Original article

Intimate partner violence and unmet need for contraceptive use among Ethiopian women living in marital union

Negussie Deyessa[1], Abebaye Argaw[2]

Abstract

Background: The nature of the association between intimate partner violence (IPV) and unmet need for family planning is likely complex. It is important to understand the relationship in low-resource settingswhere the rates of IPV and unmet need for contraceptives are high,even after controlling for socio-demographic and other important reproductive health factors.

Methods: The study employed a cross-sectional design using data from the 2016 EthiopianDemographicandHealth Survey. A total of 2810 woman in marital union were included in the study. Interviews with the women assessed unmet need for contraceptivesusing the indicator of whether the last pregnancy was wanted at the time of conception, or not wanted at all. Intimate partner violence was defined as a woman having experienced either physical or sexual violence by their partner. The association wasillustrated crudely and after adjusting for some sociodemographic and reproductive characteristics of the women.

Results: The study found that the lifetime prevalence of intimate partner violence among women in marital union was23.8%. The level of unmet need for contraceptives for the last pregnancy was 22.0%, (13.9% for spacing and 8.1% for total limiting of bearing a child). Intimate partner violence, measured by experience of physical or sexual violence, was strongly associated with unmet need for contraceptives, even after adjusting for some sociodemographic, fertility, and gender related characteristics [AOR=3.03; 95% CI, (2.45, 3.75)].

Conclusion: Intimate partner is strongly associated with unmet need for contraceptives among Ethiopian women living in marital union. Policy makers working in family planning should consider prevention of gender-based violence, particularly intimate partner violence. [*Ethiop. J. Health Dev.* 2018;32(3):129-137]

Key words: IPV, Unmet need, contraception, Ethiopia, EDHS

Introduction

Women in the developing world have high rates of intimate partner violence (IPV) compared to developed countries, ranging from 10% in nationwide study in Philippines to about 78.8% in Igbo communities, Nigeria, and 70.1% in Ethiopiam (1-3). Studies have shown that IPV is associated with various health outcomes for women, including several reproductive health outcomes, such as unmet need for contraceptives, unintended pregnancies, induced abortion, and contraceptive none use (4-7). Unmet need for contraceptives includes fecund women who live in a union that do not use any form of contraceptive method and who neither want to have any more children (for limiting births) or want to postpone their next birth (for spacing births) (8-10). Therefore, this concept clearly indicates a gap between a woman's reproductive intention and contraceptive use behavior.

In developing countries, women with unmet need account for a higher fraction of all married women under union of reproductive age. Data from some Sub-Saharan African countries showsthat around a quarter (24%) of married women haveunmet need for contraceptives, with 23% of married women from Western and Central Africa, 28% from Eastern Africa, and 16% from Southern Africa havingunmet need for family planning (11). Of course, these averages may mask the variation within geographic areas; for example, in Eastern Africa, unmet need is high in Uganda at 41%and 23% in Madagascar (11). In Ethiopia, the 2000 and 2005 Demographic and Health Survey (DHS) data depict the level of unmet need among women between 15 and 49 years as 36% and 34%, respectively (12, 13). The 2011 DHS data indicate a high decrease in the unmet need for contraceptiveswith 25% of married women having unmet need for contraceptives (16% for spacing and 9% for limiting) (14).

Various factors including women's social, cultural, and economic factors may influence their decisions to use contraceptives. Several studies have examined whether experiencing intimate partner violence (IPV) is associated with contraceptive use. However, they all have controversial findings. There are studies which report that women experiencing IPV report lower use of contraceptives than those who do not experience violence. (15-18)Other studies report higher level of contraceptive use among women who experience IPV than those who do not.(19-21) There are also studies that report absence of association between IPV and contraceptive use after using different statistical analysis methods (22).

As the nature of the association between IPV and unmet need for family planning is likely complex, it is important to understand the relationship, especially in developing countrieswhere the rates of IPV as well as unmet need for contraceptive are the highest in the world. Previous studies in Ethiopia have assessed general risk factors for unmet need for family planning (23-25) as well as factors related to intimate partner violence.(26-29) However, there are limited data illustrating the relationship between IPV and unmet need for contraceptive. The hypothesis of this paper is

[1]School of Public Health, Addis Ababa University, E-mail: negdaysun@yahoo.com, Addis Ababa Ethiopia
[2]E-mail: abebaye.aragaw@aau.edu.et

that women who have ever experienced physical or sexual violence from the most recent partner will report higher level of unmet need for contraceptives for the last pregnancy compared with womenwho have never experienced intimate partner violence, after controlling for key covariates. This paper investigates the relationship between lifetime prevalence of IPV and unmet need for contraceptives for the last pregnancy of women using population-based samples from the 2016 Ethiopian Demographic and Health Survey.

Methods

The study is based on the analysis of secondary data obtained from the 2016 Ethiopia DHS.(30) Ethiopia is administratively structured into nine regional states, and two city administration councils (31). Using a cross-sectional study design, information was gathered from the women's questionnaire, in which women of reproductive age (15–49) were interviewedabout their reproductive and sexual history, including contraceptive practices, fertility desires, experience of violence by intimate partners and births in the last five years. The women's questionnaire also included their intention to conceive at the time of pregnancy, for the live birth children born in the last five years (32). Inclusion criteria for the study encompassed women in reproductive age, currently in marital union, who had a live-delivery in the past five years of the interview or were pregnant during interview, and women who completed interviewsfor the DHS module on violence against women. Women who didnot respond about intention to conceive for their last pregnancy were excluded.

