ISSN: 2226-7522(Print) and 2305-3327 (Online)
Science, Technology and Arts Research Journal
April-June 2013, 2(2): 48-57
www.starjournal.org

Original Research

Health Effects of Intimate Partner Violence against Women: Evidence from Community Based Cross Sectional Study in Western Ethiopia

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Abstract

Intimate partner violence against women undermine the physical, mental and reproductive well-being of women. Thus, this study was aimed to assess the association between intimate partner violence against women and a range of adverse health outcomes in East Wollega Zone, West Ethiopia. A cross-sectional population based household survey was conducted between January and April, 2011. A sample of 1540 ever married/cohabited women was chosen using systematic random sampling technique. Standard WHO multi-country study questionnaire was used to interview the selected women. Lifetime experiences of intimate partner violence against women was the independent variable, whereas, the experiences of symptoms of mental distress, physical injury, sexually transmitted infections, unintended and termination of pregnancy were the dependent variables. Data was entered into Epi DATA and analyzed using SPSS 19. Binary logistic regression models were used to predict the association of study variables and adjust for possible confounders. Nearly two third (64.1%) of physically abused women had been injured. The vast majority (94.0%) experienced symptom of mental distress. Sixty four percent of abused compared to 41.7% of non-abused women ever had a symptom of sexually transmitted infections (p<0.001). Furthermore, 16% of abused women had an unintended pregnancy versus 11.3% reported the same from non-abused women (p<0.05). The results of multiple logistic regression analysis indicated that intimate partner violence against women is independently associated with symptoms of mental distress, sexually transmitted infections, unintended and termination of pregnancy. However, it is not associated with ever use of family planning methods (p>0.05).Intimate partner violence against women negatively affects physical, mental and reproductive health of women in the study areas. This needs an urgent attention by policymakers, stakeholders, and professionals at all levels.

Article Information

Article History:

Received : 08-04-2013
Revised : 20-06-2013
Accepted : 22-06-2013

Keywords:

Health outcomes
Intimate partner
Reproductive
Violence against women
Western Ethiopia

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INTRODUCTION

Intimate partner violence against women (IPVAW) can be defined as a pattern of abuse whereby one partner exerts physical, sexual, or emotional control over a romantic partner (Coker, Smith *et al.,* 2000). IPVAW is one of the most global human rights abuse and public health problems. It is the manifestation of gender inequality for women and girls due to their social status in the society (Kishor and Kiersten, 2004). IPVAW occurs to women of all ages; however, reproductive age represents an increased risk (Kishor and Kiersten, 2004 and Ellsberg, Jansen *et al.,* 2008). Studies elsewhere have indicated that IPVAW undermines the sexual and reproductive, physical and mental well-being of women (Heise, Nahid *et al.,* 1995; Krug *et al.,* 2002; Berhane 2004; Geraldine, 2004).

The health consequences of IPVAW include physical trauma, reproductive health problems, mental/psychological/behavioral problems, and fatal health conditions. Population-based studies have suggested that 20-75% of intimate partner physical violence against women resulted in injuries (Kishor and Kiersten, 2004) in which abrasion, bruises,

fracture, and abdominal thoracic injuries are direct consequences of physical trauma (Gossaye, Deyessa *et al.,* 2003; WHO, 2005; Campbell, 2002). Among the reproductive health problems the most common and frequently cited are highest unmet need for family planning and lower contraceptive use (Kishor and Kiersten, 2004), unintended (unwanted or mistimed) pregnancy (Kishor and Kiersten, 2004; Pallitto Campbell *et al.,* 2005; WHO, 2005), terminated pregnancy (abortion and miscarriages) (Taddesse Yoseph *et al.*, 1994; Janssen Holt *et al.,* 2003 and WHO, 2005), and sexually transmitted infractions (STIs) including HIV/AIDS (Heise Ellsberg *et al.,* 1999; Maman Mbwambo *et al.,* 2000; Kishor and Kiersten, 2004; Dunkle Jewkes *et al.,* 2004; Campbell, 2002). Furthermore, depression, sleeping problems, suicidal ideation and attempts are the most common mental health problems associated with IPVAW (Gossaye Deyessa *et al.*, 2003; WHO, 2005; Deribew, 2007; Campbell, 2002). Among the fatal health problems of IPVAW suicides, homicides, maternal mortality, and AIDS related deaths are common (Krug Dahlberg *et al.,* 2002).

