parity, residence, education, wealth, employment status, ever use of contraceptive, ideal family size, and decision maker for using maternal health care.													

## Discussion

This study examined the effect of IPV on unintended pregnancy among young women aged 15–24 years in Ethiopia using 2016 Demographic and Health Survey data. We found that 21.1% of participants reported either their current pregnancies or recent births were an unintended; which is nearly close to the national rate of unintended pregnancy among women of reproductive age (25%) (18) indicating that unintended pregnancy is common among younger population. In the same age group (15–24), relatively consistent findings were reported in Nepal (22.7%) (21), Bangladesh (23%) and India (18%) (22). Higher rate of unintended pregnancies among women of reproductive age was reported in sub-Saharan Africa countries (25.9%) (23), and among adolescent and young women in South Africa (41.9%) (24). Underuse of contraceptives could be attributed to these high rate of unintended pregnancy (25), and the involvement of only unmarried adolescent girls and young women in a study conducted in South Africa may not result a generalizable finding (24).

Most literature considers IPV as a composite measure of physical, sexual and emotional violence only, and exclude marital control. However, considering the influence of partner controlling behaviour on women's decision-making power, health service utilization (26), and fertility control (27, 28); we have adopted the WHO definition of IPV (29) p89 and included marital control as one form of IPV in our study. We found that 64.2% of women aged 15–24 experience

at least one form of IPV (physical, sexual, emotional or marital control). It was similar with the national overall prevalence of any form of IPV (64%) among women of reproductive age (30), suggesting that adolescent and young women aged 15–24 year takes the greater proportion of overall IPV. On the other hand, the overall prevalence of IPV in this study was much greater than sub-Saharan Africa women (44%) (31), which could be related to study participants age difference and the later study investigated any form of IPV as a composite measure of physical, sexual, and emotional violence only. When we compare with a similar age group (15–24 year), the overall prevalence of IPV in this study was higher than IPV (physical or sexual) reported in India (38%), Bangladesh (52%) and Nepal (28%) (22), keeping a difference in estimating the overall prevalence of IPV.

In the present study the most prevalent form of IPV was marital control (59.5%) and the least prevalent was sexual IPV (8.8%). It was consistent with a study conducted using similar data among women of reproductive age that reported marital control (56.4%) as the most prevalent and sexual IPV (11.9%) as the least prevalent form IPV (30), which implies the occurrence of similar form of IPV across different age groups. On the other side, a systematic review and meta-analysis of cross-sectional studies in sub-Saharan Africa indicated emotional IPV as the most prevalent and sexual IPV as least prevalent form of IPV (31). The lower incidence of sexual IPV might be related to underreporting by victimized women due to fear of discrimination and feeling shame.

The current study investigated unintended pregnancy in relation to different forms of IPV in Ethiopia. We found that physical violence, marital control and emotional violence by intimate partner have a significant effect on unintended pregnancy. After adjusting for potential confounding factors, unintended pregnancy was significantly associated with reporting physical IPV. Other studies have shown a similar association (22, 32). This could be because women who were physically mistreated by their husbands were less likely to use contraceptives (33), their husbands refused to use condoms or tried to stop them from using a contraceptive (34), or discontinued the use of spacing methods because of fear.

In this study those who ever experienced marital control behaviour had increased odds of unintended pregnancy, after adjusting for possible confounders. Similar finding was reported by a study done among Nicaraguan women (35) which could be due to a reason that controlling behavior by a partner can interfere with women's reproductive freedom through hindering contraceptive use by limiting their autonomy, access to health care, or by facilitating contraceptive failure (36). In Ethiopia, where patriarchal views are common, the decision to seek care is usually made by male partners and they are the chief providers which often determining women's access to economic resources (37).

After adjusting for possible confounders, women who ever experienced emotional violence had increased odds of unintended pregnancy. It was consistent with a study conducted using similar data among women of reproductive age in Ethiopia (30) and population-based study in southern Spain (38). Experiencing emotional intimate violence could be related with a limited autonomy in controlling their fertility and are most likely to be discouraged for using contraceptive methods by their husband/partners. Therefore, it suggests the need to involve male partners and efforts should be made to improve awareness of the male partner's on fertility control through community based health education.