Of the 15,683 women surveyed for the whole package, 9,824 were in marital union (i.e., legally married or in a cohabiting relationship). About 43% (4,243) of those married women were selected to answer a series of questions related to intimate partner violence (IPV). Due to lack of privacy, 718 did not complete the interview due to a lack of privacy. Of the women who responded to the domestic violence questionnaire, 715 women were infecund or on a menopause, and were excluded from the study. The final study group included 2,810 eligible women (30).

Method of data collection

Intimate partner violence: The major independent variable of the study was experience of intimate partner violence. A woman was considered as experiencing physical violence if she responded that her spouse had pushed her, bitten her, kicked or dragged her, hit her with his hand, hit her with a hard object, tried to choke or burn her, threatened her with a knife or gun, or attacked her with a knife or gun. A woman was classified as having experienced sexual abuse, if she stated that her spouse had physically forced her to have sexual intercourse even when she did not want to; or physically forced her to perform any other sexual act she did not want to; or force her with threats or in any other way to perform sexual acts she did not want to. Responses to questions about physical and sexual violence were combined to categorize respondents as having experienced IPV - if they indicated experience of any one or more of the indicators of physical or sexual violence – or never having experienced IPV (32, 33).

Unmet need for contraceptives: Unmet need for contraceptives was considered as the outcome variable. Study participantswere asked if they had live birth from their last pregnancy,within the past five years,and whether the current pregnancy was planned. For each pregnancy in the last five years, respondents were askedwhether the pregnancy was wanted at the time of conception, waswanted later in the pregnancy, or not wanted at all (33). The unmet need of women was dichotomized as 0: pregnancy wanted then; 1: live birth wanted later or not wanted at all (32, 33).

***Other explanatory variables*:** Demographic variables included were women's age, number of children, urban or rural residence and educational level. To measure socioeconomic status, the five categoriesof wealth index used by DHS werefurther collapsedinto three categories:poor, middle and rich (32, 33). Reproductive health characteristics of women were assessed using number of live births, presence of polygamous marriage and age at first sex. Gender related variables such asspousal control, attitude of justifiability of beating, and decision-making power, were included in the analysis. Spousal control was measured using the six-item spousal control questionnaire (27, 35), and women were categorized as totally, partially and not controlled at all. Attitude of justifiability of beating a woman was assessed using a five-item questionnaire and categorized into totally, partially and not justifying beating at all. Decision-making power was measured after computing the six-item decision-making scale intowho mostly decides, either the respondent, the spouse or both couples.

Analyses and data management: All analyses wereconducted using SPSS version 25 for Windows (34). Descriptive statistics werecalculatedfor demographic and socio-economic variables. Socio-demographic characteristics of the study participantswere compared with women living in marital union.

Bivariate logistic regression was used to calculate the unadjusted odds of unmet need for family planning associated with the summary measure of physical or sexual abuse, respondents' demographic, fertility and gender-related characteristics.Based on the findings from the bivariate analysis,a series of multiple logistic regression models was constructed, each of which included unmet need for family planning as the outcome variable and experiencing intimate partner violence as the main explanatory variable.In the multivariate analysis, stepwise models of the associationbetween IPV and unmet need for contraceptives wereconstructed, adjusting first for sociodemographic variables, then for fertility related characteristics and finally including gender related characteristics. Thishelped to assess whether unmet need for family planningwas related to experiencing physical or sexual violence mainly relate, using

multinomial logistic regression. The population-level odds ratio of unmet need for family planning that could be attributed to intimate partner violence (i.e., population-attributable risk), after adjusting for confounding factors, was calculated to estimate the reduction in unmet need for family planning that would result if intimate partner violence could be eliminated.

Results

The study included 2810 married women, who had a live birth in the past five years or who were pregnant at the time of interview. More than half (51.1%) were in the age group between 25 and 34 years, and more than a quarter (26.9%) were under 25 years of age group. More than four in five (81.3%) live in rural communities, and almost two-third (62.2%) never had formal education, while 27.6% didnot complete elementary schooling. The majority of participants were Muslim (47.7%) followed by Orthodox (31.4%). More than half (52.6%) of the participants were categorized as poor, and 32.5% as rich, using the adjusted 3-point wealth index. In the study, almost two-thirds (63%) of the study participants have at least three or more live borne children, and more than one in ten (13.5%) live in a polygamous marriage.

Our study participants were not much different in age, residence, wealth index, number of live borne children, and being in a polygamous marriage, when compared to other married women interviewed for the 2016 Ethiopian DHS. However, there were slightly higher proportion of non-educated women in the study sample, compared to the overall DHS sample.