Despite the tremendous consequences, studies focusing on the association between IPVAW and health outcomes are few (Ellsberg and Heise, 2005; Binson *et al.*, 2000), especially in developing countries including Ethiopia (Gossaye Deyessa *et al.*, 2003; WHO, 2005). In the western part of Ethiopia where the culture of the community is fairly different (A National Report, 2004) population-based study on IPVAW and its consequences is hardly found.

Such information may contribute to the growing literature in the field and may inform policy interventions to manage IPVAW and improve the health condition of women. The study does not necessarily ask new questions, since the reality of a culture of silence around issues of IPVAW has been long acknowledged especially in the context of Reproductive Health (RH) problems of women including HIV and AIDS. It however builds on this acknowledgement by articulating the specific contextual examples and addressing specific issues. Therefore, this study was aimed to fill the gap in assessing the association between IPVAW and a range of non-fatal health outcomes and behaviors in the East Village zone, West Ethiopia.

MATERIALS AND METHODS

Study Settings

The study was conducted in one urban and four rural districts in the East Village zone, which is one of the 18 zones of Oromiya regional state. It is located in the western part of the country 331 kms from Addis Ababa, Ethiopia. In the study area, two out of six subcities of Nekemte (the capital city of the zone) and eight out of fifty *kebeles* of rural settings were randomly selected. The total population of the zone is 1,340,581 during the study period. Besides, different ethnic groups such as Oromo, Amhara, Gurage and Tigre are residents of the zone, out of which 85% of the dwellers were Oromo and *Afan Oromo* is the working language (CSA, 2006 and CSA, 2010). Regarding infrastructure and social services, Nekemte Town has one hospital and two health centers which are government owned, and various private and faith-based health institutions. Similarly, the study *woreda*s have more than one government owned health center each, health posts, infrastructures like telephone services, and dry weather roads. In the study area there are six high schools and 30 primary and junior secondary schools. However, about half of women age 15-49 years (51%) have no formal education and considered illiterate (CSA, 2010). The rural communities are largely dependent on traditional agricultural activity (subsistence farming), whereas the urban population (Nekemte Town) lives off businesses ranging from small to large scale (CSA, 2010).

Study Design and Population

A comparative cross-sectional population based household survey was carried out between January and April, 2011. As the source population, ever married/cohabited women aged 15-49 years who were residents of the study community for at least 6 months were used. The aforementioned group was selected as it is at the highest risk of intimate partner violence (Garcia, 2006 and Garcia *Jansen et al.,* 2006).

Sample Size Calculation

Unintended pregnancy was considered as the main outcome of interest and experiencing IPVAW during lifetime as exposure variable. Since the difference in the outcome between exposed and non-exposed is small for unintended pregnancy among the different health outcomes, it gave the maximum sample size to address the objectives. The following assumptions were made to calculate the sample size: 40% and 29% of women have the outcome among exposed and non-exposed groups, respectively (Kishor and Kiersten, 2004), a 5% type I error, 80% power to detect the assumed differences, a ratio of exposed to non-exposed group of 2:1, a design effect of 2 and adding 10% for non responses. Accordingly, 506 non-exposed and 1012 exposed women (a total of 1,518) were required for the study. However, as these studies were part of a survey which was conducted to assess the prevalence and risk factors of IPVAW, a

larger sample size of 1,600 women was included (Abeya Afework *et al.,* 2011).

To interview the eligible women, multi stage sampling procedure was employed. Firstly, household census and numbering was done in the selected sub-cities and *kebeles* to obtain a sampling frame. Secondly, after identifying households having the target groups, proportion of sample size allocations were carried out. To this effect, systematic random sampling was used to identify the target from the selected households as a study unit. Only one eligible was selected for interview by Kish grid method to control the potential intra-household correlation (Binson Canchola *et al.,* 2000).