Furthermore, in this study any form of IPV and sexual IPV had no significant effect on unintended pregnancy. The lack of significant association between any form of IPV with unintended pregnancy was supported by a similar study conducted among women of reproductive age in Ethiopia (30) but contradicts with other study findings (39, 40). Contrary to the general argument, the association between sexual IPV and unintended pregnancy was not significant. Although a study conducted in Nepal (22) indicated no significant effect of sexual IPV on unintended pregnancy, the

reasons for this is uncertain. We assume that this could have been due to small sample size that may affect the results. Moreover, further investigation is needed to explore the nature of these associations.

Previous studies have focused mostly on women of reproductive age group (15–49), whereas this study presents the relationship between IPV and unintended pregnancy among adolescents and young women. Our findings further add to the growing body of knowledge by showing a higher prevalence of unintended pregnancy and IPV among adolescent and young women, despite improved contraceptive use among women of reproductive age group in Ethiopia. This study also reinforces the findings on the effect of different form of IPV on unintended pregnancy indicating physical violence, marital control and emotional violence has been linked to unintended pregnancies. The mechanisms for the occurrence of these relation merit further investigation.

The findings of this study need to be interpreted in the light of some limitations. It was difficult to determine direct relationship between IPV and unintended pregnancy due to cross-sectional nature of the data used for analysis. The sensitive nature of IPV and recall bias may lead to under-reporting while sharing experiences of IPV. Additionally, unintended births may have been under-reported after a child is born because of the joy associated with having a child.

## **Conclusion**

This study found a higher prevalence of unintended pregnancy and different form of IPV among adolescent and young women in Ethiopia; with marital control being the most prevalent. Physical violence, marital control and emotional violence by intimate partner were significantly associated with unintended pregnancy, suggesting that young women who report an unintended pregnancy may experience physical violence, marital control or emotional violence. These findings indicate the need to include IPV screening and treatment in different reproductive health services.

Therefore, reducing unintended pregnancy among adolescent and young girls requires interventions beyond increasing access to contraceptive information and services; empowering women, promoting men's involvement in fertility control measures, and optimizing intimate partners relationship is critical. Physical violence, marital control and emotional violence by intimate partner appeared to be more useful for predicting unintended pregnancy among young women.

## **Abbreviations**

DHS = Demographic Health Survey

EDHS = Ethiopian Demographic Health Survey

IPV = Intimate Partner Violence

LMICs = Low and Middle Income Countries

WHO = World Health Organization

## **Declarations**

**Ethics approval and consent to participate**

The original survey was conducted after being ethically approved by the National Research Ethics Review Committee (NRERC) (Ref. No: 3.10/114/2016). The interview continued only if participants consent to participate and privacy was certain.

### **Consent for publication**

Prior to analysis, the authorisation for using the data in this study was granted from the DHS program upon submission of the aims of the study and the research plan. After data access is authorized we have maintained the confidentiality of the data.

### **Availability of data and materials**

The data that support the findings of this study are available from the DHS program at [www.measuredhs.com](http://www.measuredhs.com) but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of the DHS program.

### **Competing interests**

The authors declare that they have no competing interests.

### **Funding**

The authors received no specific funding for this work.

### **Authors' contributions**

AG and GA made substantial contributions to the conception of the study. AG and GA analyzed and interpreted the data, drafted and revised the manuscript. All authors read and approved the final manuscript.

### **Acknowledgements**

The authors would like to acknowledge the MEASURE DHS program for providing the EDHS datasets.