Table 1: **Comparison of sample study subjects interviewed on gender-based violence against the women population living in marital union, DHS, 2016**

Characteristics	Data type		Statistics X^2 (df) (p)
	Sample (n=2810) Number (%)	Source data (n= 7014) Number (%)	
Age grouped			
15-24 years	757 (26.9)	1810 (25.8)	$X^2 = 2.172$
25-34 years	1435 (51.1)	3580 (51.0)	(df = 2)
35-49 years	618 (22.0)	1624 (23.2)	(p > 0.1)
Residence			**$X^2 = 0.868$**
Urban	525 (18.7)	1368 (19.5)	(df = 1)
Rural	2285 (81.3)	5646 (80.5)	(p > 0.1)
Educational status			
No formal education	1748 (62.2)	4208 (60.0)	$X^2 = 6.372$
Elementary level	775 (27.6)	1978 (28.2)	(df = 2)
High school or more	287 (10.2)	828 (11.8)	(p < 0.05)
Religion			
Muslim	1339 (47.7)	3290 (46.9)	$X^2 = 9.876$
Orthodox	883 (31.4)	2259 (32.2)	(df = 3)
Protestant	521 (18.5)	1220 (17.4)	(p < 0.05)
Others	67 (2.4)	245 (3.5)	
Wealth index			
The poor	1477 (52.6)	3830 (54.6)	$X^2 = 4.987$
Middle	420 (14.9)	940 (13.4)	(df = 2)
Rich	913 (32.5)	2315 (33.0)	(p > 0.05)
Live-borne children size			
2 or less	1031 (36.7)	2469 (35.2)	$X^2 = 5.214$
3-5 children	1074 (38.2)	2630 (37.5)	(df = 2)
6 or more	705 (25.1)	1915 (27.3)	(p > 0.05)
Spousal polygamy marriage			$X^2 = 0.149$
No	2432 (86.5)	6091 (86.8)	(df = 1)
Yes	378 (13.5)	923 (13.2)	(p > 0.5)
Age at first sex			
Before 15 years old	535 (19.0)	1457 (20.8)	$X^2 = 4.390$
15-17 years	1280 (45.6)	3071 (43.8)	(df = 2)
18 years or more	995 (35.4)	2486(35.4)	(p > 0.1)

Prevalence of IPV and Unmet need for contraceptives: The lifetime prevalence of physical violence by intimate partner was 22.7% with a 95% CI between (21.2% and 24.3%). Prevalence of sexual violence by intimate partner was 10.6% with a 95% CI between (9.5% to 11.8), almost half in magnitude of physical violence. Similarly, prevalence of unmet prevalence for contraceptives was 22.0%, with a 95% CI between 20.5% and 23.6%, where 13.9% for spacing and 8.1% for complete secession of bearing a child, (Table 2).

Table 2: **Magnitude of intimate partner violence and unmet need for contraceptives of women in marital union assessed for IPV, EDHS, 2016**

Event	Sample	Prevalence	
		Number (%)	95% (CI)
Intimate partner violence			
Physical violence (lifetime)	2810	639 (22.7)	(21.2 – 24.3)
Sexual violence (lifetime)	2810	298 (10.6)	(9.5 – 11.8)
Physical or sexual violence (lifetime)	2810	670 (23.8)	(22.3 – 25.5)
Unmet need for contraceptive			
Unmet need (for spacing)	2810	391 (13.9)	(12.7 – 15.2)
Unmet need (for limiting)	2810	228 (8.1)	(7.5 – 9.5)
Unmet need (Overall)	2810	619 (22.0)	(20.5 – 23.6)

Demographic correlates of unmet need for contraceptives and IPV: Unmet need for contraceptives was significantly higher among women who experienced physical violence [OR=3.78; 95% CI (3.12, 4.59)], sexual violence [OR=1.81; 95% CI (1.39, 2.35)], and either physical or sexual violence [OR=3.46; 95% CI (2.86, 4.20)] than women who did not experience violence. The likelihood of experiencing intimate partner violence was higher among women in the 35 and 49 age group, among women living in rural areas [OR=1.61 95% CI; (1.26, 2.05)], among women who were partially [OR=3.92; 95% CI; (3.92, 4.85)] or completely controlled by their spouses [OR=8.70; 95% CI; (6.61, 11.4)], women who were totally justifying for beating [OR=1.46; 95% CI; (1.20, 1.78)], those who indicated themselves as primary decision makers [OR=1.36; 95% CI; (1.03, 1.80)] or spouses as decision-makers [OR=1.64; 95% CI; (1.35, 2.00)], and women who have more than 6 live borne children [OR=1.68; 95% CI; (1.15, 1.82)] compared to their referents. However, the likelihood of experiencing physical or sexual violence by their intimate partner was much lower for women with higher levels of education than their referents. Finally, the study showed that the odds of experiencing physical or sexual violence did not varying by wealth index and polygamous relationships (Table 3).

The chance of having unmet need for contraceptives was higher among women between 35 and 49 years of age, women living in rural areas, and women who had a higher wealth index than their referents. Unmet need for contraceptives was significantly higher among women who claimed to be totally or partially controlled by their spouses, women who totally believe that beatingwomen is justified, women whose decision was by themselves and by their spouses and women who have 3 or more live borne children compared to their referents. Moreover, the chance of having unmet need for contraceptives was significantly lower in women residing in rural areas and women living in a polygamous marriage, compared to their referents, (Table 3).