Data Collection

Data were collected by 25 high school completed female interviewers using WHO multi-country study of violence against women (VAW) questionnaire (WHO, 2003). The questionnaire was translated into the local language (*Afan Oromo*) by experts in both languages and back translated to English by another person to ensure consistency and accuracy. The data collection process was closely supervised by five Health Officers and one of the principal investigators. Enumerators and supervisors were trained for seven consecutive days in sampling, interview techniques and ethical issues, emphasizing the importance of safety of the participants as well as interviewers, minimization of under- reporting and confidentiality. A pre-test was conducted in one *kebele* out of the study area at 10% of the total sample size. A standard field work manual developed by the WHO for violence study was adopted and used by all research teams (Ellsberg and Heise, 2005). To ensure the quality of the data and minimize inter-interviewer variation, ~5% of the respondents were re-interviewed at random by the principal researcher and supervisors and checked for consistency.

Measurements

The experiences of IPVAW were considered as independent variables and assessed using a modified and revised version of the Conflict Tactic Scale (CTS2) (Straus Hamby *et al.,* 1996). IPVAW is defined as exposure to one or more of physical, sexual or psychological abuse (Garcia *Jansen et al.,* 2006). The details were described in the previous study (Abeya Afework *et al.,* 2011). In addition, variables that have been theoretically, empirically and conceptually linked to health outcomes of IPVAW such as age, education, socioeconomic status (SES), and area of residence were included as independent variables.

Ever experiences of physical injury, unintended (unwanted or mistimed) pregnancy, terminated pregnancies (spontaneous or induced abortion), symptoms of STIs, symptoms of mental distress and ever use of family planning methods were considered as indicators of health outcomes of IPVAW (Krug Dahlberg *et al.,* 2002; Garcia Jansen *et al.,* 2005). In this regards, mental health was assessed by the use of self-reporting questionnaire of 20 questions (SRQ-20), developed by WHO to screen for emotional distress which was validated in many settings (Ellsberg Jansen *et al.,* 2008).

Analysis

The pre-coded responses were double entered into the Epi- DATA version 3.1 and later it was exported into IBM SPSS statistics 19 for data checking, cleaning, simple and multiple logistic regression analysis. The strengths and directions of the associated factors were explained (reported) using adjusted odds ratios relative to the reference category, at statistical significance of 95% confidence level and *P*-value of <0.05. A separate analysis was done for all health outcomes of IPVAW. The model adequacy and Collinearity assumptions were checked to be satisfied based on appropriate methods designed for the study.

Ethical Considerations

The research was approved for scientific and ethical integrity by an institutional review board by College of Health Sciences, Addis Ababa University. Moreover, WHO guideline on ethical issues related to violence research was strictly followed (Heise Nahid *et al.,* 1995; Ellsberg Heise *et al.,* 2001; Ellsberg and Heise, 2005). For this reason, all interviews took place in a complete privacy except for children under two years of age. For the respondents aged from 15 to 17 years assent was secured from parents or guardians. During data collection the interviewee with serious psychological distress, happen to be suicide or in need of counseling was referred to Nekemte Hospital. Otherwise, the information about available local services was provided to all respondents. Follow-up services were also provided for some respondents who were in need of help.

RESULTS

Socio-Demographic Characteristics

A total of 1540 study subjects completed the interview making a response rate of 96.3%. The socio-demographic characteristics of the women are described in table 1. The majority (84.2%) were residing in a rural setting and most (78.6%) of the women were in the age range of 20- 34 years. The mean age of the women was 28.4 years (±5.7 SD). The vast majority (98.7%) was ever married at the

time of the interview and predominantly Christian (97.5%) and Oromo (96.4%) by their religion and ethnicity, respectively.

Nearly about three fifth (59.7%) of the women had no formal education. Moreover, more than four in every five women (83.3%) had no job but manage their own household as their main occupation (housewives) and 59.5% of the women have moved to the study area after being born and brought up in other places because of marriage or work related conditions (Table 1).

Overall the prevalence of both lifetime experiences of emotional, physical, and sexual violence was 70.2%, 68.6%, and 61.6% respectively. Of the total respondents, more than three quarters (76.5%) reported having had an experience of IPVAW in one form or another at some point in their lifetime, and 72.5% reported for the same in the preceding year.