## **References**

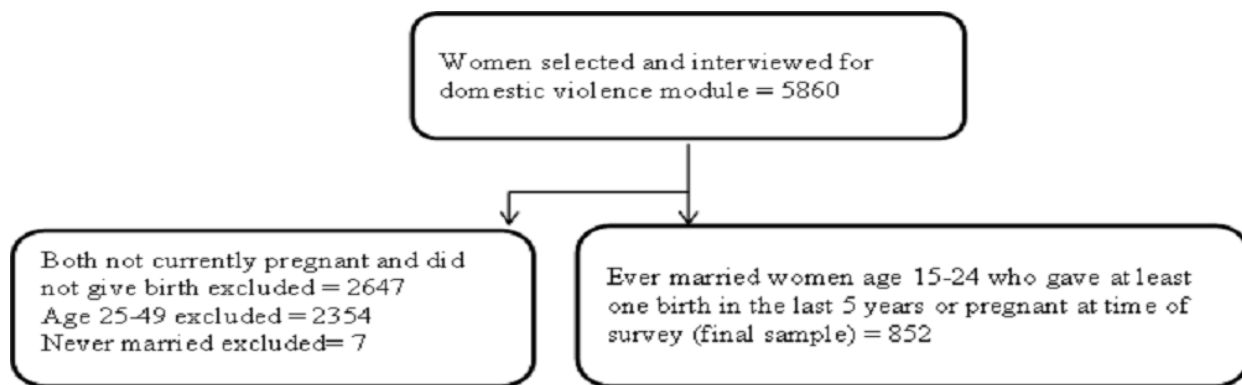
1. Report W. Violence against women, Intimate partner and sexual violence against women. Geneva, Switzerland: Department of Reproductive Health and Research, World Health Organization, 2014.
2. Nations U. Declaration on the elimination of violence against women. New York 23 February 1994.
3. PRB UI. Gender-Based violence: Impediment to reproductive health. New York, NY, USA: In Population Reference Bureau; USAID, 2010.
4. K. M. Devries JYTM, C. Garcí a-Moreno et al. Global prevalence of intimate partner violence against women. Science, . 2013;340(6147):1527-8.
5. Department of Reproductive Health and Research WHO. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence. Geneva, World Health Organization: 2013.
6. C. Garcí a-Moreno HJ, M. Ellsberg, L. Heise, and C. H. Watts. WHO Multi-Country Study on Women's Health and Domestic Violence against Women: Initial Results on Prevalence, Health Outcomes and Women's Responses.

2005, WHO, Geneva, Switzerland.

7. Understanding and addressing violence against women," Intimate Partner Violence [Internet]. 2012.
8. Lukasse M, Laanpere, M., Karro, H., Kristjansdottir, H., Schroll, A. M., Van Parys, A. S., & Schei, B. Pregnancy intendedness and the association with physical, sexual and emotional abuse—a European multi-country cross-sectional study. *BMC Pregnancy and Childbirth*. 2015;15(1), 120.
9. Christina C. Pallitto JCC, Patricia O'Campo. Is Intimate Partner Violence Associated with Unintended Pregnancy? A Review of the Literature. July 1, 2005.
10. Maxwell L D, K., Zions, D., Alhusen, J. L., & Campbell, J. Estimating the effect of intimate partner violence on women's use of contraception: A systematic review and meta-analysis. *PLoS One*. 2015;10(2)(e0118234 <https://doi.org/10.1371/journal.pone0118234> PMID: 25693056).
11. Miller E D, M. R., McCauley, H. L., Tancredi, D. J., Levenson, R. R., Waldman, J., & Silverman, J. G. Pregnancy coercion, intimate partner violence and unintended pregnancy. *Contraception*. 2010;81(4), 316–322.
12. M. N. Unintended pregnancy induced abortion among female youths; a case study of femeke district in Tanzania. 2012.
13. PAI. Why population matter to Maternal health. Washington: Population Action International Healthy Family Planet. 2011.
14. Sexual violence and unwanted pregnancy: Protecting the human rights of adolescent girls and young women [Internet].
15. Singh S RL SG, Kwok L, Onda T. Abortion worldwide 2017: uneven Progress and unequal Access. . New York, Guttmacher Institute. 2018.
16. Woog VaAK. The Sexual and Reproductive Health Needs of Very Young Adolescents Aged 10–14 in Developing Countries: What Does the Evidence Show? . New York: Guttmacher Institute.[https://www.guttmacher.org/sites/default/files/report\\_pdf/srh-needs-very-young-adolescents-report\\_0.pdf](https://www.guttmacher.org/sites/default/files/report_pdf/srh-needs-very-young-adolescents-report_0.pdf), accessed 26 June 2018, 2013.
17. Women U. Shelters for Women and Girls Who Are Survivors of Violence in Ethiopia. Addis Ababa, Ethiopia. Ethiopia: Women U, 2016.
18. CSACEa I. Ethiopia Demographic and Health Survey 2016. Addis Ababa, Ethiopia, and Rockville, Maryland, USA: CSA and ICF, 2016.
19. HCaR A. Exploring the intersections between teenage pregnancy and gender violence: lessons from Zimbabwe. *African Journal of Reproductive Health*. 1999;3(1):51–65.
20. JRe A. Relationship dynamics and teenage pregnancy in South Africa. *Social Science & Medicine*. 2001;52(5):733–744.
21. al. Ae. Sexual violence as a predictor of unintended pregnancy among married young women: evidence from the 2016 Nepal demographic and health survey. *BMC Pregnancy and Childbirth*. 2019;19:196(<https://doi.org/10.1186/s12884-019-2342-3>).
22. Enu Anand SUaJS. INTIMATE PARTNER VIOLENCE AND UNINTENDED PREGNANCY AMONG ADOLESCENT AND YOUNG ADULT MARRIED WOMEN IN SOUTH ASIA. *Journal of Biosocial Science*. 2016.
23. al BOAe. Effect of sexual violence on planned, mistimed and unwanted pregnancies among women of reproductive age in sub-Saharan Africa: A multi-country analysis of Demographic and Health Surveys. *SSM - Population Health* 2020;11, 100601.
24. Ezegbe Aa. Association between sexual violence and unintended pregnancy among adolescent girls and young women in South Africa. *BMC Public Health*. 2020;20:1370.