Association of IPV and unmet need for contraceptives: Using multinomial logistic regression, assessment of intimate partner violence against type of unmet need showed that the odds of unmet need for spacing was more than 1.4 times higher among women who experienced physical violence (OR = 2.31; 95% CI (1.82, 2.94)), and sexual violence (OR = 1.41; 95% CI (1.01, 1.97)), and physical or sexual violence (OR = 2.10; 95% CI (1.66, 2.67),) than women who never experienced any violence. Similarly, the chance of unmet contraceptive needs for having no more children was higher among women who experienced physical violence (OR = 8.44; 95% CI (6.30, 11.3)), sexual violence (OR = 2.56; 95% CI (1.80, 3.64)), and physical or sexual violence (OR = 7.82; 95% CI (5.85, 10.5)), than women who never experienced violence (Table 4).

Association of IPV with unmet need for contraceptives was assessed after adjusting for sociodemographic characteristics (model I), after including fertility characteristics(model 2), and after adding gender related characteristics (model 3). The odds of having unmet need for contraceptives was more than three times higher among women who experienced physical or sexual violence compared to women who never experienced violence by an intimate partner (Model 1: AOR=3.25; 95% CI (2.67, 3.96)), (Model 2: AOR = 3.29; 95% CI (2.70,4.01)), and (Model 3: AOR = 3.03; 95% CI (2.45, 3.75)) (Table 5).

Table 3: **Assessment of factors associated with physical or sexual violence and with unmet need of contraceptives of women living in marital union, EDHS, 2016**

Characteristics	Sample	Physical or sexual Violence		Unmet need for contraceptives	
		Numb (%)	COR (95%, CI)	Numb (%)	COR (95%, CI)
Age grouped					
15-24 years	757	160 (21.1)	1.00	135 (17.8)	1.00
25-34 years	1435	338 (23.6)	1.15 (0.93, 1.42)	305 (21.3)	1.24 (0.99, 1.56)
35-49 years	618	172 (27.8)	1.44 (1.12, 1.84)	179 (29.0)	1.88 (1.46, 2.42)
Residence					
Urban	528	92 (17.4)	1.00	82 (15.5)	1.00
Rural	2282	578 (25.3)	1.61 (1.26, 2.05)	537 (23.5)	1.67 (1.30, 2.16)
Educational status					
No formal education	1822	459 (25.2)	1.00	439 (24.1)	1.00
Elementary leve	722	166 (23.0)	0.89 (0.72, 1.09)	138 (19.1)	0.74 (0.60, 0.92)
High school or more	266	45 (16.9)	0.61 (0.43, 0.85)	42 (15.8)	0.59 (0.42, 0.84)
Wealth index					
The poor	1477	350 (23.7)	1.00	292 (19.8)	1.00
Middle	420	113 (26.9)	1.19 (0.93, 1.52)	92 (21.9)	1.14 (0.87, 1.48)
Rich	913	207 (22.7)	0.94 (0.78, 1.15)	235 (25.7)	1.41 (1.16, 1.71)
Spousal control					
Not controlled	1362	145 (10.6)	1.00	247 (18.1)	1.00
Partially controlled	1112	354 (31.8)	3.92(3.92, 4.85)	265 (23.8)	1.41 (1.16, 1.72)
Totally controlled	336	171 (50.9)	8.70 (6.61, 11.4)	107 (31.8)	2.11 (1.61, 2.76)
Beating justified					
Not justified	1185	270 (22.8)	1.00	224 (18.9)	1.00
Partially justified	538	130 (24.2)	1.22 (0.95, 1.57)	119 (22.1)	1.22 (0.95, 1.57)
Totally justified	1087	270 (24.8)	1.46 (1.20, 1.78)	276 (25.4)	1.46 (1.20, 1.78)
Decision making power					
Respondent (most)	297	79 (26.6)	1.36 (1.03, 1.80)	75 (25.3)	1.33 (1.00, 1.77)
Souse (most of the time)	680	207 (30.4)	1.64 (1.35, 2.00)	173 (25.4)	1.34 (1.09, 1.65)
Both in common	1825	384 (21.0)	1.00	370 (20.3)	1.00
Spousal polygamy marriage					
No	2432	572 (23.5)	1.00	507 (20.8)	1.00
Yes	378	98 (25.9)	1.14 (0.89, 1.46)	43 (11.4)	0.62 (0.46, 0.83)
Live borne children					
2 children or less	1031	222 (21.5)	1.00	194 (18.8)	1.00
3-5 children	1074	264 (24.6)	1.19 (0.97, 1.46)	248 (23.1)	1.30 (1.05, 1.60)
6 children or more	705	184 (26.1)	1.29 (1.03, 1.61)	177 (25.1)	1.68 (1.15, 1.82)
Presence of physical violence					
No	2171	= = =	= = = = = =	350 (16.1)	1.00
Present	639	= = =	= = = = = =	269 (42.1)	3.78 (3.12, 4.59)
Presence of sexual violence					
No	2512	= = =	= = = = = =	523 (20.8)	1.00
Present	298	= = =	= = = = = =	96 (32.2)	1.81 (1.39, 2.35)
Presence of phys. sexual violence					
No	2140	= = =	= = = = = =	349 (16.3)	1.00
Present	670	= = =	= = = = = =	270 (40.3)	3.46 (2.86, 4.20)

Table 4: **Assessment of physical or sexual violence with type of unmet need of contraceptives of women living in marital union, EDHS, 2016**