Table 1: Socio demographic characteristics of 1540 ever married/cohabited women age 15-49 years in East Wollega Zone, January to April, 2011.

Characteristics (Variables) n=1540	Number	Percent
Residency		
Urban	240	15.8
Rural	1296	84.2
Age		
15-19 years	28	1.8
20-34 years	1,208	78.4
35- 49 years	304	19.8
Mean age	28.5±5.7 SD	
Religion		
Christian	1496	97.5
Muslim	18	1.2
Others (Catholic, others)	20	1.3
Ethnicity		
Oromo	1484	96.4
Amara	40	2.6
Others (Gurage, Tigre)	16	1.0
Place of birth and grownup		
Same community	624	40.5
Different community	916	59.5
Marital status		
Currently married	1420	92.2
Currently cohabited	20	1.3
Separated/divorced/widowed	100	6.5
Education level		
No formal education	919	59.7
Primary (1-6th grade)	399	25.9
Secondary (>=7th grade)	222	14.4
Current occupation		
Student	12	0.8
No job	1283	83.3
Trade activities	63	4.0
Govern. Employee	24	1.6
Farmer/female headed	74	4.8
Others	84	5.5
Wealth quintile		
Very poor	305	19.8
Poor	320	20.8
Medium	318	20.6
Rich	269	17.5
Very rich	328	21.3
Experiences of lifetime emotional violence	1081	70.2
Experiences of lifetime physical violence	1056	68.6
Experiences of lifetime sexual violence	948	61.6
Experiences of lifetime IPVAW	1178	76.5

Health Problems

From 1056 (68.6%) of women who had experienced lifetime physical intimate partner violence, 987 (64.1%) had been injured for at least once in their lifetime. Minor injuries such as scratch, abrasion and bruises are most commonly reported by 60.1% of the women. About one third (31.5%) experienced severe forms of physical violence like cuts, punctures and bites. Besides this, women experienced the most severe forms like sprains and dislocations (22.5%), burns (6.8%), injuries to the eyes and ears (5.3%), fractures (3.8%), broken teeth (1.2%) and other forms of injuries (0.3%) in their lifetime. Due to these events, nearly one third (28.5%) of women reported to have ever loss of consciousness from which 104 (10.6%) reported to have lost their consciousness for more than one hour. Although 86 (8%) of them were injured badly enough and needed health care, only 69 (6.5%) of them received health care at least once for their injuries (Table 2).

Table 2: Distribution of physically abused women according to types of injury in the East Wollega Zone, January to April, 2011.

Variables	During lifetime	
	Number	Percent
Physical injury (N= 987)		
Cuts, punctures, bites	485	31.5
Scratch, abrasion, bruises	925	60.1
Sprains, dislocations	346	22.5
Burns	105	6.8
Penetrating injury, deep cuts, gashes	33	2.1
Broken eardrum, eye injuries	81	5.3
Fractures, broken bones	59	3.8
Broken teeth	18	1.2
❖ At least one of the above	987	64.1
Ever loss consciousness because of physical violence		
Yes	280	28.4
No	701	71.6
Time of loss of consciousness		
Less than 1 hour	176	18.4
More than 1 hour	104	10.6
No	701	71.6
Need health care n=1074		
Yes	86	8.0
No	727	67.7
Ever receive health care because of physical violence n=1074		
Yes	69	6.4
No	17	1.6

The vast majority (93.3%) of the women experienced one or more of the 20 symptoms of mental distress in their lifetime. The majority (82.8%) had headaches, followed by feelings of nervousness or get worried which accounted for 72.8%. Surprisingly, about one third (30.8%) of the women ever thought of ending their life (Table 3).

Regarding the sexually transmitted infections (STI), the result indicated that 64% of women who have experienced lifetime IPVAW had at least one symptom of STI compared to 42% of their counterparts. Accordingly, about one third (32.8%) reported a burning sensation during urination and other symptoms like genital itching and unusual discharge from genitalia that accounted for 26.0% and 13.4%, respectively (Figure 1).