25. Bellizzi S PG, Menchini L, Barry J, Sotgiu G, Bassat Q. The impact of underuse of modern methods of contraception among adolescents with unintended pregnancies in 12 low-and middle-income countries. *J Glob Health*. 2019;9(2):020429.
26. Krantz G ND. The role of controlling behaviour in intimate partner violence and its health effects: a population based study from rural Vietnam. *BMC Public Health*. 2009;9:143.
27. Miller E MH, Tancredi DJ, Decker MR, Anderson H, Silverman JG. Recent reproductive coercion and unintended pregnancy among female family planning clients. *Contraception*. 2014;89(2):122–8.
28. Samankasikorn W AJ, Yan G, Schminkey DL, Bullock L. Relationships of reproductive coercion and intimate partner violence to unintended pregnancy. *J Obstet Gynecol Neonatal Nurs*. 2019;48(1):50–8.
29. Krug EG DL, Mercy JA, Zwi AB, Lozano R. World report on violence and health. Geneva: World Health Organization. 2002.
30. Tenaw Yimer Tiruye MLH, Catherine Chojenta, Elizabeth Holliday and Deborah Loxton. The mediation effect of contraceptive use and women's autonomy on the relationship between intimate partner violence and unintended pregnancy in Ethiopia. *BMC Public Health*. 2020;20:1408.
31. Muluken Dessalegn Muluneh VS, Lyn Francis and Kingsley Agho. Gender Based Violence against Women in Sub-Saharan Africa: A Systematic Review and Meta-Analysis of Cross-Sectional Studies. *International Journal of Environmental Research and Public Health*. 2020;17, 903([www.mdpi.com/journal/ijerph](http://www.mdpi.com/journal/ijerph)).
32. Shahina begum sND, arvind pandey, suneeta mittal. Association between domestic violence and unintended pregnancies in India: Findings from the National Family Health Survey-2 data. *The national medical journal of India*. 2010;23(4).
33. Stephenson R KM, Acharya R, Roy TK. Domestic violence, contraceptive use, and unwanted pregnancy in rural India. *Stud Fam Plann* 2008;39(1):77-86.
34. Fanslow J WA, Silva M, Robinson E. Contraceptive use and associations with intimate partner violence among a population-based sample of New Zealand women. *Aust N Z J Obstet Gynaecol* 2008;48(8):3-9.
35. Sebastian MSaMS. Violence against women and unintended pregnancies in Nicaragua: a population-based multilevel study. *BMC Women's Health*. 2014;14:26.
36. Moore AM FL, Miller E. Male reproductive control of women who have experienced intimate partner violence in the United States. *Soc Sci Med* 2010;70:1737–1744.
37. Abeya SG AM, Yalew AW. Intimate partner violence against women in West Ethiopia: a qualitative study on attitudes, woman's response, and suggested measures as perceived by community members. *Reprod Health*. 2012;9:14.
38. etal S. Unintended pregnancy and intimate partner violence around pregnancy in a population-based study. <https://doi.org/10.1016/j.wombi.2015.01.003>. 2015.
39. Silverman JG GJ, Decker MR, Kapur N, Raj A. Intimate partner violence and unwanted pregnancy, miscarriage, induced abortion, and stillbirth among a national sample of Bangladeshi women. *Bjog*. 2007;114(10):1246–52.
40. Zakar R NM, Zakar MZ, Ali H. The association of intimate partner violence with unintended pregnancy and pregnancy loss in Pakistan. *Int J Gynaecol Obstet*. 2016;133(1):26–31.

## Figures



**Figure 1**

Flow chart showing a sampling procedure for selection of study sample.