Characteristics	Unmet need for:	
	Spacing OR (95% CI)	No more child OR (95% CI)
Physical or sexual violence		
No	1.00	1.00
Present	2.31 (1.82, 2.94)	8.44 (6.30, 11.3)
Physical or sexual violence		
No	1.00	1.00
Present	1.41 (1.01, 1.97)	2.56 (1.80, 3.64)
Sexual violence		
No	1.00	1.00
Present	2.10 (1.66, 2.67)	7.82 (5.85, 10.5)

Other factors associated with unmet need for contraceptive: The chance of having unmet need for contraceptive was higher among older womenbetween 35-49 years (AOR= 1.60, 95% CI (1.10, 2.32)), women residing in rural areas (AOR = 2.07; 95% CI (1.50, 2.85)) and women in the rich wealth index (AOR = 2.08; 95% CI (1.62, 2.66)), compared to their referents. The odds of having unmet need for contraceptive was higher among women who had 3-5 live borne children (AOR= 1.70; 95% CI (1.26, 2.30)), or have more than five live-borne children (AOR= 1.87; 95% CI (1.27, 2.75)), and women who were totally under the control of their spouses (AOR= 1.36; 95% CI (1.01, 1.86)) compared to their referents. However, the odds of unmet need for contraceptives was lower among women who were in elementary as well as secondary

or tertiary level of education (AOR= .0.49; 95% CI (0.31, 0.73)), and women who were in a polygamous marriage (AOR= 0.47; 95% CI (0.33, 0.67)), compared to their referents. Furthermore, age group, residence, wealth index, age at first sex and women's belief of justifying spousal beating were statistically associated with unmet need for contraceptives (Table 5).

Table 5: **Assessment of physical or sexual violence with unmet need of contraceptive after adjusting for sociodemographic, reproductive and family relations of women living in marital union, EDHS, 2016**

Characteristics	Unmet need for contraceptive			
	Crude OR (95% CI)	Adjusted* OR (95% CI)	Adjusted** OR (95% CI)	Adjusted*** OR (95% CI)
Physical or sexual violence				
No	1.00	1.00	1.00	1.00
Present	3.46 (2.86, 4.20)	3.25 (2.67, 3.96)	3.29 (2.70, 4.01)	3.03 (2.45, 3.75)
Age grouped				
15-24 years	1.00	1.00	1.00	1.00
25-34 years	1.24 (0.99, 1.56)	1.08 (0.85, 1.38)	1.11 (0.83, 1.48)	1.11 (0.83, 1.48)
35-49 years	1.88 (1.46, 2.42)	1.49 (1.12, 1.97)	1.63 (1.13, 2.35)	1.60 (1.10, 2.32)
Residence				
Urban	1.00	1.00	1.00	1.00
Rural	1.67 (1.30, 2.16)	1.88 (1.38, 2.57)	1.88 (1.37, 2.57)	2.07 (1.50, 2.85)
Educational status				
No formal education	1.00	1.00	1.00	1.00
Elementary level	0.74 (0.60, 0.92)	0.71 (0.55, 0.92)	0.71 (0.54, 0.92)	0.67 (0.51, 0.87)
High school or more	0.59 (0.42, 0.84)	0.55 (0.37, 0.83)	0.54 (0.35, 0.82)	0.48 (0.31, 0.73)
Religion				
Orthodox	1.00	1.00	1.00	1.00
Muslim	0.63 (0.51, 0.78)	0.68 (0.54, 0.84)	0.73 (0.58, 0.91)	0.70 (0.56, 0.88)
Protestant	0.99 (0.77, 1.27)	0.96 (0.74, 1.25)	1.03 (0.79, 1.35)	1.02 (0.78, 1.34)
Others	1.42 (0.84, 2.42)	1.32 (0.75, 2.32)	1.52 (0.85, 2.69)	1.40 (0.77, 2.53)
Wealth index				
The poor	1.00	1.00	1.00	1.00
Middle	1.14 (0.87, 1.48)	1.06 (0.80, 1.40)	1.02 (0.77, 1.36)	1.03 (0.78, 1.38)
Rich	1.41 (1.16, 1.71)	2.11 (1.66, 2.69)	2.04 (1.60, 2.61)	2.08 (1.62, 2.66)
Live-borne children size				
2 or less	1.00	= =	1.00	1.00
3-5 children	1.30 (1.05, 1.60)	= = = = =	1.02 (0.77, 1.36)	1.06 (0.80, 1.41)
6 or more	1.68 (1.15, 1.82)	= = = = =	0.95 (0.67, 1.35)	0.99 (0.69, 1.40)
Spousal polygamy				
No	1.00	= =	1.00	1.00
Yes	0.62 (0.46, 0.83)	= = = = =	0.57 (0.42, 0.79)	0.49 (0.36, 0.68)
Spousal control				
Not controlled	1.00	= =	= =	1.00
Partially controlled	1.41 (1.16, 1.72)	= = = = =	= = = = =	1.09 (0.88, 1.35)
Totally controlled	2.11 (1.61, 2.76)	= = = = =	= = = = =	1.19 (0.88, 1.62)
Beating justified				
Not justified	1.00	= =	= =	1.00
Partially justified	1.22 (0.95, 1.57)	= = = = =	= = = = =	1.35 (1.03, 1.76)
Totally justified	1.46 (1.20, 1.78)	= = = = =	= = = = =	1.74 (1.39, 2.17)
Decision making power				
Respondent (most)	1.33 (1.00, 1.77)	= = = = =	= = = = =	1.49 (1.10, 2.03)
Souse (most of the time)	1.34 (1.09, 1.65)	= = = = =	= = = = =	1.36 (1.08, 1.71)
Both in common	1.00	= =	= =	1.00