In relation to STI symptoms, nearly one third (31.1%) of women who experienced IPVAW in their lifetime had perceived risks of contracting HIV and AIDS compared to one quarter (25%) of women without such experiences. On the other hand, more than one in every six (16.3%) women had experienced both IPVAW and unintended pregnancy for at least once in their lifetime than 11.3% of non-abused women reported for the same. In the same way, the lifetime experiences of terminated pregnancy were reported by 82 (7.2%) of abused women verses 17 (4.8%) for their counterparts. Similar pattern were seen for the mental health problem of the women in the study area (Table 4).

Table 3: Distribution of women reported symptoms of mental distress based on 20 SRQ in East Wollega Zone, January to April, 2011.

Life time experiences symptoms of mental distress (n=1540)	Number	Percent
Head ache	1275	82.8
Poor appetite	541	35.1
Sleep badly	700	45.5
Easily frightened	622	40.4
Hands shake	354	23.0
Feel nervous, tense or worried	1121	72.8
Poor digestion	486	31.6
Trouble thinking	659	42.8
Feel unhappy	813	52.8
Cry more than usual	910	59.1
Difficult to enjoy	695	45.1
Difficult to make decisions	634	41.2
Suffering in daily work	904	58.7
Unable to play	809	52.5
Lost interest in things	736	47.8
Feel worthless person	809	52.5
Thought of ending life	475	30.8
Feel tired	936	60.8
Uncomfortable feelings in stomach	783	50.8
Easily tired	899	58.4
❖ One or more symptoms of mental distress	1512	93.3

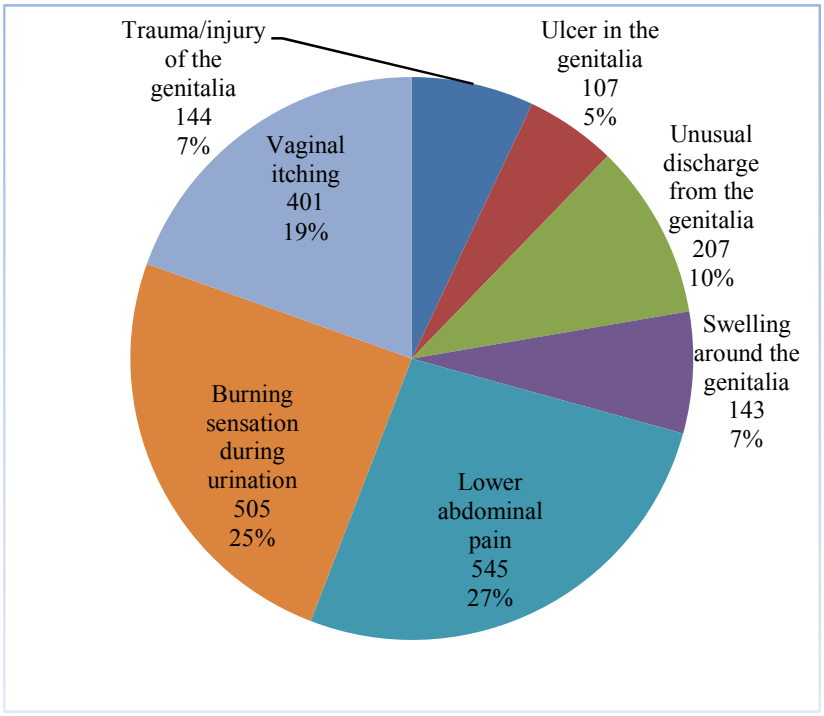

Figure 1: Distribution of women reported lifetime symptoms of sexually transmitted infections in East Wollega Zone, January to April, 2011.

Association of Intimate Partner Violence against Women

The association of IPVAW with mental health problems & selected reproductive health outcomes/ behavior were assessed independently at bivariate level. In a multiple variable analysis other potential factors such as age of the women, education level, area of residence, and SES were controlled (Emenike Lawoko *et al.,* 2008) and the results of the final models are presented in Table 4.

The results showed that women reported the lifetime experience of sexual violence nearly twice (AOR, 1.71; 95% CI, 1.15 to 2.55) more likely to have one or more symptoms of mental distress in their lifetime. The association of the symptoms of mental distress was not statistically significant with lifetime experiences of psychological and physical violence. Nevertheless, women experienced at least one of IPVAW are (AOR, 1.40; 95% CI, 1.10 to 2.31) more likely to report symptoms of mental distress.

Compared to women who had not experienced any form of IPVAW, those who had the experience were significantly at increased likelihood to have symptoms of STI in their lifetime. Women experienced psychological, physical, sexual, and at least one of IPVAW in their lifetime were more than two times (AOR, 2.79; 95% CI, 2.23 to 3.50), (AOR, 2.68; 95% CI, 2.14 to 3.35), (AOR, 2.18; 95% CI, 1.76 to 2.70), and (AOR, 2.46; 95% CI, 1.93 to 3.14) as likely to have at least one symptoms of STI in their lifetime, respectively. Moreover, women experienced IPVAW had increased odds of reporting perceived risks of contracting HIV and AIDS than their counterparts. This is to mean that, women who had experienced physical violence (AOR, 1.31; 95% CI, 1.01 to 1.69), sexual violence (AOR, 1.39; 95% CI, 1.09 to 1.77), and IPVAW (AOR, 1.35; 95% CI, 1.02 to 1.78) were more likely to perceive the risk of catching HIV and AIDS than their counterparts.

In this study, none of the different forms of IPVAW were statistically associated with ever use of family planning. In spite of this, women experienced psychological violence (AOR, 1.44; 95% CI, 1.04 to 1.99), physical violence (AOR, 1.49; 95% CI, 1.07 to 2.05), sexual violence (AOR, 1.63; 95% CI, 1.20 to 2.22), and at least one IPVAW (AOR, 1.46; 95% CI, 1.01 to 2.09) in their lifetime were more likely to have an unintended pregnancy. In addition, women experienced lifetime physical violence (AOR, 1.79; 95% CI, 1.08 to 2.97) and at least one IPVAW (AOR, 1.79; 95% CI, 1.02 to 3.15) were more likely to have terminated pregnancy in one form or another than their counterparts (Table 4).

DISCUSSION

The main findings of this study are more than half (60%) of women have no formal educations and IPVAW is the most prevalent in the study area. Moreover, IPVAW is independently associated with negative effects on women's health.

The experiences of physical injuries in this study are consistent with those of the studies elsewhere that established physical intimate partner violence as common causes of injury to women (Kishor and Kiersten, 2004; Krug Dahlberg *et al.,* 2002; Ellsberg Jansen *et al.,* 2008). In addition, in this study more than a quarter (28.4%) of women experienced loss of consciousness due to physical violence at least once in their lifetime. This corroborates findings from Butajira that showed 26.7% of women experienced loss of consciousness for the same reason (Ellsberg Jansen *et al.,* 2008). This indicates that the severity of physical violence is alarming for women's health and warrants other studies to assess death of women associated with physical IPVAW.

Moreover, the odds of ever having one or more symptoms of self reported mental health problem were significantly higher among women who reported sexual violence and at least one form of IPVAW than women who did not. This coincides with studies from other countries (Heise Ellsberg *et al.,* 1999; Krug Dahlberg *et al.,* 2002). This might imply that IPVAW in general and sexual violence in particular possibly results in poor mental health, suicidal ideation and attempts.

The use of family planning is not statistically associated with all forms of IPVAW. This is in contrast with the findings of studies from other countries (Kishor and Kiersten, 2004; Emenike Lawoko *et al.,* 2008) and particularly Colombia, where IPVAW was associated with restricted use of family planning methods (Pallitto and O'Campo, 2004). The difference is possibly due to cultural variations in men's attitudes towards women's use of contraceptives in different societies (Emenike Lawoko *et al.,* 2008). This is best explained by the fact that the use of contraceptives is more likely to be accepted in more liberal societies than in conservative societies where using family planning out of the knowledge of husbands/partners may not be regarded as a social norm.