Adjusted *: for sociodemographic (age grouped, residence, education, religion and wealth index)
Adjusted** for sociodemographic + fertility related (number of live borne children, polygamy marriage, age at first sex)
Adjusted*** for sociodemographic + fertility related + gender related characteristics (justifying beating, spousal control and decision-making power)

Impact of intimate partner violence on unmet need for contraceptives: The odds-based impact of physical or sexual violence on unmet need for contraception among women exposed to physical violence has an attributable odds of 73.6%, higher than the odds of 61.1% among women in the general population. Experiencing physical or sexual violence has an attributable rate of 59.5% with 95% CI (53.8, 64.6) on women's unmet need for contraceptives, compared to 26% with 95% CI(21.5, 30.5) among married women in the general population.

Table 6: **Odds based impact on unmet need for contraception due to exposure to intimate partner violence among population and exposed women in union, EDHS, 2016.**

Intimate partner violence	Unmet need for contraceptive		Odds based attributions to	
	Num (%)	Num (%)	AR% (95% CI)	AR% (95% CI)
Presence of physical violence				
No	350 (16.1)	1821(83.9)	73.6(67.9, 78.2)	61.1 (40.0, 57.1)
Yes	269 (42.1)	370 (57.9)		
Presence of sexual violence				
No	523 (20.8)	1989(79.2)	44.7 (28.2, 57.4)	6.93(3.55, 0.31)
Yes	96 (32.2)	202 (67.8)		
Presence of phys. sexual violence				
No	349 (16.3)	1791(83.7)	59.5 (53.8, 64.6)	26.0 (21.5, 30.5)
Yes	270 (40.3)	400 (59.7)		

Discussion

In this study, the overall lifetime prevalence of physical violence and sexual violenceby intimate partner was much lower than found inother similar studies in Ethiopia (28, 35, 36). The current study,based ona representative sample of the country, may reflect more aggregated level data from women across different social, cultural and economic backgrounds compared to the previous studies that were more geographicallyand culturally localized. The problem of underreporting has been reported by previous studies andshould be given due attention. This could be due to the sensitive issue of studying IPV that needs cautous and intensive training, understanding and commitment of data collectors in local studies, which may not be fulfilled in studies such as the DHS, which has a wide scope of study. Findings demonstrated by previous local studies that werespecifically designed to capture data on intimate partner violence among women yielded higher rates than analyses of data collected in the intimate partner violence module of the DHS (37). This discrepancy can also be due to the difference in time of data collection. Data for this study were collected15 years after the previous studies in Ethiopia were reported, and the reduction in level of IPV may be attributable to change in gender relations due to promotional interventions by government and non-governmental organizations. The problem of underreporting has been demonstrated by previous studies that showed specifically designed to capture data on intimate partner violence among women yielded higher rates than analyses of data collected in the intimate partner violence module of the DHS (37).

Similarly, the unmet need for contraceptives is lower when compared to previous DHS findings in 2000, 2005 and 2011 (12-14), and this decrease may be a result of interventions supported by government to meet the millennium development goals (37, 38).

The unmet need for contraceptives was higher among women who experienced intimate partner violence, and was consistent with data compiled from a DHS sample of ever-married women in DRC, Malawi, and Tanzania.(39) It is also consistent with studies conducted by Lipsky, in 2007 and by Clark et al in 2017 (4, 40). The higher IPV prevalence among women with unmet need for contraceptives may reflect the possibility that women experiencing IPV do not want to bring a child into an abusive marriage or relationship.

In the present study the unmet need was found to be significantly associated with older age of women and having higher number of living children. Similar observations were also made by Wulifan, et al. (2016) (41) and a study by Gebre, G. et al, (2016), (42). Where the highest percentage of unmet need for family planning was noted in the older age groups. This can be attributed to the fact that the older couples may have completed their desired family size, but may not have sufficient knowledge of various contraceptive methods available or they have fear of the side effects of the contraceptive methods.

Women's educational status was found to influence unmet need for contraceptives. In most of the women, the unmet need declined with women's increasing education; as observed in the Ugandan study that found lower unmet needs among women with secondary or tertary education compared to elementary class (43). The major explanationfor such decrease in unmet need for contraceptives with increase in education may be due to the better knowledge to access health facilities and more information about available contraceptives.

The impact of physical or sexual violence on unmet need for contraceptives has high odds of attribution to the women on exposure and to general women on marital union. This high impact of intimate partner violence on unmet need for contraceptives is due to its strong association and its high prevalence in the general population.

Our study is not free of some limitations. Disclosure of violence against women, which is in general underestimated, could be difficult to avoid totally. The potential for underreporting is an important concern in research on intimate partner violence because of the sensitivity of the subject, social stigma and participants' privacy and safety concerns.