Although this study did not collect data on current HIV and AIDS status of the women, it showed that about one out of every three women perceived HIV as a possible consequence of experiences of IPVAW. This is consistent with the study result that showed increasing links between IPVAW and HIV (UNAIDS, 2008). Further, it has been found out that

Table 4: Proportion of violence and Odds ratios (95% CI) from binary logistic regressions assessing the association of mental problem and selected reproductive health outcomes and behaviors of IPVAW among 1540 ever married/cohabited women age 15-49 years in East Wollega Zone, January to April, 2011.

Forms of PVAW in lifetime (n=1540)	Mental Health Problems			Symptoms of STI			Perceived Risk of HIV/AIDS		
	No (%)	Yes (%)	AOR (95% CI)	No (%)	Yes (%)	AOR (95% CI)	No (%)	Yes (%)	AOR (95% CI)
Emotional Violence									
No	39 (8.5)	418 (91.5)	1.00 (Reference)	268 (58.6)	189 (41.4)	1.00 (Reference)	328 (74.1)	111 (25.3)	1.00 (Reference)
Yes	64 (5.9)	1019 (94.1)	0.99 (0.78, 1.25)	367 (33.9)	716 (66.1	2.79 (2.23, 3.50)**	712 (68.50	327 (31.5)	1.24 (0.95, 1.61)
Physical Violence									
No	36 (7.7)	430 (92.3)	1.00 (Reference)	269 (57.7)	197 (42.3)	1.00 (Reference)	332 (74.1)	116 (25.90	1.00 (Reference)
Yes	67 (6.2)	1007 (93.8)	1.13 (0.90, 143)	366 (34.1)	708 (65.9)	2.68 (2.14, 3.35)**	638 (67.9)	322 (31.3)	1.31 (1.01, 1.69)*
Sexual Violence									
No	49 (8.8)	506 (91.2)	1.00 (Reference)	290 (52.3)	265 (47.7)	1.00 (Reference)	402 (74.7)	136 (25.3)	1.00 (Reference)
Yes	54 (5.5)	931 (94.5)	0.93 (0.75, 1.16)	345 (35.0)	640 (65.0)	2.18 (1.76, 2.70)**	638 (67.9)	302 (32.1)	1.39 (1.09, 1.77)*
One or more of IPVAW	32 (8.8)	330 (91.2)	1.00 (Reference)	211 (58.3)	151 (41.7)	1.00 (Reference)	262 (75.1)	87 (24.9)	1.00 (Reference)
No	71 (6.0)	1107 (94.0)	1.14 (0.89, 1.47)	424 (36.0)	754 (64.0)	2.46 (1.93, 3.14)**	778 (68.9)	351 (31.1)	1.35 (1.02, 1.78)*
Yes									

STI- Sexually transmitted infections, * *p*- Value <0.05, ** *p*- Value <0.001, Adjusted for age of the women, education level, area of residence, and SES

Forms of PVAW in lifetime (n=1540)	Use of Family Planning			Unintended Pregnancy †			Terminated Pregnancy §		
	No (%)	Yes (%)	AOR (95% CI)	No (%)	Yes (%)	AOR (95% CI)	No (%)	Yes(%)	AOR (95% CI)
Emotional Violence									
No	195 (42.7)	262 (57.3)	1.00 (Reference)	402 (88.0)	55 (12.0)	1.00 (Reference)	427 (94.7)	24 (5.3)	1.00 (Reference)
Yes	450 (41.6)	633 (58.4)	0.99 (0.78, 1.25)	905 (83.6)	178 (16.4)	1.44 (1.04, 1.99)*	976 (92.4)	75 (7.1)	1.45 (0.90, 2.34)
Physical Violence									
No	198 (42.5)	268 (57.5)	1.00 (Reference)	411 (88.2)	55 (11.8)	1.00 (Reference)	463 (95.2)	22 (5.3)	1.00 (Reference)
Yes	447 (41.6)	627 (58.4)	1.13 (0.90, 143)	896 (83.4)	178 (16.6)	1.49 (1.07, 2.05)*	967 (92.6)	75 (7.1)	1.79 (1.08, 2.97)*
Sexual Violence									
No	223 (40.2)	332 (59.8)	1.00 (Reference)	492 (88.6)	63 (11.4)	1.00 (Reference)	515 (94.3)	31 (5.7)	1.00 (Reference)
Yes	422 (42.8)	563 (57.2)	0.93 (0.75, 1.16)	815 (82.7)	170 (17.3)	1.63 (1.20, 2.22)*	888 (92.9)	68 (7.1)	1.41 (0.90, 2.20)
One or more of IPVAW	164 (45.3)	198 (54.7)	1.00 (Reference)	321 (88.7)	41 (11.3)	1.00 (Reference)	339 (95.2)	17 (4.8)	1.00 (Reference)
No	481 (40.8)	697 (59.2)	1.14 (0.89, 1.47)	986 (83.7)	192 (16.3)	1.46 (1.01, 2.09)*	1064(92.8)	82 (7.2)	1.79 (1.02, 3.15)*
Yes									