As a cross sectional study design, showing the temporal relationship is generally difficult. We

mitigated for this by measuring unmet need for contraceptives for the last child or pregnancy while measuring lifetime exposure to intimate partner violence. However, this doesn't mean that we were able to totally show a temporal relationship. Although difficult to assess the impact of intimate partner violence on unmet need for contraceptivesin a cross-sectional design, our findings may be a proxy estimation on the magnitude of the impact. Distance to health facility was not measured as the smallest health unit, the health post, exists within eachvillage, and notmuch difference was considered to exist within groups. Financial problems that may hinder mothers from goingto health facilities mayalso distort the relationship, however thiswas not measured as it was assumed to be equally distributed between women who have/have not experienced IPV.

Conclusion

The lifetimie prevalence of intimate partner violence among women in union was22.7% for physical violence, 10.6% for sexual violence and 23.8% for either physical or sexual violence. The level of unmet need for contraceptives for the last pregnancy was 22.0%, of which 13.9% was for spacing while 8.1% was for total limiting of child bearing. Intimate partner violence that was measured by physical or sexual violence was strongly associated with unmet need for contraceptives. The high prevalence and impact of exposure to IPV on unmet need for contraceptives should alert policy makers working in family planning to consider prevention of gender-based violence, particularly intimate partner violence.

Reference

1. Population information Program, Center for Health and Gender Equuity. Ending Violence Against Women. Population Reports. 1999 December 1999:44.
2. Okemgbo C, Omi dA, Odimegwu C. Prevalence, patterns and correlates of domestic violence in selected Igbo communities of Imo State, Nigeria. African journal of reproductive health. 2002;6(2):101-14.
3. Garcia-Moreno C, Jansen HA, Ellsberg M, Heise L, Watts CH. Prevalence of intimate partner violence: findings from the WHO multi-country study on women's health and domestic violence. Lancet. 2006 Oct 7;368(9543):1260-9. PubMed PMID: 17027732.
4. Lipsky S, Caetano R. Impact of intimate partner violence on unmet need for mental health care: results from the NSDUH. Psychiatric services. 2007 Jun;58(6):822-9. PubMed PMID: 17535943.
5. Gomez AM. Sexual violence as a predictor of unintended pregnancy, contraceptive use, and unmet need among female youth in Colombia. Journal of women's health. 2011 Sep;20(9):1349-56. PubMed PMID: 21740193.
6. Forrest W, Arunachalam D, Navaneetham K. Intimate Partner Violence and Contraceptive Use in India: The Moderating Influence of Conflicting Fertility Preferences and Contraceptive Intentions. Journal of biosocial science. 2017 Jun 05:1-15. PubMed PMID: 28578714.
7. Ismayilova L, Nabila E-B. Intimate Partner Physical and Sexual Violence and Outcomes of Unintended Pregnancy Among National Samples of Women From Three Former Soviet Union Countries. Violence against women. 2014;20(6):633-52.
8. Westoff C. The potential demand for family planning: A new measure of unmet need and estimates for five Latin American countries. International Family Planning Perspectives. 1988;14(2):45-53.
9. Westoff C, Bankolle A. The Potential Demographic Significance of unmet need. International Family Planning Perspectives. 1996;22(1):16-20.
10. Westoff C, Ochoa L. Unmet need and the demand for family planning. DHS Comparative Studies. 5. N, editor. Columbia, Maryland, USA1991.
11. UN Population Division, Population Reference Bureau. World Population Prospects: Africa Population Data Sheet, The 2006 Revision (New York: UN, 2006) African Population and Health Research Center 2008.
12. Central Statistical Authority (CSA), ORC Macro. Ethiopia. Demographic and Health Survey 2000. Addis Ababa Ethiopia and Calverton MD., USA 2001.
13. Central Statistical Authority (CSA), ORC Macro. Ethiopia. Demographic and Health Survey 2005. Addis Ababa. . Ethiopia and Calverton MD., USA 2006.
14. Central Statistical Authority (CSA), ORC Macro. Ethiopia. Demographic and Health Survey 2005. Addis Ababa. . Ethiopia and Calverton MD., USA 2012.
15. Gomez AM. Sexual violence as a predictor of unintended pregnancy, contraceptive use, and unmet need among female youth in Colombia. Journal of women's health. 2011;20(9):1349-56.
16. McCleary-Sills J. Jordanian social norms and the risk of intimate partner violence and limited reproductive agency. Journal of International Women's Studies. 2013;14(2):12-29.
17. Laanpere, Made, Inge Ringmets, Kai Part, Karro. H. Intimate partner violence and sexual health outcomes: a population-based study among 16–44-year-old women in Estonia. The European Journal of Public Health. 2012;144.
18. Emenike E, Stephen Lawoko, Koustuv Dalal. Intimate partner violence and reproductive health of women in Kenya. International nursing review. 2008;55(1):97-102.
19. Okenwa, Leah, Stephen Lawoko, Bjarne Jansson. Contraception, reproductive health and pregnancy outcomes among women exposed to intimate partner violence in Nigeria. The European Journal of Contraception and Reproductive Health Care. 2011;16(1):18-25.
20. Dalal, Koustuv, Johanna Andrews, Suraya Dawad. Dalal, Koustuv, Johanna Andrews, and Suraya Dawad. "Contraception use and associations with intimate partner violence among women in

Bangladesh. Journal of biosocial science. 2012;44(01):83-94.
21. Das, Sushmita, Ujwala Bapat, Neena Shah More, Glyn Alcock, Wasundhara Joshi, et al. Intimate partner violence against women during and after pregnancy: a cross-sectional study in Mumbai slums. BMC public health. 2013;13(1):813.
22. Adjiwanou, Vissého, N'Bouke. A. Exploring the Paradox of Intimate Partner Violence and Increased Contraceptive Use in sub-Saharan Africa. Studies in family planning. 2015;46 (2):127-42.
23. Hailemariam A, Haddis F. Factors Affecting Unmet Need for Family Planning in Southern Nations, Nationalities and Peoples Region, Ethiopia. Ethiop J Health Sci.21(2):77-89.
24. Chafo K, Doyore F. Unmet Need for Family Planning and Associated Factors among Currently Married Women in Misha District, Southern Ethiopia: A Cross Sectional Study. J Women's Health Care.3:165. doi:10.4172/2167-0420.1000165.
25. Lailulo YA, Susuman AS. Correlation of Unmet Need and Discontinuation in Ethiopia: a View. Journal of Asian and African Studies. 2014:DOI: 10.1177/0021909614553239.
26. Deyessa N, Kassaye M, Demeke B, Taffa N. Magnitude, type and outcomes of physical violence against married women in Butajira, southern Ethiopia. Ethiop Med J. 1998 Apr;36(2):83-92. PubMed PMID: 10214450.
27. Deyessa N, Berhane Y, Alem A, Ellsberg M, Emmelin M, Hogberg U, et al. Intimate partner violence and depression among women in rural Ethiopia: a cross-sectional study. Clin Pract Epidemol Ment Health. 2009;5:8. PubMed PMID: 19397834. Pubmed Central PMCID: 2689215. Epub 2009/04/29. eng.
28. Dibaba Y. Prevalence and correlates of intimate partner physical violence against women in Kofale District, Ethiopia. Trop Doct. 2008 Jan;38(1):52-4. PubMed PMID: 18302872. Epub 2008/02/28. eng.
29. Gossaye Y, Deyessa N, Berhane Y, Ellsberg M, Emmelin M, Ashenafi M, et al. Women´s Health and Life Events Study in Rural Ethiopia. Ethiopian Journal of Health Development. 2003;17(Second Special Issue 2003):1-51.
30. Central Statistical Authority (CSA), ORC Macro. Ethiopia. Demographic and Health Survey 2016. Addis Ababa. . Ethiopia and Calverton MD., USA 2017.
31. Central Statistical Authority (CSA). Population and Housing Census of the Federal Government of Ethiopia 2007 Addis Ababa 2007.
32. MEASURE DHS. Description of the Demographic and Health Surveys, Individual Recode, Data File, (DHS III). Ethiopia and Calverton MD., USA 2008.
33. MEASURE DHS. Description of the Demographic and Health Surveys, Individual Recode, Data File, (DHS V). Calverton MD., USA 2012.
34. IBM Corporation. Statisical Package for Social Sciences, Version 23. Release 23.0.0.0.0 2015.
35. Gossaye Y, Deyessa N, Berhane Y, Ellsberg M, Emmelin M, Ashenafi M, et al. Women´s Health and Life Events Study in Rural Ethiopia. Ethiop J Health Dev. 2003;17(Special Issue):1-51.
36. Deyessa N, Berhane Y, Ellsberg M, Emmelin M, Kullgren G, Hogberg U. Violence against women in relation to literacy and area of residence in Ethiopia. Global Health Action. 2010;3(2070).
37. Maybery DJ, Goodyear MJ, Reupert AE, Harkness MK. Goal setting within family care planning: families with complex needs. The Medical journal of Australia. 2013 Aug 5;199(3 Suppl):S37-9. PubMed PMID: 25369848.
38. Hardee K, Harris S, Rodriguez M, Kumar J, Bakamjian L, Newman K, et al. Achieving the goal of the London Summit on Family Planning by adhering to voluntary, rights-based family planning: what can we learn from past experiences with coercion? International perspectives on sexual and reproductive health. 2014 Dec;40(4):206-14. PubMed PMID: 25565348.
39. Gribble J, Haffe J. Reproductive Health in Sub-Saharan Africa. Bureau BPR, editor. Connecticut Ave., NW, Suite 520 Washington DC USA2008.
40. Clark CJ, Spencer RA, Khalaf IA, Gilbert L, El-Bassel N, Silverman JG, et al. The influence of family violence and child marriage on unmet need for family planning in Jordan. The journal of family planning and reproductive health care. 2017 Apr;43(2):105-12. PubMed PMID: 26956155.
41. Wulifan JK, Brenner S, Jahn A, De Allegri M. A scoping review on determinants of unmet need for family planning among women of reproductive age in low and middle income countries. BMC women's health. 2016 Jan 15;16:2. PubMed PMID: 26772591. Pubmed Central PMCID: 4714507.
42. Gebre G, Birhan N, Gebreslasie K. Prevalence and factors associated with unmet need for family planning among the currently married reproductive age women in Shire-Enda- Slassie, Northern West of Tigray, Ethiopia 2015: a community based cross-sectional study. The Pan African medical journal. 2016;23:195. PubMed PMID: 27347284. Pubmed Central PMCID: 4907757.
43. Khan S, Sara E, Bradley J, Mishra V. Unmet Need and the Demand for family planning in Uganda: Further Analysis of the Uganda Demographic and Health Surveys 1995- 2006 Inc MI, editor. Calverton, Maryland, USA 2008.