†Unwanted/mistimed pregnancy, §Induced/spontaneous abortion, **p*- Value <0.05, ** *p*- Value <0.001, Adjusted for age of the women, education level, area of residence, and SES

all forms of IPVAW are significantly and consistently associated with women lifetime report of STIs and this corroborates findings from other studies (Kishor and Kiersten, 2004; Campbell, 2002). The explanation seems to be lack of sexual autonomy among women who experienced IPVAW as this might predispose them to different reproductive health problems such as STIs, HIV and AIDS, and unintended pregnancy with its consequences.

In the same way, women who experienced all forms of IPVAW are at increased odds of having an unintended pregnancy than their counterparts. This is consistent with the results from Uganda in which women experienced IPVAW had more unintended pregnancies after adjusting for age, pregnancy intention and marital status (Kaye Mirembe *et al.,* 2006). In addition, the demographic health survey finding in Cambodia showed that 60% of women who have ever experienced IPVAW had intended pregnancy at the time of birth compared to71% of women who have never experienced IPVAW (Kishor and Kiersten, 2004). The plausible explanation could be the lack of sexual autonomy among abused women suggests a greater risk of having a mistimed as well as an unwanted pregnancy and birth.

Women who had experienced IPVAW in their lifetime had greater odds of having terminated

pregnancy. This is consistent with other studies (Taddesse Yoseph *et al.,* 1994; Janssen Holt *et al.,* 2003; Garcia Jansen *et al.,* 2005; Emenike Lawoko *et al.,* 2008). It is possible to explain that in most developing countries, unintended pregnancy ends up with induced abortion. This could be a manifestation of emotional withdrawal and loss of hope because of IPVAW in being able to care for the eventual newborn child.

In general, at least two plausible mechanisms have been put forward to explain the potential association between IPVAW (especially physical or sexual violence) and adverse reproductive health outcomes. One mechanism is the direct biological effects of coerced intercourse such as unintended pregnancy, termination of pregnancy, STIs and their consequences. The second mechanism suggests that physical or sexual violence may dis-empower women in negotiating safer sex and may negatively affect protective behaviors related to fertility regulation and STIs (Erulkar, 2004).

Though it has come up with useful information, this study has the following limitations. The cross-sectional nature of the study may cause difficulty of determining the direction of the association between study variables and the association can only be discussed in terms of plausibility. Social desirability bias may have some impact on the response to some sensitive questions like self reported STIs though syndromic assessment would have been better.

CONCLUSION

Intimate partner violence against women is a major public health problem in the study community. Moreover, women that experienced IPVAW suffered from negative physical health consequences including injury to the body and loss of consciousness. IPVAW is also seen to contribute to poor mental health and negative reproductive health and behaviors including perceived risks of HIV/AIDS, Sexually transmitted infections, unintended pregnancy and termination of pregnancy.

This clearly indicated that the victims of IPVAW need not only treatment of physical injuries but also counselling, and support (psychological, material) to enable them to cope with the violence and the emotional turmoil. The counselling could be regarded decision-making about health care or leaving the relationship. This needs an urgent attention at all levels of societal organization including policy makers, stakeholders, and professionals. Moreover, extensive and longitudinal research is needed to explore more.

ACKNOWLEDGEMENTS

We are very much grateful to Addis Ababa University and Bill and Melinda Gates Institute, John Hopkins University for funding the study. Our thanks also go to the study participants for their willingness to participate in the research.

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